IMPROVING BROADBAND DEPLOYMENT: SOLUTIONS FOR RURAL AMERICA

HEARING

BEFORE THE

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CONTENTS

OPENING STATEMENTS

WITNESSES

APPENDIX

IMPROVING BROADBAND DEPLOYMENT: SOLUTIONS FOR RURAL AMERICA

THURSDAY, JUNE 22, 2017

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SMALL BUSINESS,
SUBCOMMITTEE ON AGRICULTURE, ENERGY, AND TRADE,
Washington, DC.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 2360, Rayburn House Office Building, Hon. Rod Blum [chairman of the Subcommittee] presiding.

Present: Representatives Blum, Chabot, King, Leutkemeyer, Comer, Bacon, and Schneider.

Chairman BLUM. Good morning. I call this hearing to order.

Thank you for all being here today as we assess how our Nation is doing at building out broadband services to our rural areas. And do not let lack of attendance here indicate to you in any way lack of interest. As Ranking Member Schneider and I were just saying, it is a very, very busy day and a lot of things going on this morning. So everybody, maybe more so than usual, is being pulled in multiple directions. But rest assured it is a very serious issue. And I am from a rural district and it is talked about every time I am back in the State of Iowa.

As we have all witnessed in the last decade, modern communications technology has provided endless opportunities to small businesses, and particularly new and exciting ones to small firms located in rural America. The growth of the telecommunications industry and the advances in the way we communicate with each other in recent history has been nothing less than astonishing.

Because of this rapid advancement, we have seen a revolution of sorts for small businesses as well. Small firms can communicate now with potential buyers around the world. Family farmers are using wireless technologies to monitor and maximize their crop production. Entrepreneurs can launch a website or an application from their living room or from just about anywhere. I own a small technology company and we sell around the world, and we could not do it without the internet. And with the use of now commonplace smartphones, we can accept payments from just about anywhere there is a wireless signal. Most importantly, these new technologies provide the gateway and opportunity for economic growth and job creation, particularly in rural areas.

One of the most important tools the internet offers to small business is the ability to access the national and global electronic marketplace. From 2005 to 2015, electronic commerce in the United States, also known as online sales, grew from $291 billion to $342

billion. It is an average increase of 15.3 percent from 2012 to 2015. Phenomenal growth. And this will not slow down anytime soon; I am sure you would agree.

Our small businesses, particularly ones in rural areas, depend on new telecommunications technologies to compete across town and across the globe. Our witnesses today represent a critical part of the infrastructure that allows them to do just that. The Nation's small telecommunications providers are the ones that traditionally supply the bulk of broadband services to the most rural parts of America, and that is no easy task.

For instance, it is certainly worth the investment when you connect broadband to a densely populated urban area with homes, apartments, businesses, and people all converging in a relatively small area. It is not uncommon to have hundreds, if not thousands, of potential subscribers in a 1 square mile area. In rural areas, where family farms dot the landscape, acres and acres and acres apart from each other, in towns with populations of 300 representing the center of the community, the bang for the investment buck is not quite as large. Unfortunately, the simple geographic fact of population density has led to a rather large disparity of 39 percent of our rural Americans not having access to high-speed telecommunications capacity—39 percent—compared to only 4 percent of Americans who live in urban areas. We have been making progress over the past few years, but more needs to be done to put rural America on par with urban America.

This issue is a double-edged sword in that we have small telecommunications companies serving the greater rural, small business sector at large with no small responsibility. We here in Congress must ensure that our Federal Government's regulatory regime is supporting and fostering growth in the telecommunications industry, not penalizing and limiting it, as we have seen in recent years. We have a new administration and new leadership at the Federal Communications Commission, or the FCC as most of us know it by, and other regulatory bodies that have a significant say about how and when broadband services can be delivered to rural areas in the United States. And I remain hopeful for continued, positive change.

Again, I want to thank everyone for being here, particularly our panelists. And I now yield to our ranking member, Mr. Schneider, for his opening remarks.

Mr. SCHNEIDER. Thank you, Mr. Chairman. I want to welcome the chairman of the overall Small Business Committee, Mr. Chabot. I'm pleased to join you both at this very important hearing today.

Technology is a major contributor to the U.S. economy and the engine for modern American economic growth. Last year alone, the internet created 10.4 million jobs across all 50 States and contributed to 6 percent of the total U.S. GDP, 1.2 trillion dollars. At a time when technology holds the key to remaining competitive in a globalized economy, it is worrisome that the United States is ranked number 16 in the world in broadband access. Let me repeat that, the United States is ranked 16th in the world in broadband access.

For those of us fortunate enough to have access to broadband, we have seen the benefits of technology and how it affects our daily lives. From being able to make decisions based on real-time data, to being able to work remotely from any location, internet access has changed the face of business. Yet 34 million Americans still lack access to high-speed internet, 39 percent of which live in rural communities. This is simply unacceptable.

Even though broadband subscriptions have progressively increased, rural and low-income community access is being outpaced by the rest of the country due to a lack of network deployment. Unfortunately, the digital divide may further widen without adequate support for broadband deployment. The truth is that expanding access in hard-to-reach and sparsely populated areas usually comes with a high price tag and significant challenges.

The government plays a large role in ensuring all Americans have access to 21st century technology, and that is why we are holding this hearing, to learn just how we in Congress can improve broadband adoption. Eliminating the digital divide will not only assist rural communities; it will help our Nation's job creators. By enabling small business access to the global electronic marketplace, we encourage job creation and innovation. Thus far, Federal loan and grant programs have helped rural communities gain access to high-speed internet, but we need to do more. Substantial and direct funding to improve broadband nationally is critical to enabling both small telecom carriers and small consumers to thrive.

In the wake of a larger infrastructure package, we have an enormous opportunity to upgrade America's digital blueprint. We must harness the potential of robust technologies and find the sweet spot between government oversight and technological advancements, all without hindering business opportunities.

I look forward to today's discussion on improving broadband access in order to strengthen rural communities and small businesses. The insights gathered today will allow us to evaluate the performance of the FCC and supporting network deployment.

I would like to thank all of the witnesses for being here today and providing us your insight. And with that I yield back. Thank you.

Chairman BLUM. I would now like to explain opening statements, how that works and timing.

If Committee members have an opening statement prepared, I ask that it be submitted for the record.

I would like to take a moment to explain once again the timing lights for you. You will each have 5 minutes to deliver your testimony. The light will start out as green. When you have 1 minute remaining, it will turn to yellow. And finally, at the end of your 5 minutes, it will turn to red. And we ask that you please try to the best of your ability adhere to that timeframe.

Now I would like to introduce our distinguished panel today. Our first witness today is Mike Romano, Senior Vice President of Industry Affairs and Business Development for NTCA, the Rural Broadband Association. In his role, he directs public policy, government affairs, business opportunities, and community initiatives for the nearly 850 small rural telecommunications providers it serves. Mr. Romano previously worked with the Bingham McCutcheon

Law Firm and has had a diverse range of position within the telecommunications industry, including Founding Vice President and General Counsel of GTT Communications, following a merger between Global Internetworking, Inc., and European Technologies and Telecommunications. He has also held various positions with America on Line and Level 3 Communications. Thank you for being here with us today, Mr. Romano.

Our next witness is Dave Osborn, CEO of VTX1 in Raymondville, Texas, testifying on behalf of the WTA, Advocates for Rural Broadband. Mr. Osborn has been in his current position for 12 years, prior to which he had already worked in the telecommunications industry, holding various positions with multiple companies for more than 4 decades. Mr. Osborn began his career in the industry in 1970 with Southwestern Bell in Dallas, Texas, eventually climbing the corporate ladder to find himself at AT&T's corporate headquarters in Morristown, New Jersey, in the mid-1980s. He is now at his current position at VTX1 and also sits on the board of directors of the WTA. Thank you for being here with us today, Mr. Osborn.

Up next is Tim Donovan, Senior Vice President of Legislative Affairs for the Competitive Carriers Association, otherwise known as the CCA. We have a lot of acronyms in Washington, D.C., that is for sure. Mr. Donovan previously served as Manager of Government Affairs for the Direct Marketing Association, where he is responsible for supporting the advocacy goals of the direct marketing community. In his current capacity, Mr. Donovan is tasked with presenting the association's legislative advocacy before policymakers on issues impacting wireless telecommunications providers, including broadband deployment, universal service, access to spectrum, devices, broadband policy, roaming, and other issues that affect the policy of these carriers. Does everyone understand all of that? Thank you for being here with us today, Mr. Donovan.

And now I yield to Ranking Member Schneider for their introduction of our final witness.

Mr. SCHNEIDER. Thank you. It is my pleasure to introduce Mr. Chris Allendorf. Mr. Allendorf has served as the vice president of external relations and general counsel for Jo-Carroll Energy since 2015. Joe-Carroll Electric Cooperative is located in my home State of Illinois and was founded with the goal of bringing electricity to rural residents not reached by investor-owned utilities. Since then, the cooperative has transformed to meet the needs of rural communities in modern times by providing other essential services, including broadband internet. Mr. Allendorf has transitioned from corporate counsel to other roles in the cooperative. As general counsel, Mr. Allendorf oversees legal and regulatory matters involving the cooperative's three business areas: electric, natural gas, and broadband internet. Mr. Allendorf also oversees the cooperative's economic development initiatives.

Mr. Allendorf holds a B.S. degree from Western Illinois University and received his J.D. from Northern Illinois University in 2012. Mr. Allendorf is a lifelong resident of rural northwest Illinois. He also serves on the Board of the Galena Area Chamber of Commerce and the Tri-County Economic Development Alliance. Welcome, Mr. Allendorf.

Chairman BLUM. Very good. Very good. Thank you, Mr. Schneider.

And now I would like to recognize our first witness, Mike Romano, for 5 minutes.

STATEMENTS OF MIKE ROMANO, SENIOR VICE PRESIDENT, INDUSTRY AFFAIRS & BUSINESS DEVELOPMENT, NTCA—THE RURAL BROADBAND ASSOCIATION; DAVE OSBORN, CEO, VTX1; TIM DONOVAN, SENIOR VICE PRESIDENT, LEGISLATIVE AFFAIRS COMPETITIVE CARRIERS ASSOCIATION; CHRIS ALLENDORF, VICE PRESIDENT OF EXTERNAL RELATIONS AND GENERAL COUNSEL, JO-CARROLL ENERGY, INC.(NFP)

STATEMENT OF MIKE ROMANO

Mr. ROMANO. Thank you, Mr. Chairman, Ranking Member Schneider, and members of the Subcommittee for the chance to testify on the importance of rural broadband to the U.S. economy and how sound policies can promote the deployment and sustainability of broadband in rural America.

NTCA's 850 members are small businesses, most based in the rural communities they serve. They rose to the original challenge of unserved areas, answering the call and getting telephone service at the time to rural America. Today, these small businesses and cooperatives deliver cutting-edge broadband critical to the well-being of rural America, translating into economic development and job creation. And the payback of these investments comes in economic activity that accrues mostly to the benefit of urban areas.

Small rural carriers have led the charge in deploying future-proof networks, with 71 percent of their customers having access to 25 megabits down speed that the FCC has defined as the access standard today.

But there is much more to do. With the remaining customers being harder to reach and with many rural areas served by other providers suffering from an even greater lack of access and even where networks are built, the job is not done. It is not just about the one-time act of getting broadband out there; it makes little sense to declare victory if the service is too expensive or if the network cannot keep pace with consumer demand.

Unfortunately, the business of rural broadband is hardly a money-making proposition. Distance, density, and topography undercut the business case in rural America. This is why direct support from the High Cost Universal Service Fund is essential. Without sufficient USF, it is difficult, if not impossible, to justify rural broadband loans or to charge reasonable rates for rural service. USF is perhaps the best example of a public-private partnership in the broadband space, having helped to justify construction loans and private network investments that total tens of billions of dollars today.

But the USF program has been badly damaged. While the FCC took much-needed steps to update the program last year, the reforms also revealed more clearly than ever how insufficient the Universal Service Fund is. A flat budget in place since 2011 that is now enforced by a firm control will deny $173 million in USF

support for small rural carriers over the next 12 months. That is $173 million for broadband investments already made, forcing them to respond by hiking rural consumer rates, cutting jobs, and slamming the brakes on future investments. The fact that the budget control changes unpredictably only further undermines their ability to borrow or invest in long-term network assets.

A survey that NTCA just completed and that we will actually be releasing today indicates that two-thirds of our members are pulling back on investments because of this problem, translating potentially to hundreds of millions of dollars in suspended investments and possibly hundreds of thousands of rural Americans locked in at lower speeds.

Tack on another $110 million in shortfalls to fund a support model the FCC developed last year and this translates to lower speeds, higher prices, and less broadband network expansion across 40 percent of the U.S. landmass. This outcome undermines the great progress that has been enabled and achieved by these small companies leveraging the universal service program to date. It is contrary to the universal service mandates of current law. Fortunately, 170 members of Congress, including members of this Subcommittee, have already expressed concern to the FCC about how this affects rural consumers and communities, particularly prices for rural broadband that can remain twice as high as what urban consumers and businesses pay, if not even higher.

We hold out hope, just like our members do, in continuing to try to build where they can, that Congress and the FCC will work together to make sure the promise of last year's USF reforms will be realized by the millions of Americans who badly need them to work.

Given these impacts and the sustainability and effectiveness of the USF program is a top priority, but there are other issues of importance, too. For example, as policymakers consider promoting infrastructure deployment, streamlining and standardizing access to Federal lands would help greatly, especially for small businesses that lack the staff and resources to navigate multiple layers of Federal agency process.

Right size regulation is important, too. A survey NTCA did in 2016 showed that our small business members have only 40 employees on average, but face just under 600 hours of burden, 73 workdays per year in Federal telecom regulatory reporting. We need to strike a better balance between heavy-handed regulation, and, on the other hand, a complete lack of rules of the road that could put important goals, like universal service and interconnection at risk.

Finally, better compliance across Federal agencies with the Regulatory Flexibility Act could help, too. All too often, agencies undertake cursory RFA analyses that do not recognize the realities of operating as a small business. We see great promise in several bills that the Full House has taken up, and we are eager to see those bills provide the guidance necessary to improve the RFA process and result in savings for small companies.

We look forward to working with you on these important public policy initiatives and building upon the many successes these small

businesses have had to date in deploying broadband in rural America.

Thank you again for holding this hearing, and I look forward to your questions.

Chairman BLUM. Thank you, Mr. Romano.

I would like to recognize our next witness now, Mr. Osborn. You are recognized for 5 minutes.

STATEMENT OF DAVE OSBORN

Mr. OSBORN. Thank you, Chairman Blum, Ranking Member Schneider, and members of the Subcommittee. I appreciate the opportunity to testify today on improving broadband deployment in rural America.

I am the chief executive officer for the VTX1 Companies, a rural telecommunications provider based in Raymondville, Texas. Detailed information on my company and my personal work history have been submitted with my written testimony. Today I am representing our national association, WTA, Advocates for Rural Broadband, on whose board of directors I serve.

I intend to focus on three main areas where I think Congress can work with the regulators to facilitate broadband deployment in rural America.

First is universal service policy. Without the support we, and other rural telecom providers, receive from the Fund, our cooperative members would never be able to afford the services we provide. For many years, the FCC has tried to modernize the Universal Service Fund, first with the National Broadband Plan in 2010, which recommended freezing support at 2010 funding levels. These reform efforts culminated in a March 2016 order, which resulted in companies like ours seeing their support reduced because of a budget reflecting the 2010 funding levels. We believe this approach attacks the problem from the wrong angle. Instead of setting the goal for broadband in rural America and attempting to determine what it would cost, the FCC has set an outdated budget and essentially said, "See what you can do with this."

Our Federal USF from last year is down approximately a half a million dollars, with greater reductions anticipated in light of the caps and constraints the FCC has placed on the high-cost fund. These Federal support reductions have reduced our capital expansion within our Valley Telephone service areas and slowed the conversation to fiber optic. It is important to upgrade our networks to fiber because a fiber network will have a service life several times that of a copper one and the maintenance costs of a fiber network are much less than with copper. Additionally, serving the needs of cellular carriers with their forthcoming 5G LTE traffic will be very important. Instead of caps and cuts, the USF high cost program needs at least an inflationary adjustment so that high-quality broadband can be pushed further into rural America.

Second is streamlining our permitting processes for existing rights of way. Congress should review and reform the permitting process for access to Federal lands and other right-of-ways. We wait several months and spend many thousands of dollars on projects for environmental, archaeological, and historical preservation reviews. Many have little value.

For example, in 2010, VTX1 received a Broadband Technology Opportunity Program, BTOP, grant to construct a fiber-optic infrastructure for our universities. Our shovel-ready project had to wait 9 months to get environmental approvals needed to bore underneath the gravel right-of-way along two U.S. Federal highways.

Third, regulatory reporting burdens. We are concerned with the increased quantity of reporting obligations and burdens placed upon us involving regulatory reporting to the FCC, USAC, NECA, and other Federal agencies when the recovery of these costs has been capped. VTXI performed a detailed wage analysis in 2016 and found that we spend around 3,200 hours completing just the Federal reporting requirements placed upon us. This costs us about $100,000 a year in wages and another $50,000 a year in benefit costs alone, with none of these dollars being recovered by any Federal support. A copy of our spreadsheet and study with our wage analysis is attached to my written testimony.

Our conclusions are straightforward. First, the high-cost fund component of Federal USF needs to continue in remote-serving areas in the rural communities, as well as having a cost-of-living escalator to keep the fund viable during periods of inflation. An increase in high-cost fund money should be considered as well to speed up broadband deployment.

Second, permitting timelines should be greatly reduced in areas and the long roads where the land has been previously and continuously disturbed.

Third, regulatory reporting should be streamlined and limited to items that have a significant, measurable benefit to broadband deployment in America.

That concludes my testimony. I await your questions. Thank you.

Chairman BLUM. Thank you, Mr. Osborn.

Next, I would like to recognize Mr. Donovan, for 5 minutes.

STATEMENT OF TIM DONOVAN

Mr. DONOVAN. Thank you, Chairman Blum, Ranking Member Schneider, and members of the Subcommittee. Thank you for inviting me to testify about improving mobile broadband deployment in rural America.

This hearing is timely, Mr. Chairman, following the President's emphasis on rural broadband in your district yesterday. It is great to hear that you were able to join in person in 5G meetings at the White House today.

CCA represents nearly 100 wireless carriers and nearly 150 vendors and suppliers. The vast majority of CCA's members are small businesses whose employees are the same consumers that live and work in the communities they serve.

Mobile broadband use continues to increase exponentially. Ericsson recently forecasted a greater than five time increase in mobile data consumption over the next 5 years. Yet, a persistent digital divide continues to plague certain rural areas, leaving a subset of the Nation trailing behind their urban counterparts on the road to 5G, including small businesses and entrepreneurs.

As FCC Chairman Pai noted last week, we do not bemoan the digital divide because some people cannot play games like Candy Crush. Internet connectivity is vital to full participation in modern

life, and as he articulated at the inaugural Rural Prosperity Task Force meeting, these policies are important for demonstrating that the Federal Government cares about rural America.

Access to mobile broadband is not only a telecommunications issue; it is a jobs issue, an education issue, public health and safety issue, and an issue of America's competitiveness on the international stage. Simply put, the future of rural economic, and so, small business growth, and leading the world in 5G is directly tied to the availability of mobile broadband.

CCA's members are proud to serve rural and remote parts of the country with the latest mobile broadband technologies. That means preserving and expanding 4G LTE today and upgrading to 5G.

Policymakers can support rural broadband deployment through three key issues. First, the FCC plans to distribute nearly $5 billion for mobile deployment over the next decade through the Mobility Fund. But before the final eligible areas are set, we need better data. The current data is not standardized, nor useful, for determining where coverage gaps persist. Carriers know this, Congress has recognized this, and the FCC's website even acknowledges it.

It boils down to coverage, and you know better than anyone else where in your district you have coverage and where you do not, but bad data means that your district could be ineligible for support through the Mobility Fund. And as an accurate coverage picture is developed, policymakers should ensure that the Fund is sized to preserve and expand mobile broadband ubiquitously and ultimately meet Congress's mandate.

Second, carriers must navigate a regulatory maze to deploy broadband infrastructure, meaning the towers, base stations, antennas, and wires, that are the skeleton for mobile service. It is critical to support carriers' abilities to expand and densify their networks for uses like precision agriculture, an important technology for this Subcommittee; telework opportunities and economic growth for America's small employers. Yet the obstacles continue to multiply. In fact, each step on the chart you have before you highlights potential costs and delays for businesses.

The bottom line is this: if we want to expand broadband throughout rural America and connect small entrepreneurs to the global economy, siting processes must be streamlined at the local, State, and Federal Government levels. The same regulations for 400-foot towers should not apply to modern small cells.

This Committee should be a leader to ensure that policies enhance small businesses who have limited resources. To that end, the FCC deserves credit for establishing the Broadband Deployment Advisory Committee in which CCA participants. This stakeholder group should work alongside Congress to produce uniform policies that advance infrastructure deployment.

Finally, spectrum is the lifeblood of wireless networks, meaning that carriers must have access to low-, mid-, and high-frequency bands. In addition to deploying physical cells, carriers can enhance their network capacity by adding to their spectrum portfolios. The FCC recently completed the first-ever incentive auction where carriers bid nearly $20 billion for 600 megahertz band spectrum voluntarily relinquished by broadcasters. Around 30 of the winning bidders are CCA members. Now, the FCC must act expeditiously

to repack the band and make the spectrum available to the winning carriers so they can put their investment to use now and certainly before the 39-month transition deadline.

Carriers need greater access to spectrum at all frequencies to continue to innovate and invest in mobile solutions. While low-band spectrum is necessary to address network coverage gaps, especially in rural America, the capacity needed for 5G and next generation technologies, which will be the foundation for transformative services, requires the use of mid- and high-band spectrum resources as well. Small businesses in rural American can no longer afford to be on the fringe of the industry's shift to next generation networks, and policymakers are at the helm of this transition and can ensure that consumers in unserved and underserved areas are part of the 5G world.

Policies established by Congress and implemented by the FCC determine whether small businesses in rural America have access to the latest services or are left behind modern mobile economy. Competitive carriers want to be part of the solution.

Thank you again for holding today's hearing. And I welcome any questions.

Chairman BLUM. Thank you, Mr. Donovan.

I now recognize Mr. Allendorf for 5 minutes.

STATEMENT OF CHRIS ALLENDORF

Mr. ALLENDORF. Thank you, Mr. Chairman, Ranking Member Schneider, and members of the Committee, for the opportunity to address you regarding Jo-Carroll Energy's experience with rural broadband deployment.

Our company was founded as an electric cooperative in 1939 as a result of the Rural Electrification Act. Today, we are a natural gas, broadband, and electric cooperative serving thousands of rural accounts across northwest Illinois. We are part of a broader electric cooperative industry that serves more than 40 million members nationwide over lines that cover more than half of our Nation. Most of these members and lines are in rural America. Rural utility cooperatives are not-for-profit, private businesses that operate under democratic principles serving our members at cost.

The goal of the REA was to bring electricity to rural Americans to ensure they enjoyed the same quality of life as those in urban areas when others could not see a business case to do so. There is a similar situation happening right now with broadband in rural America. We serve fewer customers spread out over greater distances than more urban investor-owned utilities. Low customer density is important to keep in mind when considering large scale deployment of broadband in rural America.

In 2009, Jo-Carroll began providing internet access to our members from a fixed wireless broadband system that we were utilizing for our electric and gas operations. Our hope was to bring higher speed broadband to rural subscribers than what was available, if anything, by leveraging our existing infrastructure. Our topography is challenging. We cover the highest terrain in Illinois down to river basins and all of it through dense forests.

We have not been able to reach as many people as we had hoped or offer the speeds that they need. Later, we transferred our inter-

nal network to fiber due to the need for reliable, high speed broadband for our utility operations. Fiber provided low latency and consistent high speeds unaffected by our topography. Most importantly for us, it is scalable to meet our future utility demands.

We sought to provide the same benefits to our members. Cost prohibited us from rolling out fiber to our entire service area, so we identified Galena, Illinois, as an ideal site for a fiber pilot project. It is a rural town of 3,500 amid farmland near the Mississippi. It is the second-most visited tourist attraction in Illinois after Chicago. That has created a robust hospitality and retail sector. Galena faces the same challenges as other rural areas regarding access to broadband. Service was only provided by cable companies or telcos over aging copper lines. Speed and reliability were big issues.

Completed in 2016, our fiber project utilized existing overhead and underground utility infrastructure. Our take rate is over 60 percent among businesses in the project area. I have provided a few testimonials, but in summary, fiber has allowed businesses in the area to be more productive, more efficient, and increase sales; therefore, creating the potential to expand their business. It is now common to see merchants in Galena using mobile Bill Pay and other productivity applications which were not options before fiber broadband.

For rural residents, high-speed broadband is not just about pastimes like Netflix, but more importantly, it is about a chance at a better living. Small businesses and farms are able to engage in commerce beyond their local area, which is a necessity in our global economy. It means rural students have the same access to high-quality education as their urban peers. It is critical for rural hospitals and clinics to provide modern patient care, and with experience in economic development, I can say it is one of the first things that businesses look at when deciding to locate in our area.

Studies have shown that greater broadband connection in rural areas result in higher income and lower unemployment. Without reliable broadband, these businesses and farms are at a competitive disadvantage. It has become as much of a necessity as the gas and electric services that we provide.

The President's stated goal of a large infrastructure program is laudable, but we need broadband as much, if not more, than roads and bridges in rural America. Rural broadband access needs a place of special importance in these discussions.

Chairman Pai comes from a small Kansas town, and he has stated that government needs to rewrite regulations to cut red tape. He has created the Broadband Deployment Committee presumably to do just that. As you consider proposals to spur broadband deployment, we believe that all potential providers, including electric cooperatives, should be eligible to participate in open and inclusive processes to compete for funding opportunities. We urge policymakers to consider the scope of capital needed to bring broadband to rural America. Along with our density challenges, access to capital is a major issues for a small company like us. We need more grant funding to make large-scale deployment viable in rural areas.

Bringing electricity to rural America was a task of epic proportion and our success in doing so has been called one of America's

greatest achievements over the last 80 years. The government created a strong, lasting partnership with rural cooperatives to accomplish that goal, which resulted in the same high quality of life for all Americans, regardless of economics and location. Jo-Carroll has seen that broadband access is essential for the continued success and well-being of rural America. It is our hope that Congress and this administration will build upon that partnership with support for the no less audacious goal of providing rural Americans with access to broadband service.

Thank you for your time.

Chairman BLUM. Thank you, Mr. Allendorf.

I am going to recognize myself for 5 minutes of questions and answers.

The first question I have is, anyone on the panel can jump in, but as a technological, somewhat neophyte, I am continually amazed at the capacity of the system or the pipeline—I do not know if I am using the right terms. I live in a rural area and we have Netflix, we have Hulu, we have some of these other downloadable, on-demand services coming via the pipeline out there. My question is, reaching the capacity of what it can handle, is that an issue that we are bumping up against continually? And the second part of the question is, is it an even bigger issue in rural areas, this capacity, as more people want to download TV services like Netflix and Hulu? Whoever wants to jump in. And please keep it in terms I can understand.

Mr. ROMANO. Thank you, Mr. Chairman. I will take a first crack at that.

Chairman BLUM. Is your microphone on?

Mr. ROMANO. It should be. It is.

Chairman BLUM. All right.

Mr. ROMANO. There we go. So thank you. So the challenge we face is there is this tension between getting service to areas that are unserved and making sure that services are sufficient and robust enough to meet the challenges of broadband over the long haul. And that is a tension. It is a tough choice. It is not an easy one for policymakers or industry to work through. However, I think what you raise is a good point. As we are looking at this as an infrastructure challenge, one of the things we have to think about is building—these are assets that are intended to last for decades. And so if I were building a road and I had anticipated a level of traffic that was going to be coming across that road over the life of that asset, I would not build it as a two-lane road and then a few years come back and make it a four-lane road, then an eight-lane road. I would have to go through all the permitting that CCA's chart I think demonstrates well, all over again. You would have to go through all these different challenges. So building a network upfront for anticipated demand over the life of that asset, we would submit, represents the most efficient use of resources to handle the kinds of capacity demands that you are expecting both now and into the future. Designing a network for 10-1, for example, when you know that just a few years ago it was 4-1 was the speed that was used and today is 25-3 going to 100 megabits or a gigabit worth of speed and capacity over the use of that network, that sort of challenge is something that you have to engineer a network for

up front to handle not only video and Netflix and things like that, but distance learning, telemedicine, all these applications that depend upon a robust network to make sure that you are going to attract healthcare, education, high commerce businesses to these communities.

Chairman BLUM. In your analogy, it probably makes it tougher because that eight-lane highway you mentioned has not been invented yet. So you have to design a system, if you are trying to design it for 15 years from now and things have not even been invented that are going to be here 10 years from now, 7 years from now, 12 years from now, correct? I mean, it is a heck of a challenge.

Mr. ROMANO. It is. It is. One of the benefits, I think, of some of the systems we are moving towards with both fiber and 5G, which I see as actually very integrated pieces of the puzzle because 5G is driven in large part, the capacity of the promise of 5G is driven by a densified fiber network. If you have fiber and you are moving towards 5G, you are starting to build for the ability to adjust, upgrade the network, scale it over time to respond to the kinds of demands. So you may not have invented that electronics yet that will deliver the speeds that we might see in the future, but you have at least laid the groundwork, the foundation to scale it for the things that might come to be in the best position to answer those calls.

Mr. ALLENDORF. Yes, Mr. Chairman. We need fiber as a building block to all of these technologies that are being talked about today, like 5G. Rural areas simply do not have the infrastructure to utilize these technologies, like 5G. And as we have seen firsthand, we need a robust fiber infrastructure to, as Mr. Romano made the analogy, plan for the future and be able to handle the demands that will come from that. We have seen that firsthand.

Chairman BLUM. The future is fiber? Is it ever going to get to the point where we do not need something buried under the ground? Where we do not even need the fiber? Or is that, well——

Mr. ALLENDORF. It is hard to imagine that, but——

Chairman BLUM. It is.

Mr. ALLENDORF. The future is, in part, built on fiber. I will say that.

Mr. DONOVAN. The consumer is not going to plug into something is where the future is going. The delivery vehicle is going to be wireless. And to add capacity to wireless network it is twofold. It is building more towers, and that is where all of the challenges and red tape in deploying the infrastructure are a big issue, but it is also adding spectrum to your network.

And for your question on rural areas specifically, that is why this incentive auction spectrum is so important. It covers a very long distance. Think wherever you could pick up a broadcast TV signal, that is the same bandwidth that has been repurposed for wireless use. That is going to be 5G in rural areas. We need to make sure that carriers that bid and won that spectrum can put it to use to serve your constituents.

Chairman BLUM. How much was raised in that auction?

Mr. DONOVAN. Nearly $20 billion. So about $10 billion of that goes to the Treasury for deficit reduction. About $12 billion went

to the broadcasters to compensate them for moving off the spectrum.

Chairman BLUM. You just answered my next question. Thank you very much.

My time is up. And, oh, go ahead, Mr. Osborn.

Mr. OSBORN. I was just going to make a point. You mentioned what do you do when you run out of bandwidth? At any given time of day, we run between 40 and 50 percent of our traffic is either Netflix or Amazon Prime. The internet is not about email anymore; it is about video. And video takes massive amounts of bandwidth, particularly when everyone does it at the same time. We buy more. We have between three and five upstream tier one internet providers that we connect to so that we are never down, but we are selling 10 times what we did 5 years ago.

When I took this job in 2005, a meg and a half of internet was a big deal. That was big stuff. We offer gigabit service in our fiber exchanges. That is a thousandfold and they are talking petabyte for fiber in 2020, and I thought, wait a minute, something is missing. Terabyte. What happened to terabyte? They are skipping that. So this 25-3, my god, we can do that with a tin can and a string.

It is fiber. Fiber. The capacities of fiber are unknown. You ask any engineer and they will tell you they do not know what the capacities are; they are that vast. Wireless is applied physics, and when you take that down and say no matter how fast the wireless go, theoretically, the fiber will always go faster. So we see it as both. We offer fixed wireless service, and we can give up to 50 megabits on wireless with a dish on top of your roof. But we see it as the future of both.

We need the wireless to reach customers that it is not economical to build to, and they need us to transport these huge amounts of data because 5G LTE is going to have, depending on how far you are from the tower, up to a gigabyte worth of service. That is huge. Absolutely huge.

Chairman BLUM. Tin can and a string. Now it is something I can understand. Thank you for bringing it down to my level and probably a few folks out there as well. Thank you so much.

I would now like to recognize our ranking member, Mr. Schneider, from Illinois. You have 5 minutes.

Mr. SCHNEIDER. Thank you. And again, thank you to the witnesses for our insightful testimony.

Mr. Romano, you used the term that I want to focus on a little bit which is future proof, because the rate of technology is changing, and Mr. Osborn, you just touched on something. There is a leapfrog effect. Well, it is not really a leapfrog. Going from mega to giga to peta, skipping tera. Just the pace is so fast. Fiber is a connection, but we need to have the ability to keep it up to date across the rural communities.

We're talking 5G. What is the life expectancy of each generation? Because we've already gone through 1, 2, 3, and 4G?

Mr. ROMANO. Yeah. This is the thing, especially, both on the wireline and the wireless side, I think we are seeing massive amounts of disruption and the technology, the electronics change, the uses of the spectrum change in a way that could not be predicted years ago. I mean, think about it. You know, 15 years ago,

actually, I worked at America On Line. AOL used to get those disks, right? I mean, things moved by DVD and CD at that point. Now we are moving at a pace that is unimaginable.

But I think to your question, we cannot anticipate exactly what will come, but I know that 5G—we have not even seen what 5G is yet. The standards for it are still being developed. People are talking about deploying 5G. They are kind of guessing and marketing what 5G is, but we actually do not know what those standards are. The best thing we can do is get networks into place that are scalable. If we have a limited, finite pool of resources, what is the best use we can make of those resources? We could try to spread them thinly and hope that the networks we build will keep up, or we could try to think through how do we make the best use of these so that over time those networks where they are built, they are not just there for the one time act of getting broadband there; it is keeping it there and keeping it useful and enabling 5G, enabling terabyte service, and greater over time.

Mr. SCHNEIDER. Real briefly, just because we're so tight on time, Mr. Donovan, you used a word that caught my attention which is densify. As we move to these next generations, does it mean that we are going to have to increasingly densify the modular parts of the networks, the towers, everything else?

Mr. DONOVAN. Yes. So thank you for the question. Densification means bringing the transmitters for the wireless network closer to where the users are. So it is a lot fewer of the 400-, 500-foot towers and more and more cell sites that are, you know, about this big that you could put up on the side of a building, on existing light poles, and using existing infrastructure. That is what is going to be a big part of 5G, to fill up on kind of the generational shifts in wireless technology. You know, 5G is not a replacement for 4G services, and that is why it is so important that we have a base layer of 4G rolled out today while industry is still working on the standards for 5G. In rural areas, there are still 2G networks that are operational because people are still using those. So it is not that one technology replaces the other; it is that we keep evolving and adding on top. And it is important for rural America to keep up with their Gs if we want to keep giving them the latest services.

Mr. SCHNEIDER. And let me just add to that as we broadly think about rural America. It is the breadbasket of our country. It provides a vast quantity of our food. It is where we are developing new technologies. It's not that these are backwaters. It defines who we are as a country.

And Mr. Allendorf, I want to turn to you because you grew up where you work. You've seen the impact of broadband. Can you tell us a little bit about some of the effects you've seen and the opportunities created by bringing broadband to a community like where you live?

Mr. ALLENDORF. I did not have experience with broadband until I went to college in the early 2000s. Before that we had dial-up. And so getting to college and seeing what broadband can do for the first time was pretty eye-opening.

What we have seen is, anecdotally, businesses are able to do more with the resources they have at hand. They are able to utilize

productivity software, like I mentioned. It has really enabled them to truly compete in a global economy. You know, they do not have to drive to the nearest really good site for a broadband connection to transact business or something like that. And it has just increased their productivity overall. And so the effects that we have seen, especially in our fiber pilot project area are immense compared to what was there before. And I would say that they did not know what they had until they had it because it was not an option before. And now that they do they are finding new and creative ways to be more productive.

Mr. SCHNEIDER. As my time winds down, not having broadband until college, I will tell you I got to college with card decks. So you can overcome these challenges in life. But that is the rate of our technology.

I will also share that I, early in my career, worked on developing software, initially for the oil and gas industry. We migrated it to agriculture into these rural communities. This was back in the 1980s. We saw the revolutionary impact it was having then. Today, with broadband, as you well know, these communities, to be able to bring technology for agriculture, for medicine, for education, distance learning, the future is unlimited. But it cannot be unlimited unless we provide the resources to these communities.

So thank you very much. And with that I yield back.

Chairman BLUM. Thank you.

Now I would like to recognize the gentleman from Kentucky, Mr. Comer, for 5 minutes.

Mr. COMER. Thank you, Mr. Chairman.

I represent a very rural district in Kentucky. It is a very poor district. We have a very high Medicaid population. I want to see people get off Medicaid and get into the workforce. To do that in my rural district, we are going to have to create an environment where we can attract better paying jobs that provide benefits. One of the biggest issues for me as a freshman member of Congress is to try to help improve broadband in my rural district, so I am very interested in this subject.

Mr. Allendorf, since your primary focus has been delivering electricity, can you talk a little bit about the regulatory obstacles that other folks on the panel may not have when building out their broadband capacity? Because we are going to have to do that I would assume through the electric cooperatives and the rural electric cooperatives in our district.

Mr. ALLENDORF. First let me say that with our fiber project, we were able to utilize existing infrastructure much more than we were with fixed wireless solutions. So it requires less permitting, which is always a concern, both locally and from the State. So being able to use our overhead and underground infrastructure is a huge benefit.

Regulatory challenges we face, pole attachments, something that always comes up, that is an issue. There is a Federal case out of Missouri that dealt with pole attachments for fiber use by a cooperative. I believe that is currently on appeal. We are anxiously waiting to see what the result of that is to see what barriers there may be going forward to deploying broadband over our existing infrastructure.

Mr. COMER. Okay. Mr. Donovan, what kinds of reforms could help alter the outlook for a company interested in deploying broadband?

Mr. DONOVAN. Thank you for the question.

You know, in Kentucky, carriers like Bluegrass Wireless and Appalachian Wireless——

Mr. COMER. My cellular carrier.

Mr. DONOVAN. That is a great company out of Elizabethtown there. We are proud to have them as a member.

One challenge that wireless carriers are facing now is the FCC's mobility fund has a lot of opportunity in making resources available to make that last piece, the economic case, to serve these rural areas. The biggest problem we have right now is the data. The map that they show on their website overstates coverage. And you have to take my word for it. It says at the bottom, "These coverage calculations have certain limitations that result in overstatement of the extent of mobile coverage." Looking at it quickly, it looks like all of Iowa, most of Illinois, most of Kentucky, on down the line, are fully served. I think you know that is probably not the case or else we would not be here today talking about how we can get service out there.

Before we decide how $5 billion is going to be spent over the next decade and lock those areas out, we need to make sure that we are acting on sound data so that the unserved parts of your district are eligible to bid in that auction and gain support.

Mr. COMER. If Congress moves on an infrastructure bill with money for broadband, should that money go through the high-cost fund or through other programs or agencies such as RUS or NTI?

Mr. DONOVAN. So we have structures that are put in place through the FCC, like the Mobility Fund. I think there is unanimous agreement of the panel that USF is not fully funded today, so this could be a great opportunity to plus that up. The thing to also consider is making sure that however the funds go out, that carriers that are receiving those can have some long-term certainty that those are going to be available, that you are not subjected to some of the fits and starts of the appropriations process moving forward.

Mr. COMER. Okay. Very good.

Mr. Romano, one last question here for you. Would it be better to get everybody connected even if it is at lower speeds? Or should we focus on the future and invest more in developed technology? What is the right balance on that?

Mr. ROMANO. Thank you, Mr. Comer. That is the challenge that we face, as I mentioned earlier, the tension that we face between trying to get as many of the unserved covered as possible. However, if you are building a dirt road to everybody when you think you are going to have a lot of traffic there, you are potentially wasting resources. So we think it is best to try to strike a balance where you look to get the most future proof networks you can. Aim for the highest networks you can to as many people as possible. It may take a little bit of time, but the more we build for the future, the more we are going to attract the kinds of jobs and businesses that you were talking about. Somebody is not going to relocate a plant to a district connected to DSL.

Mr. COMER. Thank you. Mr. Chairman, I yield back.

Chairman BLUM. Thank you, Mr. Comer.

I would now like to recognize for 5 minutes the gentleman from Missouri, Mr. Luetkemeyer, who is also the Vice Chairman of our full Small Business Committee. You are recognized for 5 minutes.

Mr. LUETKEMEYER. Thank you, Mr. Chairman. And thank you to the guests who are here today.

Like the other members of the Committee, I come from a very, very rural part of my State. In fact, I always tell people I live so far out that I am in the middle of nowhere, but when you get there you are finally somewhere. So when I have discussions with telecom companies, I always tell them, you know what? I live so far back, if you can get me broadband and that sort of stuff, then you come talk to me. Until then, I have got a lot of constituents who have got problems. If you cannot serve me and them, we do not need to talk. So this is a very, very important hearing, and I appreciate the chairman's indulgence here.

Also, in my county, our county seat sits right square in the middle of our county, and until about a year ago it did not even have cell phone service. Can you imagine that? We did not even have cell phone service in our county seat. So the sheriff, obviously, he had no ability to contact his deputies on a regular cell phone and had to find other ways to communicate with them with his other phones, which is fine, but, I mean, it just shows the difficulty that some of us in the rural parts of the country live through.

So I guess my question would be to each of you, what can we do as a Committee to help promote or do whatever we need to do to help all of you provide the broadband and the telecommunications services that our people, our businesses, our health providers in our part of the world need to be able to do their job and protect our citizens? And I guess the first question is how do you speed up the regulations? And I know more money is always added. But when you do that, I want to know how do you estimate the return on your investment? Because I can tell you, you know, I grew up a long, long time ago. I remember the old TV show, "Get Smart." And the guy had a phone in his shoe and today I have got two phones sitting right here that when I grew up that was a fantasy. How can you have a phone without a line to connect it to the rest of the world? And yet today it is a convenience we cannot live without.

So I understand the difficulty that you have in predicting the future, which you talked about, and how you make that investment, how you figure out that return investment. If you could kind of go into some of that, I would appreciate it.

And then I would like to go to Mr. Donovan, I believe, with regards to the data. So let me stop and let you answer some questions.

Mr. DONOVAN. Thank you. It sounds like the county seat would be a perfect place for some small cells to go up on some of the existing poles build out service in there. The problem in these rural areas, as this Committee knows, is the margins are already very tight for small carriers to serve them. And the opportunity costs of fees that you pay to site them, especially on small cells, if it is the same fees you are paying to build a massive tower, it could be

enough to make it so it is no longer economical to provide that service. So anything we can do to streamline the process to get some of those fees in line is going to help us be able to expand service in areas like that.

Mr. LUETKEMEYER. Okay. How do you figure your return on your investment? How do you work the numbers on that? Do you figure 5 years, 10 years, 15, 20, 25? What kind of timeframe do you look at when you figure out the return on your investment?

Mr. DONOVAN. So it does vary carrier to carrier. One thing that is exciting in the wireless world is that the future customers may not be, yourself sitting here with two phones, two lines of service, but it could be your tractor in the field, each head of cattle that is out there that is being remotely monitored, you know, there is a new internet of things, customers that are changing the equation that you do for your cost-benefit analysis, but that is only going to happen if we have the networks in place to support that. Otherwise, the investment is going to flow elsewhere. If you do not streamline how we can invest in those areas, then those areas are going to miss and it is going to go to places that it is easier to make those deployments.

Mr. LUETKEMEYER. Does anybody else want to comment? Mr. Romano?

Mr. ROMANO. Yes. I will jump in. Thank you. Thank you, Congressman.

So I think the challenge, or one of the things I think the panel has in common actually, is we all represent or all are associated with community-based providers. So one of the things that is interesting when you look at ROIs, if you live in that community, if you are based in that community, you have a different view perhaps of ROI than if you are investing from far away because if you are investing from far away or you have allegiance or you have fiduciary duties to faraway shareholders, that creates a very different circumstance than when, you know, you have got to get your money out because you have got capital in. In this case, some of these loans these folks are taking out are 20-year loans, so, therefore, the ROI is very different. They are also, again, headquartered in the community. They might be cooperatives that actually their members are their owners.

Mr. LUETKEMEYER. Okay. One more quick question before I lose my time here.

Mr. Donovan, you talked about the study to make sure that you have the data there to be able to make sure you disburse funds where it is needed. Number one, who does the study? And number two, who pays for it?

Mr. DONOVAN. Thank you. So the data, it is required by the FCC to be submitted by carriers. So far, so good. The problem is the FCC does not tell carriers how to standardize that data. So you could have one carrier that is reporting at a signal strength that varies dramatically from another carrier. The calculation that they do, we will not go into——

Mr. LUETKEMEYER. So you need some better direction from the FCC then on the reporting of this data, is that what you need?

Mr. DONOVAN. We need to make it standardized.

Mr. LUETKEMEYER. Standardized. Okay. Very good.

Thank you, Mr. Chairman. I appreciate it. I yield back.

Chairman BLUM. Thank you, Mr. Luetkemeyer.

I now recognize the gentleman from the great State of Iowa for 5 minutes, Mr. King.

Mr. KING. Thank you, Mr. Chairman. I appreciate you holding this hearing and taking the lead on this issue. I was just listening to the remarks of my friend, the neighbor to the south, Mr. Luetkemeyer, whose district I have visited and he lives in the middle of nowhere and I live in the center of the hub of the wheel in the middle of nowhere. I have cell phone coverage; he does not. And so I am sitting here listening thinking why is that the case for me and not for Mr. Luetkemeyer and many of his constituents?

One is hills. The degree of difficulty is a lot greater if you have got hoops and valleys rather than the flatter countryside that predominates a lot of the great State of Iowa. That is part of it.

But another part of it, I think, and I wanted to ask the question, whoever wants to volunteer to answer it, is that in Iowa we had, the last time I kept track, about 142 independent telcos. And I know that they are more personally connected with their customers than the more remote larger companies. And the map says that Iowa is in pretty good shape. There are exceptions there. Mr. Donovan, you pointed that out. But how much impact has it had to have a large number of competitive independent telcos that are neighborhood telephone companies using everything they can to make that pipe as big as possible for the long-term future of their neighbors and relatives?

Mr. DONOVAN. It is critically important, Congressman. And like my colleague, Mr. Romano, mentioned, being in the community makes a difference as you make decisions about where you are going to invest and where you are going to serve. When you have to see your consumers, not just in the office when they come to your store, but in the grocery store and around the community. So that changes how you make your investment decisions.

One success story in Iowa is that rural carriers like iWireless have been able to band together some of those smaller, independent operators so that you can have some scale, so that you can gain access to buy devices. If you do not get to some of those scale levels, like across many issues for small businesses, if you cannot deliver enough scale, then you cannot get access to economically priced resources that you need. For wireless service, that is the devices. It is the network infrastructure. It is the things you have to build to provide that service.

Mr. KING. And so at least in my theory, if other States were beneficiaries of a lot more competitive, a lot of times family-owned telcos, we might have seen a better buildout here on broadband.

So the resources have been there for everybody equally? Was that true?

Mr. DONOVAN. Not always the case, unfortunately. In the wireless world, so spectrum is our primary resource. You are not making any more of them. You need to get it from license from the government. Different spectrum bands are made available differently. One thing that is important for small businesses, if the license size is not sufficiently small for a small business to be able to bid on it, win it, and provide service, then they are not going to be able

to get access to that critical resource and they will not be able to provide service.

Mr. KING. And the license size applies. And then also the ability to have the infrastructure built that can handle the capacity into the future. A narrative popped into my head when I heard that. As I recall, I had a construction office in town for a number of years and it was fed by a 3/4-inch water line underneath the highway, a very wide highway with a long boring project to replace it. I went to the city and said I cannot provide water out of my place to the blacksmith who is next door to me and he is trapped if I do not get it to him. We need to expand this water line. I made a powerful case they should do that.

I finally sold them on the idea and they let me go up to 1-inch from 3/4. So I finally, out of frustration, said I will put the water line in, and I bought the 2-inch line and now everybody is living happily ever after on that one. That is how I equate with what you are talking about. Let's, well, overbuild this because the actual cost of the equipment is minimal in comparison to the cost of the labor to do the installation process.

I wanted to turn to Mr. Romano and give you an opportunity to say whatever you need to say, but I also have a question. I have some neighbors, and myself included, that use cell phone boosters in our homes. Is there a future for that or are they minimal in their ability to have impact?

Mr. ROMANO. No, I think they will have impact. Wireless and wired services are I think, in many respects, complementary both at the network level and the access level. You know, a lot of times you see people talk about how much mobile data consumption there is. People are using tablets more to connect to devices. A lot of times those mobile tablet devices are actually, in fact, hopping onto a wired network, a Wi-Fi network. These are complementary integrated networks that are going to need each other, I think, to thrive and survive and serve the needs of a community like you are talking about.

I did want to come back to the one point you made about local community interest, ownership, family-owned businesses, cooperatives working together. We have actually started an initiative with a number of folks trying to get telcos and electric co-ops who have a shared interest in serving these communities together. Bring broadband expertise together with the assets, the community interest of the electric cooperatives and municipalities, and tribal entities even. Think about different ways of tackling these so we can make the most efficient, most effective use of resources on the ground level.

Mr. KING. To anybody that wants to answer this, is it our future that everybody in America eventually will have access, not only in the undefined broadband is for me, I did not hear that, but is there a future that we will be able to do livestream HD anywhere, anytime, for anybody with a cell phone or sitting in their home with their television? Is that where we are going to end up with an unlimited capacity beyond our imagination? Today, I should say, not unlimited, to go beyond that if need be?

Mr. ROMANO. It could be, but what you are going to need is the small cell deployment that is robust enough, fed by fiber networks

that are robust enough, and spectrum assets that are robust enough to hit those small cells. Again, while I say it is all integrated, but it could be there. But you are going to need those small cells every few hundred feet, which is a big challenge in rural America, with robust enough spectrum or fiber capacity behind them to feed the kind of demands that you are talking about. But that is the dream at least.

Mr. KING. We can get there. And they would have loved to have this on Apollo 13.

Mr. Chairman, I appreciate the hearing, and I yield back the balance of my time.

Chairman BLUM. Thank you, Mr. King.

I would like to start the second round of questioning, if I could.

Somebody mentioned having, I guess, transmitters on phone poles, telephone poles. It kind of reminds me of the concept of the democratization of electrical grid, that if each home in America, or particularly in rural America, could generate our own electricity, we could sell some of that electricity back to the power companies. In essence, we would be democratizing the electrical grid. This concept fascinates me. Could this possibly be an answer in rural America for wireless is to have every farm, every home, my home for example could not only receive, but could also maybe send, transmit to the next home—not back to the tower, but to the next home—and we would have this interrelated network? Because I have heard of this very thing for aircraft. And if every aircraft that is in the air, we know their position, and if they can communicate with each other, then we have this grid. And so there would be no dark spots or black spots over the ocean, for example, that currently we cannot capture with radar. It fascinates me the concept. Could you comment on that?

Mr. DONOVAN. Absolutely, Mr. Chairman. And you are right, that we are going to need the cell sites brought that close to you so you can have that kind of mesh network that does not have any gaps. The problem right now——

Chairman BLUM. Mesh network? Is that what that is called, mesh network?

Mr. DONOVAN. That is. It is mesh networking. But right now you probably are not going to go through the process to work with a carrier to put up a cell site on the side of your house if it means that you are going to have to do a new environmental review to see whether you disturbed anything when you built that house, to go through a new historical review. We need to cut through some of that.

Chairman BLUM. Remove the word "probably."

Mr. DONOVAN. Well, exactly. And that means that you will not have that cell site available. So we need——

Chairman BLUM. Well, today, in today's environment. That is what it would entail?

Mr. DONOVAN. That is right. You would have to go through every step of this in order to put that cell site up on the side of your building.

Chairman BLUM. But a fascinating concept nonetheless?

Mr. DONOVAN. Absolutely. And the densification that we need to provide that service going forward.

Chairman BLUM. And my second and last question is for Mr. Osborn. And Mr. Donovan just mentioned the regulations. Regulatory burden is a big topic in Washington, D.C.

I would like to ask you, Mr. Osborn, with the change in leadership at the FCC with Chairman Pai coming in, have you seen any indications that the FCC is serious about reducing the regulatory burden in this industry, particularly as it relates to rural areas?

Mr. OSBORN. Yes, we have. The first few months have been very encouraging. What Chairman Pai seems to be very sensitive to is the red tape and the regulations. And I mentioned the permitting process that we were involved with, and understand there is a Bill S604 that would essentially give a categorical exclusion to environmentals along operational rights of way. That type of legislation would help quite a bit in removing some of the regulatory issues that I call environmental regulatory. But that would speed things up greatly, reduce cost, and I think make things more efficient in laying fiber.

Once you lay fiber, it is there forever. We lay our fiber in double plow ducts, undisturbed. We go down as far as we can, 6 feet, 8 feet if we can, and we run it. Once it is there, we can replace it without having to dig. So that investment, we can look at that as a 20-year rate of return. We have to replace the electronics every 3 to 5 years. So that is the one where we have got to get our money out of that quickly. The wireless, the same thing.

So the rate of returns that we are trying to work toward varies largely by the technology. But the regulatory issues more faces with the terrestrial piece of it. I mentioned the reports that we have to do. If we saw value in this, I think it would be different.

Mapping is a big part of our business. We have maps of everything in our serving area. It is about 10,000 square miles of serving areas. And to deal with the FCC's requirements to go down to the census block, I can show you those census blocks in my map. I should not have to do a separate report and essentially duplicate what I have paid hundreds of thousands of dollars for in a software system to come up with a report. I have the information; all they have to do is ask for it. And that would help greatly in terms of moving things along.

Chairman BLUM. Thank you very much.

I would now like to recognize the gentleman from the great State of Nebraska, Mr. Bacon, for 5 minutes.

Mr. BACON. Thank you. I apologize for coming in just a little bit late, but two other simultaneous meetings. So I am running around.

I used to be raised on a farm until 1985, joined the Air Force, but my main problem of getting some kind of linkage prior to 1985 was finding that AM radio so I could listen to the Chicago Cubs play at 120. In the military, too, we are starting to do every aircraft, you know, receiving and sending various links. And what has impressed me is now I am out of the Air Force and I am starting with the ag community again, and talking to my family, it is just so impressive that all the new combines, all the new tractors all have these links. Our irritation systems are doing the same. Just phenomenal.

And you may have already mentioned this, and I may have missed it, so I apologize if you did, what is the actual scope of investment that we need nationwide to field this the way we want to? And I will just open it up to whoever can respond.

Mr. OSBORN. Thank you, Congressman. It is an evolving level. We need to make sure we are keeping up with everything, but you hit on an important point. There has been a lot of talk in D.C. recently about connected cars. Well, on farms we have had those for a while. They are combines and they are tractors, but they are using those connections. So Cost Quest has done one model of what it would take to have wireless coverage across the country to power all those things and they came in at about $25 billion.

Mr. BACON. Twenty-five billion?

Mr. OSBORN. With a B. With about another billion in operational costs once you have it built just to keep it going in areas that private capital will not sustain.

Mr. BACON. And that gives us the capability for all of our newest equipment to be able to communicate with maintenance facilities? And so, I mean, all that networking that is going on. So you would get that capability. What other capability would that provide our agriculture?

Mr. OSBORN. So the combines, the tractors are connected. You know their maintenance schedules. They tell you before they break down that you need to get someone out there. You can more efficiently use resources. You know, what fields need water? What needs what going on? But you also have real-time connections to markets and you know when it is time to harvest certain amounts of the yields. So your productivity goes up overall as well as profitability of the farm.

Mr. BACON. Right. I think that is incredible.

Are there certain portions for our country right now that need this more than others? Are there areas that are more advanced? Is there some portions of the country that were falling behind?

Mr. OSBORN. You know, I think for different use cases, we need this nationwide. You probably are not going to be using a tractor on a mountain, but you still are going to want to be connected so you can take part in other educational and business opportunities.

Mr. BACON. Okay. Thank you very much. I appreciate the time. And I can just second the importance of it because my family that is still involved in the farming, when you go out there and they are using a GPS. I had the most curveous rows when I was a 16-year-old out there. Now you do not have to drive it at all. It is perfectly straight.

Well, thank you so much. I yield back.

Chairman BLUM. Thank you, Mr. Bacon.

I now recognize our ranking member, Mr. Schneider, from Illinois, for 5 minutes.

Mr. SCHNEIDER. Thank you. And I will not be long and take the full time. I just want to wrap up on a couple of things.

You do use tractors on a mountain. I grew up in Colorado. Ski areas are, seriously, using those for maintaining their slopes during the winter. So this is something that affects us all across the country.

And Mr. Donovan, I will go back to something else you said. You talked about the idea, the Internet of things they did. Every head of cattle will have a device that is sending back information about that individual cattle, which means their food will be healthier, our cost to produce that food will be lower, and the impact it has, again, across the whole Nation.

So I really just want to give each of you a last chance for a reflective comment, perhaps. As we talk about providing rural communities with broadband access, which was the subject of this meeting, this is something that I believe really is of national interest. It don't affect just our rural communities; it affects all of us regardless of where we live. And so start with you, Mr. Romano, just a last word of why this is important to our Nation and why it deserves a national investment.

Mr. ROMANO. Thank you, Congressman.

The Hudson Institute did a study a couple of years ago showing that the payback from investment in rural broadband, just from the active investment in rural broadband, not the follow-on effects of rural broadband, were $24.1 billion in 2015 to the national economy with much of that accruing back to urban areas actually because of the vendors and contractors that are hired to build this stuff and the tower manufacturers and what have you. So there is that direct impact.

There is the indirect impact, of course, of the mission of universal service first sort of thought of last century and embodied in different forms throughout, but the network effect in our country is stronger and better and more efficient and effective if every American is connected. And that is one of the things that I think is important in the concept of universal service. We have a lot of folks who focus on let us connect this type of institution, this type of customer, this type of user. We need community-wide access to all of them. To focus on any one type of user and silo it in that way I think undercuts the notion of universal service. We should be asking the folks who are out there building to build to every user, irrespective of what kind of user they are, so that everybody gets the benefit of that network effect, which is why we are building these networks in the first place.

Mr. OSBORN. Thank you. Just a quick word on the Hudson Institute study. It did not come as a great surprise to us because we have communities where it is an hour, hour and a half to the nearest Walmart, hour and a half to the nearest Best Buy, you name it. So boy, you can get on there to go to Amazon. Two days, right? And buy and purchase. So rather than run into town, people, that is how they do their commerce is get on that internet and make purchases. And that adds up.

Mr. SCHNEIDER. I am going to date myself. I used to work at Sears Catalogue.

Mr. OSBORN. Oh, my. You get it. You totally get it. You totally get it.

The other topic, though, you know, we are part of a world economy and somebody mentioned we are number 16. I think that is pitiful.

Mr. SCHNEIDER. That was me.

Mr. OSBORN. Of course, number 1 through 15, the telecommunications infrastructure is probably owned by the government. That is the common model. The U.S. is the exception to that with the formation of AT&T 100 years ago. If we are going to be competitive with India, with China, with the rest of the world, we are going to have to kick it up a notch and we are going to have to bite the bullet and put some money in it, not just in rural. But you are going to have to put the money everywhere and get us competitive. And it needs to flow out to the rural areas because they are doing some important stuff. That is where food, water, and oil come from that we need.

Mr. SCHNEIDER. Fair point.

Mr. Donovan?

Mr. DONOVAN. Well, I have to associate myself with my colleague's comments on the economic impact. It is incredible to see what a multiplier it is bringing broadband services out to these areas.

I guess Congress got it right, you know, directing the FCC that we will have policies for reasonable comparable——

Mr. SCHNEIDER. Will you just repeat that again?

Mr. DONOVAN. On Universal Service Fund, in 1996, Congress got it right directing the FCC to have reasonably comparable services and an evolving standard in urban and rural areas. We need to make sure we are putting policies in place to make sure that that is the case on the ground.

Mr. SCHNEIDER. And the last word to you, Mr. Allendorf?

Mr. ALLENDORF. Thank you, Congressman.

Building on Mr. Donovan's comments, Congress got it right with rural electrification as well. And it is going to take that kind of commitment from Congress, from the administration, to bring broadband to rural areas. And it is going to take partnerships with many different industries to do that. And I would encourage that kind of broad thinking as you have done today in achieving rural broadband deployment. Thank you.

Mr. SCHNEIDER. Great. Thank you. I'm going to steal a few extra seconds if that's okay just to reflect on your comments, because I think as we are here talking about what broadband can do and the comments you made, three things jump out at me. If we get this right again, we can grow our economy. At a time of great division in our country, broadband can unite us. And it is necessary, Mr. Osborn, what you said. If we are going to as a Nation lead the world, lead the world economically in a global economy, lead the world with information, lead the world with our values, this is a step towards that. So I just want to thank the witnesses again and thank the chairman for having this hearing. Thanks very much.

Chairman BLUM. Thank you, Mr. Schneider. I noticed today you mentioned you used to carry around punch cards and worked for Sears Catalogue. So I must say I think you are younger looking than obviously you are. But thanks for sharing that with us. It makes me feel better.

I would now like to recognize Mr. Luetkemeyer for 5 minutes from Missouri.

Mr. LUETKEMEYER. I am fine.

Chairman BLUM. Fine? Are there any further questions anyone has?

If not, then I would like to thank each of our panelists for taking the time today to testify. It is truly fascinating.

As this hearing comes to a close, I hope that we have opened some eyes—certainly have opened mine—and educated a few folks about how important advanced telecommunication services are to our Nation's rural small businesses and how important it is to create a positive regulatory environment for the businesses represented on our panel. I am heartened to hear that the FCC has begun to make things a little more user-friendly for folks like our witnesses today, but more must be done. These small businesses are ready, willing, able, and frankly, itching, to get out there and build these networks, if only Washington, D.C., would get out of their way.

I ask unanimous consent that members have 5 legislative days to submit statements and supporting materials for the record.

And without objection, so ordered.

And we are adjourned. Thank you very much.

[Whereupon, at 11:17 a.m., the Subcommittee was adjourned.]

APPENDIX

Statement by

Michael R. Romano
Senior Vice President –
Industry Affairs & Business Development
NTCA–The Rural Broadband Association
Arlington, VA

Before the

United States House of Representatives
Committee on Small Business
Subcommittee on Agriculture, Energy, and Trade

Improving Broadband Deployment: Solutions for Rural America
Washington, DC

June 22, 2017

INTRODUCTION

Chairman Blum, Ranking Member Schneider, and members of the subcommittee, thank you for this opportunity to testify about the importance of rural broadband, the small businesses that deploy advanced telecommunications throughout rural America, and the investment and operating barriers that these companies confront daily. I'm Mike Romano, Senior Vice President for Industry Affairs and Business Development at NTCA–The Rural Broadband Association. My remarks today are on behalf of NTCA as well as our nearly 850 rural, community-based member companies that provide broadband and other telecom services in 46 states.

NTCA members and companies like them serve just under five percent of the U.S. population spread across approximately 37 percent of the U.S. landmass; in most of this vast expanse, they are the only fixed full-service networks available. Small telecom 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 our industry's networks and commitment to serving sparsely populated areas. These technologies serve as a small business incubator in rural areas that would otherwise see entrepreneurial activity gravitate toward the urban areas with greater resources.

Robust broadband service enables new business ideas to take root and grow in rural America and attracts small companies able to use the broadband to access the "big city" resources and markets to meet their growing needs. In rural America, that translates into economic development that produces jobs, not only in agriculture, energy and other industries with a strong rural presence, but in the healthcare sector, and just about any other retail industry that requires broadband to operate.

RURAL BROADBAND DEPLOYMENT BENEFITS AND PROGRESS

Rural Broadband Benefits the Entire U.S.

Investing in 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. A report released last year by the Hudson Institute in conjunction with the Foundation for Rural Service found that investment by rural broadband companies contributed $24.1 billion to the economies of the states in which they operated in 2015.[1] Of this amount, $17.2 billion was the direct byproduct of the rural broadband companies' own operations while $6.9 billion was attributable to the follow-on impact of their operations.

[1] "The Economic Impact of Rural Broadband" (2016), The Hudson Institute, Washington, D.C.

The Hudson study also determined that while small telcos provide a range of telecommunications services in rural areas, much of the benefit goes to the urban areas where the vendors, suppliers, and construction firms that rural telcos use are based. Only $8.2 billion, or 34 percent of the $24.1 billion final economic demand generated by rural telecom companies accrues to rural areas – the other 66 percent or $15.9 billion accrues to the benefit of urban areas.

Additionally, the report found that the rural broadband industry supported nearly 70,000 jobs nationwide in 2015 both through direct employment and indirect employment from the purchases of goods and services generated in connection with broadband deployment and operations. Jobs supported by economic activity created by rural broadband companies are shared between rural and urban areas, with 46 percent in rural areas and 54 percent in urban areas.

Immense Benefits for Consumers and Communities

Beyond the direct impacts of investment activity for job creation, the broader socioeconomic benefits of broadband for users cannot be ignored. A Cornell University study, for example, found that rural counties with the highest levels of broadband adoption have the highest levels of income and education, and lower levels of unemployment and poverty.[2] Access to healthcare is a critical issue for rural areas, where the lack of physicians, specialists, and diagnostic tools normally found in urban medical centers creates challenges for both patients and medical staff. Telemedicine applications help bridge the divide in rural America, enabling real-time patient consultations and remote monitoring, as well as specialized services such as tele-psychiatry. One study found that doctors in rural emergency rooms are more likely to alter their diagnosis and their patient's course of treatment after consulting with a specialist via a live, interactive videoconference.[3]

In Hawkinsville, Georgia, rural provider ComSouth partnered with the county public school system to deploy telehealth equipment to connect the school nurses' offices with physicians at Taylor Regional Hospital. Working with the Georgia Partnership for Telehealth, the hospital, the school system, and ComSouth facilitate better health care for students who might not otherwise be able to be seen by a physician in an area where parents can ill afford to miss a half or full day for a doctor visit. This is a very simple but elegant telehealth solution – the technologies (broadband and the monitoring equipment) are not new, but ComSouth helped put the pieces together to improve student health and save everyone time and money.

Other benefits accrue in the form of things like distance learning and commerce. There is also a shortage of teachers in many areas of rural America and those public-school districts rely on high-speed connectivity to deliver interactive-video instruction for foreign language, science and music

[2] "Broadband's Contribution to Economic Health in Rural Areas" (2015), Community & Regional Development Institute, Cornell University.
[3] "Telemedicine Consultations and Medication Errors in Rural Emergency Departments" (2013), Center for Healthcare Policy and Research and Department of Pediatrics, University of California Davis.

classes. Broadband networks also enable farmers and ranchers to use the Internet to employ precision agriculture tools and gain access to new markets.

Retail e-commerce has benefited tremendously from sales in rural America as well, where consumers may lack access to local retail outlets, but through the availability of rural broadband networks, can access a variety of shopping options. According to the Hudson Institute, rural consumers generated $9.2 billion in online sales in 2015 and if all rural Americans had access to broadband networks, the authors estimate that Internet sales would have been $1 billion higher.[4] A recent Pew Study further finds that among those Americans who have looked for work in the last two years, 79 percent used online resources in their most recent job search and 34% say these online resources were the most important tool available to them.[5]

Indeed, job creation appears to abound when fast, high-capacity broadband is deployed in a rural area. In Sioux Center, Iowa, a major window manufacturer recently built a 260,000 square-foot plant to employ 200 people. The company considered more than 50 locations throughout the Midwest, but selected Sioux Center in part because the rural broadband provider enabled this plant to connect with its other locations throughout the U.S. using a sophisticated "dual entrance" system that could route traffic to alternate paths, ensuring that the main headquarters 250 miles away and other facilities would remain connected. In Cloverdale, Indiana, a rural broadband provider met with developers and helped bring an industrial park to its service area. Powered by this provider's broadband, the facility brought more than 800 jobs to the area. In Havre, Montana, a rural broadband provider is partnering with a tribally-owned economic development agency to create a Virtual Workplace Suite and Training Center that is expected to create about 50 jobs. These stories are repeated throughout NTCA member service areas.

Unique Rural Challenges

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 population is sparse and the terrain is diverse. Especially when crossing federal lands or railroad rights-of-way in rural America, small, rural providers must address environmental and historical permitting concerns or contractual obligations that can delay projects and increase their already high costs. Then, where 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 router and device configurations in ways that were unimaginable for "telephone companies."

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[4] "The Economic Impact of Rural Broadband" (2016), The Hudson Institute, Washington, D.C.
[5] "Searching for Work in the Digital Era" (2015), Pew Research Center, Washington, D.C.

And even the best local networks in rural markets are 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.

Consumer Demand, Fiber, and Future-Proof Networks

Despite these unique rural challenges, NTCA members have made remarkable progress in deploying advanced communications networks in their communities. Based in the communities they serve, these companies and cooperatives are committed to improving the economic and social well-being of their hometowns through technological progress wherever possible. Indeed, in the face of these challenges, rural telcos like those in NTCA's membership have truly led the charge within the telecom industry toward ensuring that every consumer in the rural areas they serve has the chance to access broadband and other communications services that are as robust and reliable as anything an urban American consumer would expect.

A survey of NTCA members conducted last year found that 49 percent of respondents' customers are served via fiber-to-the-home (FTTH), up 20 percent from 2013. Twenty-nine percent of customers are served via copper loops, 15 percent cable modem, 6 percent fiber-to-the-node (FTTN), 0.5 percent fixed wireless, and 0.1 percent satellite.[6] Due in no small part to increased fiber deployment, rural customers have access to faster broadband speeds. Per last year's survey, 85 percent of NTCA members' customers can purchase broadband at speeds of 10 Mbps or higher. Seventy-one percent can now access speeds above 25 Mbps.

This growth in rural fiber deployment is even more remarkable given the regulatory instability of recent years, with USF reforms and budget shortfalls having challenged the business case for many deployments or undermined the sustainability of networks already in place. As I will discuss later in this testimony, changes in the programs that have enabled such significant success to date are now putting this progress in peril and undermining incentives to keep investing. Nonetheless, policies that encourage sustainable future-proof networks will be most efficient in responding to consumer demand over the lives of those networks, particularly when compared to short-term strategies that focus on getting lower-speed broadband deployed quickly only to find that consumer demands outpace the capabilities of such low-speed networks in a few short years.

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[6] NTCA 2015 Broadband/Internet Availability Survey Report (2016), NTCA–The Rural Broadband Association, Arlington, VA.

Much Progress, but Much More Work to Do

Despite the progress discussed above, many parts of rural America still need fiber or other robust networks. Fifteen percent of NTCA member customers don't have access to even 10/1 broadband. In a country where the Federal Communications Commission (FCC) has indicated that 90 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 the cost of broadband for the consumer must be considered too. As I will discuss later in this testimony, it does little good to have a network built in a rural area and even to have high-speed services available atop it if consumers must pay far in excess of what an urban customer would pay for the same service. Federal law recognizes this by mandating that the federal Universal Service Fund (USF) ensure reasonably comparable services are available at reasonably comparable rates in rural and urban areas alike. Yet, in many of the rural areas served by smaller providers today, this is not happening, as the combined effect of recent USF reforms and USF budget cuts have resulted in standalone broadband prices that are tens or even hundreds of dollars more per month for rural Americans than urban consumers.

Finally, once a network is built, it is not self-effectuating, self-operating, or self-sustaining. Services must be activated and delivered atop it, maintenance must be performed when troubles arise, and upgrades must be made to facilities or at least 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 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 connecting rural America – and, just as importantly, sustaining those connections – is far from complete. The rural broadband industry has a great story of success but also much more work to do – 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.

THE FCC'S UNIVERSAL SERVICE FUND HIGH COST PROGRAM

The High Cost Program Budget and Universal Service Reform

Providing robust, scalable, and sustainable broadband in rural areas is not the kind of endeavor that tends to attract substantial capital from multiple private lending sources or tends to excite Wall Street. For small carriers like those in NTCA's membership, there are very few lenders that even look to work in this space – the Rural Utilities Service under the U.S. Department of Agriculture, CoBank, and the Rural Telecommunications Finance Cooperative represent the primary lenders to whom such small rural network operators might look in borrowing investment capital.

Moreover, even where capital may be available, it can be difficult, if not impossible, to justify loans for investment in rural areas without a better business case than the rural area provides on its own. The costs of deploying networks and maintaining the service are considerable, and the few customers gained (typically less than seven per mile, and often less than one per mile) cannot afford to pay hundreds of dollars a month for broadband to cover those costs.

Direct support from the federal USF High Cost program is therefore essential to make the business case for rural broadband. In fact, it is the primary, if not the only, tool to ensure that – as mandated by the Communications Act – rural consumers can purchase telecom service reasonably comparable to what urban Americans receive, at rates reasonably comparable to what urban consumers pay.

Put another way, USF does not "pay for" networks; instead, the USF program ensures that rural consumers can pay reasonable rates for their use of services atop networks, thereby allowing consumers to buy such services and operators to justify the business case for investments in those networks in the first instance. USF is thus perhaps the best, most successful example of a public-private partnership that exists in the broadband space, having helped to justify the business case for private network investments that totaled approximately $29 billion (in terms of gross plant then in service) just for smaller rural carriers as of 2015.

Enabling the business case for delivery of advanced telecom services across rural America is a big job for a program, and yet the High Cost USF has been wedged under the same budget (without even just an inflationary adjustment) since 2011 – even as small, rural carriers have sought to deliver more robust networks that will scale to meet the anticipated enormous consumer demands for bandwidth in the future and last over the lives of the loans taken out to build them.

No justification is available for why the cap on the High Cost budget is the appropriate level of funding to meet the program's goals beyond a judgment in 2011 that 2010 support levels were the "right" amount. In fact, precisely because they have tried to keep investing where possible in

broadband, small rural carriers are now facing cuts to USF support for investments already made – revealing how much the High Cost program is woefully underfunded to do the job that the law requires and that Congress wants in terms of making robust, affordable broadband available in rural America.

While the FCC thankfully took steps to provide some level of additional funding earlier this year within the fixed overall USF budget for a subset of small carriers that elected model-based High-Cost USF support, this funding was insufficient to achieve the goals of the model the FCC designed. An additional $110 million per year is actually needed to fund an alternative model that the FCC created to promote broadband deployment. Because of this limit, tens of thousands of rural consumers will see lower speeds or no broadband at all – precisely what the reforms were intended to alleviate.

And the concerns are just as significant, if not greater, for rural areas served by those small carrier recipients of High-Cost USF that could or did *not* elect model support. The FCC tried last year to update these "non-model" (actual cost) mechanisms to enable consumers access to more affordable standalone broadband. But under a new budget control mechanism that was included with those reforms, small operators will see their support slashed by 12.3 percent on average over the next 12 months, meaning that hundreds of small rural network operators will be denied recovery of a total of $173 million in actual costs for private broadband network investments *that they have already made*. This means that small rural network operators and the customers they serve now must somehow come up with $173 million to pay for broadband investments that the USF program would have supported prior to the adoption of a harsh budget control mechanism last year.

Because of these support cuts, many rural network operators cannot charge affordable standalone broadband rates for rural consumers – the very issue the FCC was trying to fix in the reforms last year – and smaller rural operators are also cutting back on future broadband infrastructure investments. For example:

- One NTCA member company in the Southeast has indicated that it cannot justify seeking a $26 million loan to build high-speed broadband infrastructure due to the USF cuts; a project that would have delivered approximately 1,000 miles of fiber to over 7,000 rural customers is now on indefinite hold.

- Similarly, due to the USF budget cuts, a cooperative in the upper Midwest is on the cusp of cancelling 2018 construction projects worth several million dollars; these projects would have upgraded or delivered broadband for the first time to approximately 500 rural consumers and businesses, but the company now needs to scale back future investment because the USF cuts are taking away millions of dollars that were counted upon for investments already made in the past.

- In Mississippi, a small rural provider has been forced to hold off indefinitely on plans for future investments in communities like Fulton and surrounding rural areas due to the USF budget concerns, instead making minimal investments just to keep existing network plant operational rather than upgrading that network for higher-speed broadband that would help those areas thrive.

- In Nebraska, a small company with only 12 employees that just recently completed a significant fiber-to-the-home project has declined to fill four open positions – effectively cutting its workforce by 25% – because of concerns with declining USF support and its impact on the ability to pay for the network construction already completed.

- In Iowa, a small carrier has not been able to lower its prices for standalone broadband because the USF budget cuts are effectively wiping out any support for such connections, despite the intention of the reforms and the repeated calls for such a fix from Congress.

Moreover, the USF budget control can and will vary from period to period, undercutting the kind of predictability that is mandated by law and needed when evaluating long-term future investments. For the last 4 months of last year, the budget control was 4.5% on average; for the first six months of this year, it rose to 9.1% on average. Now, as of July 1 of this year and for the twelve months after that, the budget control will on average reduce USF support for small businesses by 12.3%. This kind of unpredictability is particularly challenging, if not defeating, for smaller operators seeking access to loans and trying to identify the business case for sizeable, fixed long-term investments.

Fortunately, it is not just NTCA that is concerned about the USF budget shortfall. In May 2017, nearly 170 Members of Congress – including Representatives Blum, Comer, King, Luetkemeyer, Marshall, and Velazquez – wrote to the FCC expressing serious concern about how the USF budget shortfalls will undermine private infrastructure investment and consumer rates. This letter demonstrated the sizeable and shared bipartisan interest in prompt action on this issue, and a window of opportunity exists. We are hopeful that with continued congressional interest and leadership we can see these issues addressed, and the promise of last year's USF reforms can be realized by the millions of rural consumers served by smaller rural network operators.

In short, as NTCA summarized in a recent filing with the FCC, "while much effort may have gone into rebuilding 'the engine' of non-model USF reforms, the ongoing lack of 'gasoline in that engine' (in the form of sufficient budget resources) risks rendering its operation inefficient at best and utterly ineffective at worst." This budget crisis – captured in the form of the new budget control mechanism – is undermining further deployment as small telcos will factor estimated support reductions into future planning efforts and scale back investments. Some small companies

are already reporting cancelled construction projects and loan applications for upgrades due to the insufficient High Cost budget.

Remedying this USF budget concern is imperative to the sustained delivery of affordable, high-quality broadband service to consumers and small businesses that this subcommittee and so many other members of Congress hope to see in rural America. At a time when the focus is increasingly on deploying better infrastructure faster, the continued imposition of this USF budget cap at seven-year-old levels translates to a contrary result of lower-speed broadband to fewer locations at higher rates. The FCC has taken steps to finally adopt and implement reforms as discussed above, but there is still much more work to be done to make sure the reforms and programs actually work as intended. Whether Congress or the FCC acts to provide funding to make up for these High Cost shortfalls, inaction is not an option if we truly want to see the goal of universal service realized and investment in broadband sustained in rural America.

The Connect America Fund II Auction

In 2011, the FCC undertook steps to reform High Cost USF support in rural areas served by the 13 large "price cap" carriers as well, rebranding the High Cost program in these areas as a "Connect America Fund" (or CAF). Under a cost model developed over the following several years, these large carriers were extended "offers" of model-based USF support that provided a certain amount of funding in exchange for "state-level" commitments to deploy broadband to a specified number of locations. While many of these state-level commitments were accepted by the larger "price cap" companies, this was not unanimous – and the FCC also excluded very high cost portions of their serving areas from the offers of model support in the first instance. As a result, some rural areas served by these larger companies will go up for "auction" pursuant to rules now under development.

The FCC is currently implementing a "reverse auction" to determine which carrier will receive USF High Cost support through the CAF to serve these remaining price cap areas. Providers that demonstrate ability to offer reliable voice and broadband will be allowed to bid in the "CAF II auction." For each area, the FCC will set a reserve price, or ceiling, that represents the maximum amount of support a carrier will receive to serve an area on a per location, per month basis, and the lowest bidders in a national auction will receive USF support for ten years in exchange for a commitment to build broadband to locations within their bid-upon areas within six years.

In keeping with the Communications Act principle that mandates the availability of reasonably comparable services in rural and urban America alike, the FCC established a framework of bidding weights that recognizes what sorts of services are generally available in urban areas and the value of networks that will scale to meet anticipated increases in demand over time. NTCA had

advocated for weights that recognize greater value in "future-proof" networks that will not be obsolete before the decade is up.

A traditional infrastructure analogy may resonate: if one projects that car traffic is doubling every few years on a single-lane road, one likely does not rebuild the new highway with only two lanes and then go back to add two more lanes a few years later and yet two more lanes a few years after that. Instead, given the relatively high costs of infrastructure deployment and the disruption involved in repetitious construction, one builds the highway "the right way" the first time.

NTCA believes the same should be true of our broadband networks. We should look for a balanced approach to reach as many locations as possible, but not at the societal and economic cost of deploying networks that in only a few years' time will look obsolescent and inadequate for the users consigned to them.

The areas that will be served by CAF II auction winners have some of the worst broadband service in the country – some even still use dial up. It has taken six years just to get to the point of being *on the cusp* of the auction. It is time to move forward with the auction finally.

Yet, even as the FCC turns its attention to finalizing the auction procedures, a handful of interests are looking to relitigate the bidding weights in favor of services with slower speeds and higher latency. Although the CAF II weights that the FCC adopted are not what NTCA would have wanted, the FCC's decision with respect to CAF II auction weighting represents a consumer-oriented compromise after all interested parties had opportunity to comment.

The FCC's rules strike a reasonable balance between technological neutrality and service quality, taking appropriate account, for example, of the fact that the auction winner may be the only voice provider for that rural area and the need for networks that will be sustainable and respond to consumer demand over the next decade. We hope that the FCC will proceed forward with the promise of the CAF II auction, rather than taking a step backward now to revisit auction rules that are already years in the making.

The Mobility Fund

The FCC's 2011 USF reforms also created the Mobility Fund, a universal service mechanism dedicated to supporting mobile service in high cost areas. Mobility Fund support will also be distributed through a reverse auction, so determining which areas need the support is key. Like the CAF program, Phase II of the Mobility Fund represents the long-term promise of a long-running effort to modernize how mobile networks and services are supported and target support to rural areas in need.

The FCC is currently considering how to structure a challenge process that would reveal which areas need support, but suggested beginning with carrier-submitted data containing known inaccuracies. This data likely overstates coverage – and therefore risks that areas will be erroneously declared ineligible for funding – because carriers use their own standards when claiming that an area is served and because the level of data (the granularity) is less than precise.

The FCC must begin with accurate data to ensure that support goes where it is most needed. Providers claiming to serve an area competitively should bear the burden of validating their data and actual coverage *as a starting point* in this process – putting the burden on others to "prove a negative" (*i.e.*, to claim that another provider does *not* actually serve a claimed area) makes little sense and is highly inefficient. NTCA hopes that the FCC will place the burden of validating purported coverage where it belongs – on the party in the best possession of the information needed to make that validation.

Finally, it cannot go without saying that wired and wireless broadband work in concert to provide consumers with the full broadband experience – access to data on the go, and a robust connection when at a fixed location such as a home or office. Further, the demands on the wireless network are so great that meeting them requires that a fiber-connected tower or small cell be near the mobile user at all times, meaning an extensive fiber network is essential to bringing the world of mobility to life for every consumer.

For rural consumers to truly have a reasonably comparable and affordable broadband experience, the FCC must budget accordingly and implement the new USF mechanisms with great care and precision. Placing too much hope on mobility alone without recognizing "wireless needs wires" is a recipe for failure, particularly in rural areas where distance and topography can challenge and frustrate the widespread deployment of mobile networks and services.

Contributions – How All This Gets Paid For

Of course, the long-term sustainability of these initiatives ultimately depends on updating a contributions framework that is not built for a 21st century communications ecosystem. While there are many differing views on how this should be done, the basic notion that those who make use of communications networks should contribute to the well-being and universal availability of those networks is hard, if not impossible, to argue.

Nonetheless, all of the important initiatives discussed above are supported by a shrinking base of legacy services that do not represent the majority users of our communications networks – we are building and trying to sustain universal broadband on the backs of telephone services that are declining over time. This would be like trying to recover the costs of building a highway system based upon assessments on only horseshoes and buggy wheels. Assuming all agree that universal

service is an important public policy – and Congress long ago said it is by statute – rationalizing and reforming contributions requirements is essential to firm up the foundation of universal service for the 21st century.

INFRASTRUCTURE INVESTMENT AND BARRIERS TO DEPLOYMENT

This Administration has already recognized the importance of advanced communications infrastructure as a policy priority, having included "telecommunications" within an initial list of infrastructure priorities even prior to taking office. Since then, Secretary of Commerce Wilbur Ross and Secretary of Transportation Elaine Chao have both stated that broadband buildout is an "essential part" of infrastructure. And on Capitol Hill, nearly 160 members of Congress sent a letter in January to the President urging him to include broadband within any broader infrastructure initiative.

Including a broadband component in any infrastructure plan can play an integral part – and is an essential part – in getting broadband deployed to unserved areas and sustaining networks where they already exist. As Congress works with the Administration on an infrastructure package, NTCA offers a few key objectives for consideration, building upon suggestions first outlined in a December 2016 letter to the National Governors Association when that group was evaluating infrastructure priorities in collaboration with the Presidential transition team.

First, any infrastructure proposal should at least account for, if not specifically 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. For these reasons, strong consideration should be given to leveraging – and supplementing – the existing High Cost Federal Universal Service Fund programs as a primary means of implementing a broadband infrastructure initiative.

The USF programs have been in place for years, and as explained above, the Commission has recently reoriented them under the "Connect America Fund" banner to promote broadband in high-cost rural areas. With additional resources but with very little additional "heavy lifting," these programs could "hit the ground running" and yield immediate, measurable benefits for rural consumers.

Other options could include alternative grant or capital infusion programs, comparable to what several State haves used to address "market failure areas" – places where the business case for investment is difficult, if not impossible, to make without additional resources. However, creating such programs would require more administrative effort than leveraging existing programs.

Another benefit of leveraging the reformed High Cost programs in some manner is that these programs now compel significant accountability. There are multiple levels of caps on operating expenses, caps on capital investment expenses, and measures to ensure that support goes to where it is needed rather than overbuilding other networks built without support. Atop that, there are requirements to geocode locations where broadband is installed, so policymakers and the public alike will be able to track where broadband has been extended via the programs. There are also multiple compliance checks as well as frequent and detailed audits and reviews that are comparable in many respects to IRS audits.

Second, "future-proof" networks represent the best means to ensure robust and affordable broadband will become and remain available throughout our country. While a short-term view might result in investing in cheaper technology upfront, precious public and private resources are likely to be wasted when those broadband investments need to be rebuilt in only a few years to keep pace with the kinds of services that both urban and rural consumers demand. It is therefore important that any supplemental resources that may be made available through a broadband infrastructure initiative deliver the best, most balanced payback for both the American taxpayer and the users of the networks – both in the near-term and over the life of that infrastructure.

Third, infrastructure investment depends not only upon financing but also upon 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, can present a significant impediment 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 40 percent 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.

The lack of coordination and standardization in application and approval processes across federal agencies further complicates the deployment of broadband infrastructure. While not specifically regarding federal lands, the terms of local franchises, pole attachments, and railroad crossings can also create substantial costs and concerns in deploying broadband infrastructure. Government at all levels – state and local, counties, tribal lands, and Federal – should work collaboratively to harmonize their process to expedite placement of facilities.

These issues are very real and affect broadband network operators and consumers. In Wyoming, the Bureau of Land Management state office adopted a unique bonding policy and application process that appeared to equate deployment of telecom facilities with installation of pipelines transporting hazardous substances, increasing dramatically the application burdens and the potential costs. In South Dakota, a small rural provider's multimillion-dollar fiber deployment requiring U.S. Forest Service approval encountered permitting holdups delaying completion more than a year.

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 for executive order. The MOBILE Now legislation contains changes that should be considered for near-term implementation on federal lands, such as improved "shot-clock" measures, while the FAST Act included sounds reforms that should be extended to smaller projects as well. Such actions would enable smaller operators to remain focused on providing high-quality broadband service to their customers rather than dealing with onerous regulations.

BROADBAND REGULATION

IP Interconnection

The so-called "net neutrality" (or "Open Internet" or "Internet Freedom") debate is of course the hottest topic in communications policy these days. This debate has broad and important implications for small businesses and consumers alike – but it is also not a "black and white" debate. As with anything so complex, there are nuances that make the question of how we want broadband networks to work something that requires careful thought, and may ultimately require congressional clarification.

With all the heated rhetoric that often surrounds "Title I vs Title II," the practical issues that underpin the net neutrality debates in the first place can get lost in the shuffle. Nonetheless, NTCA has consistently focused on the practical balance between "right-sized" rules and what can happen in the absence of any rules at all. We do not need – the broadband marketplace does not need – heavy-handed, one-sided regulation that favors certain segments or gets in the way of innovative offerings for consumers. At the same time, without some basic "rules of the road" to guide how companies interact with one another in the communications marketplace, there is the potential for chaos that will adversely affect rural consumers and smaller providers who need clarity and certainty to overcome the challenges of their markets.

When people ask why NTCA takes such a "middle ground" in the net neutrality debates, we ask in response what would have happened if the FCC lacked authority to address concerns about rural

call completion. For those on these subcommittees not familiar with this issue, over the past decade we have seen a segment of the industry decide from time to time that it is not worth the time, effort, or cost to make sure calls reach rural America. No one has disputed that this is a problem, and the FCC has helped put rules into place intended to find the sources of the problem and discourage (and even punish) such behavior.

Translate that now into a broadband environment where, say, a massive online video streaming service could decide in the future that it is too much trouble to deliver its data to selected rural markets, or a major backbone/transit provider might decide to increase substantially the prices for (or deny altogether) interconnection with small businesses in rural America. If that happens – and while it might seem a remote risk, who would have thought someone might decide to stop delivering phone calls to rural America either? – there needs to be someone to turn to make sure that rural America can stay connected with the rest of the world.

This is what drives NTCA's "middle ground" view on net neutrality questions on behalf of our small business membership. A basic "regulatory backstop" that ensures that data can flow seamlessly across networks of all kinds – and that a "cop on the beat" is there if and when things break down – is essential. Without some fundamental framework in place, what can help to ensure interconnection and universal service in a broadband world?

To be clear, we do not want a heavy-handed regulatory framework; as I will discuss momentarily, we have seen where that leads, and it has harmed small businesses and the broadband marketplace. A light-touch "regulatory backstop" is very different than the heavy-handed retail regulation that we saw in the wake of the Open Internet Order. Instead of basic "rules of the road" and principles to make sure data flows seamlessly, we saw an aggressive regulatory platform that favored certain segments by applying one-sided interconnection rules and other burdensome requirements only to retail Internet Service Providers.

Broadband Privacy

Fortunately, we have seen efforts to "correct" this heavy-handed approach for the benefit of consumers and the small businesses that serve them. Earlier this year, both houses of Congress invoked the Congressional Review Act (CRA) to block implementation of the FCC's privacy rules, which were adopted last October under the previous Administration. In its privacy Order, the FCC had required broadband Internet access service providers to obtain "opt in" consent from customers before using or sharing customer information, such as geolocation, financial and health data, web browsing and app usage history, and the content of communications. The order also subjected such providers to requirements to provide customers with certain notices about how their data could be used.

Prior to the congressional action, NTCA filed comments at the FCC and joined a successful petition for stay that requested suspension of the rules pending resolution of reconsideration petitions. Throughout the FCC proceedings, NTCA urged the Commission to be guided by the Federal Trade Commission (FTC) policies that govern edge and application providers, which would ensure a consistent standard of care across the broadband marketplace. NTCA noted that there was no logical justification to subject network operators to unique, more onerous standards, and that the Commission could have instead more effectively used any authority it had to mirror the FTC approach and foster a seamless and level user experience across the broadband ecosystem. The burdensome rules would have imposed considerable costs on smaller operators.

By successfully invoking the CRA, Congress effectively barred the FCC from issuing another rule in substantially the same form as the disapproved Order and forced the unwinding of the changes adopted in the privacy Order. Since these rules had largely never taken effect to begin with, the practical effect is that nothing has changed. But NTCA stands by its statements in the proceeding at the FCC – its members are committed to preserving and protecting the privacy of their customers, and they are interested in consistent standards of care and duties to protect information for all actors in the broadband marketplace. We are hopeful that the FCC and FTC can work together to consider frameworks that achieve a more consistent and holistic outcome that protects, rather than confuses, consumers without placing unreasonable, lopsided burdens on any one segment of the broadband marketplace.

Enhanced Transparency Requirements

The FCC's broadband classification in 2015 also obligated broadband service providers to include "enhanced" disclosures of information to customers about packet loss and other network performance metrics and practices, such as data caps and allowances, and prices and promotional rates. Because the new requirements were viewed as potentially burdensome for smaller operators such as those in NTCA's membership, the FCC thankfully granted those with 100,000 or fewer subscribers an exemption from the requirements until December 15, 2015, and then extended the exemption for another year. Despite a stay request filed by NTCA and others, the issue remained unresolved during the transition between administrators, and the burdensome "enhanced transparency" rules technically became effective on January 17, 2017.

Throughout this nearly two-year winding road, Senator Steve Daines and Representative Greg Walden pursued a legislative response by introducing bills that would have extended the exemption for another five years for providers with 250,000 or fewer subscribers. The bills also called upon the FCC to issue a report determining whether the exemption should be made permanent and if the small business definition should be modified. The full House of Representatives passed its bill in January and the Senate legislation is currently awaiting committee consideration. And in February, the FCC adopted an Order relieving providers with 250,000 or fewer connections from the

enhanced transparency requirements until 2022. Small carriers are counting on Congress to remain engaged in these issues to ensure regulatory certainty that promotes investment and even-handed regulation that accounts for the challenges small companies face.

We are grateful to the leaders in Congress and at the FCC who have helped to address the concerns of heavy-handed, one-sided regulation in the name of an "Open Internet." At the same time, NTCA emphasizes the continuing importance for consumers in rural areas and the small businesses that serve them of having some basic "rules of the road" to ensure those markets stay interconnected and that the goals of universal service are not undermined in a broadband world. A complete regulatory vacuum will not serve rural consumers or small service providers well.

THE REGULATORY FLEXIBILITY ACT

Congress passed the Regulatory Flexibility Act (RFA) in 1980 to direct federal agencies, when promulgating rules, to incorporate analysis of more flexible regulatory approaches that account for the unique challenges that small businesses face. The RFA's goals are worthy and necessary to prevent "one-size-fits-all" rulemaking with inherent costs that only large companies have the resources to readily absorb. Though the RFA has helped small businesses save money, agencies are all too often able to satisfy the law's requirements with cursory, rote mentions of the RFA in rulemaking documents.

Indeed, the DC Circuit ruled in 2004 that the RFA's requirements are "purely procedural" and require only that an agency explain a rule's impact on small businesses – and courts generally defer to these explanations, including explanations of why a rule's impact is reasonable. Because the RFA requires little to nothing more in substance, it is incumbent upon agencies of their own volition to follow the spirit and the letter of the RFA for small businesses to benefit from the additional analysis – and that has rarely been the case at the FCC in the past.

Close adherence to the purpose of the RFA would benefit small, rural broadband providers tremendously, which in turn would promote broadband investment in rural areas. For example, several items mentioned above could have been improved or avoided with better RFA analysis – be it the hard cap on the High Cost program budget (which is rescinding 12.3% of USF support over the next twelve months for hundreds of small businesses), the broadband privacy rulemaking, or the Open Internet Order's "enhanced transparency requirements" that technically applied to small providers for a period of time earlier this year.

One can imagine how this practice of "see saw" rulemaking leaves small companies in a constant state of uncertainty and thereby distracts them from their core business of investing in broadband. Robust compliance with the intent and letter of the RFA would benefit everyone by making the regulatory process more certain for small businesses.

We see promise in various bills under consideration in this Congress to improve the RFA and force agencies to come into greater compliance with the law's intent. For example, early in this session Congress passed the Regulatory Accountability Act (HR 5), Title III of which contains much of the Small Business Regulatory Flexibility Improvements Act (HR 33). Section 304(d) of HR 5 would require an economic assessment to accompany any agency certification that a rule will not have a significant economic impact on a substantial number of small entities. Moreover, involving the Small Business Administration (SBA) to a greater degree in the rulemaking process would improve RFA compliance, and thus we see real promise in Sec 305(a), which would empower the SBA to issue rules standardizing and governing agency compliance with the RFA.

Further, Sec 306 would require all agencies to incorporate "SBREFA panels" into their rulemaking processes, which, prior to rule publication, would require agencies to supply SBA with rulemaking materials and information on a rule's potential impact on small companies. SBA would then accept input on the proposed rule from affected small businesses and convene a review panel with representation from SBA and the agency making the rule. After analyzing the proposed rule and accepting input, SBA would report on the rule's impact on small businesses and propose alternatives. The rulemaking agency would then be required to respond to the SBA report in the rulemaking.

We commend the House for passing this legislation as part of HR 5 earlier this year, we were encouraged to see the Senate report a similar bill out of committee a few weeks ago, and NTCA urges you to ensure these improvements are signed into law in this Congress for the sake of providing a more fair and certain regulatory environment for small companies.

CONCLUSION

Robust broadband must be available, affordable, and sustainable for rural America to realize the economic, healthcare, education, and public safety benefits that advanced connectivity offers. The High Cost USF program is key to helping rural America get and remain "online" with the rest of the world, but the Communications Act principle of reasonably comparable services and rates cannot be realized under an outdated High Cost budget that is insufficient to support just those broadband investments already made. If the FCC fails to address the shortfalls in the High Cost budget, even perfectly-designed support mechanisms cannot and will not ensure that consumer demand for robust broadband is met, nor will a comprehensive package of tax incentives, bonds, and loans where the basic business case for investment is so lacking.

In addition to the significance of the High Cost USF for small business network operators in rural areas, other measures are important to facilitate their operations, to allow them to focus on the business of serving the communities in which they live and work, and to enable them to deploy

broadband-capable networks across rural America. Federal permitting reforms such as standardizing application and approval processes across agencies and revising loan sequencing regulations to allow costly environmental and historical reviews to come after funds are obligated are important pieces of the rural broadband puzzle too for smaller network operators. Greater agency adherence to the purpose of the RFA would help as well, freeing up essential time and resources for small, rural-based broadband providers to achieve their mission of delivering robust broadband rather than focusing upon compliance with "one-size-fits-all" regulations that do not reflect the unique challenges of being a small business in rural America.

NTCA thanks the subcommittee for its leadership on and interest in small business issues, and we look forward to working with you on behalf of our hundreds of small operator members and the millions of rural Americans they serve.

Statement of Dave Osborn

Chief Executive Officer

VTX1 Companies

Before the House Small Business Committee on

Subcommittee on Agriculture, Energy and Trade

June 22, 2017

Chairman Blum, Ranking Member Schneider, and Members of the Subcommittee, thank you for the opportunity to testify today on the important topic of improving broadband deployment in rural America.

Introduction

I am the Chief Executive Officer of the **VTX1 Companies**, a rural telecommunications provider based in Raymondville, Texas, which is about 35 miles north of the US border with Mexico on US-69E. I have served in this position for over 12 years, and prior to that worked for several large telecommunications equipment manufacturers. My beginning in the industry dates back to July, 1970, when I started with Southwestern Bell in downtown Dallas, Texas. I progressed with them in jobs of increasing responsibility in Dallas, St. Louis, Ft. Worth, Kansas City, Houston, and finally Morristown, NJ, at AT&T's company headquarters. Thirty plus years later, after leaving AT&T in the mid-1980s, I now reside in the Texas Rio Grande Valley in my current position. Today, I am representing **WTA - Advocates for Rural Broadband**, a national trade association, on whose board of directors I serve.

VTX1 got its start as **Valley Telephone Cooperative, Inc.**, or "VTCI", in April 1952, when a group of local farmers and ranchers formed a non-profit telephone cooperative under the Texas Telephone Cooperative Act of 1946. They did so because Southwestern Bell and General Telephone of the Southwest, GTE, had refused to bring telephone service out to the rural south Texas communities due to the enormous expense of doing so. With the help of several loans from the U.S. Department of Agriculture, our cooperative finally began providing service in 1957 after laying cables and establishing equipment switching centers. We began with four brand new "exchanges", or geographic service areas, and grew by continued construction and by purchasing exchanges from General Telephone. By 1979, we had 17 exchanges within 19 counties in deep South Texas that comprised a total of 7,300 square miles. Our current density is only .7 access lines per square mile which is one of our state's lowest density ratios.

In the late 1980's, VTCI saw an opportunity with transporting long distance up from Mexico and back and partnered with AT&T in this endeavor. An unregulated, for-profit, subsidiary **VTX Com-**

munications, LLC, was formed in December, 1987, to provide carrier transport services for almost a dozen Mexican carriers through fiber-optic bridge crossings at Laredo and Hidalgo, Texas. Long distance service was added around 1991, fixed-wireless broadband service in 2004, then finally television entertainment service in 2005. **VTX Telecom, LLC**, a for-profit subsidiary, was formed in December 2000, after the Telecommunications Act of 1996 was signed into law to provide telephone, and now internet and television service to underserved communities *outside* of the VTCI communities. VTX Telecom receives a nominal amount of Federal support (i.e., federal Universal Service Fund (FUSF) support) and some Texas USF funds (TUSF); VTX Communications is not eligible to receive either FUSF or TUSF because, as stated above, it is an unregulated entity. The primary recipient of FUSF support is the original cooperative entity, Valley Telephone Cooperative. Utilizing a very complex accounting system of cross charges for worktime and other expenses, we are able to run our company efficiently as a single entity, and to avoid confusing customers with all the different company names, we took the name **VTX1 Companies** in 2012.

Through expansion, diversification, and acquisitions, **VTX1** now provides broadband internet access, television, security, and voice telephone service to approximately 16,000 residents, businesses, schools, libraries, government buildings, and other anchor institutions in a 10,000 square mile service area—the boundary is loosely defined by Laredo, San Antonio, Corpus Christi, and Brownsville, Texas. We have just under 200 employees, around 120 buildings and around 150 service trucks and vehicles. Our impact on the South Texas economy is significant.

Solutions for Rural America

I intend to focus on three main areas where I think Congress can work with regulators to encourage broadband deployment in rural America.

1. Universal Service Policy

Serving rural America is incredibly costly, and we couldn't do it in the rural areas we serve without the federal Universal Service Fund (USF). The principle of universal service, that every American, regardless of where he or she lives, should have access to communications technology, has its roots in the Communications Act of 1934. The USF, as we know it today, was created by the Telecommunications Act of 1996. Without the support we and other rural telecommunications providers receive from the fund, our cooperative members would never be able to afford the services we provide. According to the Telecom Act, USF support is supposed to be "predictable and sufficient" to the task of providing "advanced telecommunications and information services...in all regions of the Nation." Unfortunately, the principle of sufficiency seems to become less and less important to federal policymakers over time.

For the past several years, the Federal Communications Commission (FCC) has labored to modernize USF, most recently after

the release of the National Broadband Plan in 2010, which recommended freezing support for small, rural broadband providers at 2010 funding levels. The reform efforts culminated in an Order in March of 2016, which has resulted in companies similarly situated to VTX1 seeing their support reduced because of a budget target reflecting 2011 funding levels. Incidentally, the 2011 support levels were based on support for voice networks as opposed to broadband networks, which is what the reformed USF would focus on post-2011. This approach attacks the problem of getting broadband to rural America from the wrong angle. Instead of setting a goal for broadband in rural America and attempting to determine what that would cost, the FCC has arbitrarily set a budget and essentially said "see what you can do with this."

So far, VTX1's USF reimbursement from mid-2016 to June 2017 is down approximately a half million dollars on an annualized basis with grater reductions anticipated in light of the caps and constraints the FCC has placed on the overall High Cost Fund to stay under its self-imposed budget cap. This despite the fact that we have had to increase our fiber to the home investments in fiber, electronics and maintenance fees to meet the FCC's goals of no less than 10 mbps down with a preferred 25 mbps down broadband service. In the last two and a half years, VTCI has spent almost $27 million in capital expense (CAPEX) dollars that had been previously committed to as part of our five-year CAPEX plan to bring high-speed broadband service to our rural cooperative members. These federal support reductions have now reduced our capital expansion within our VTCI service areas and slowed the conversion to fiber-optic technology. It is important, and necessary, to upgrade all terrestrial networks to fiber because, while it does cost money to upgrade to a fiber-optic infrastructure, a fiber-optic network will have a service life several times longer than that of a copper one—plus the maintenance costs of a fiber-optic network are much less than a copper infrastructure. Additionally, serving the needs of our national cellular companies to "backhaul" their soon to be deployed 5G LTE traffic from their towers to their regional switching centers will be very important. Because of the speeds involved, cellular carriers will be hard pressed to backhaul their traffic by radio technology alone.

Instead of caps and cuts to support, the High Cost Program within USF needs to be fully funded so that carriers can upgrade their networks to deploy broadband further throughout their service territories. If that cannot be done *at the very least* an inflationary adjustment to the High Cost Program is warranted so that high-quality broadband can be pushed further out into rural America. If the country wants to get serious about catching up with the rest of the world's broadband deployment, the High Cost Program support should actually be *increased*.

2. Streamlining the Permitting Process for Existing Rights of Way

If Congress wants to improve the efficiency by which USF dollars are put to use, it should review and reform the permitting process for access to federal lands and other rights of way. Small compa-

nies like mine wait years and spend hundreds of thousands of dollars per project on environmental, archaeological, and historical preservation reviews. It is not uncommon for small companies like mine to experience delays of up to 18 to 24 month in getting broadband projects going because of these types of review. This is particularly problematic in parts of the country that have shorter construction seasons than Texas.

While some of these reviews are necessary and important, particularly when it comes to previously undisturbed ground, it makes little sense to require extensive reviews for projects that make use of existing and operational rights-of-way. I'll share an anecdote from my own experience, which is not atypical.

VTX1 received both a Broadband Initiatives Program (BIP) loan/grant combination from the Department of Commerce and a Broadband Technology Opportunity Program (BTOP) grant from the Department of Agriculture to construct a fiber-optic infrastructure as part of the American Recovery and Reinvestment Act (ARRA) stimulus program. The intent of these projects was to be shovel-ready, and ours was but for the fact that we had to wait nine months for our environmental reviews needed to bore underground within 20 feet of "center line" along a U.S. federal highway.

Obtaining environmental permits to use rights-of-way that have been and are continually being disturbed should be fast-tracked for approval.

3. Regulatory Reporting Burdens

We continue to be concerned with the increased quantity of reporting obligations and reporting burdens placed upon us involving regulatory reporting to the FCC, the Universal Service Administrative Company (USAC), and the National Exchange Carriers Association (NECA) and other federal agencies when the recovery of those costs has been capped by not only the FCC's Corporate Operations cap but the maximum $250 per line per month cap. VTCI performed a detailed labor study in 2016 and found that we spend around 3,200 hours completing just the federal reporting requirements placed on us. This costs us about $100,000 a year in wages and another $50,000 a year in benefit costs alone with none of these dollars being recovered by any federal support. A copy of our spreadsheet showing the regulatory burden wage analysis is attached. Total benefit cost was estimated at fifty percent of wage cost. While we recognize the need to justify all of our support expenditures and requests, we believe the FCC must take all necessary steps to ensure that high cost rural companies such as VTCI are allowed to recover every dollar of these regulatory burden expenditures from the high cost support mechanisms. Without such assurances, small rural companies such as ours may very well be squeezed by having ever increasing reporting requirements while receiving ever smaller support due to caps and constraints on the high cost fund.

Conclusion

Our conclusions are straightforward:

- The High Cost Fund component of Federal USF needs to continue in remote rural serving areas as well as having a cost of living escalator to keep the fund viable during periods of inflation. An increase in High Cost Fund monies should be considered as well to speed up broadband deployment;
- Permitting timelines should be greatly reduced in areas and along roads where the land has been previously and continuously disturbed;
- Regulatory reporting should be streamlined and limited to items that have a significant, measurable impact on broadband deployment in America.

This concludes my testimony. Thank you for your attention and I look forward to answering any questions you may have.

Summary of Regulatory Burden Analysis for VTCI

	Reporting Entity	Total Hours	Total Cost
	USAC	260	$8,024
	NECA	678	$20,923
	FCC	1,791	$55,270
	RUS	162	$4,999
	Other Federal	302	$9,320
Grand Total		**3,193**	**$98,536**

Name of Filing	Financial data download (y/n)	Billing data download (y/n)	Other data download (y/n)	total hours to get data	total hours to analyze data	Subtotal Hours	Frequency per year	total hours to input filing	# of filings per year	Grand Total Annual Hours	Loaded Hourly Rate	Cost per Filing
FCC Form 473	0.0	0.0	0.0	0.0	2.0	2	1.0	1.0	1.0	3	$30.86	$92.58
FCC Form 497 - Lifeline	0.0	2.0	0.0	2	2.0	4	12.0	1.0	12.0	60	$30.86	$1,851.60
FCC Form 499Q	2.0	0.0	0.0	2	3.0	5	12.0	2.0	4.0	68	$30.86	$2,098.48
FCC Form 499A	2.0	0.0	0.0	2	5.0	7	4.0	2.0	1.0	30	$30.86	$925.80
ICLS / IAS USE Certification	0.0	0.0	0.0	0	2.0	2	1.0	1.0	1.0	3	$30.86	$92.58
TUSF Remittance Worksheet	0.0	3.0	0.0	3	3.0	6	12.0	2.0	12.0	96	$30.86	$2,962.56
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CAF ICC Data Collection	0.0	3.0	0.0	3.0	6.0	9	1.0	2.0	1.0	11	$30.86	$339.46
CAM/Part 64 (Cost Study)	1.0	2.0	4.0	7.0	7.0	14	12.0	6.0	1.0	174	$30.86	$5,369.64
Company Services Questionnaire	0.0	3.0	1.0	4.0	27.0	31	1.0	16.0	1.0	47	$30.86	$1,450.42
Cost Study - Prior Year	8.0	13.0	6.0	27.0	101.0	128	1.0	155.0	1.0	283	$30.86	$8,733.38
EC1050 Settlement DME & DMA	2.0	3.0	0.0	5.0	3.0	8	12.0	2.0	12.0	120	$30.86	$3,703.20
FCC Form 507 & 1.3 Loop Data Rpt & Certification	0.0	0.0	1.0	1.0	2.0	3	4.0	1.0	4.0	16	$30.86	$493.76
Form 508 - ICLS Common Line Projections	0.0	0.0	2.0	2.0	2.0	4	1.0	1.0	1.0	5	$30.86	$154.30
Form 509 - ICLS Common Line Actuals	1.0	0.0	0.0	1.0	2.0	3	1.0	1.0	1.0	4	$30.86	$123.44
TRP Forecast	8.0	0.0	0.0	8.0	8.0	16	1.0	2.0	1.0	18	$30.86	$555.48
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CAF ICC Support	0.0	3.0	0.0	3.0	6.0	9	1.0	2.0	1.0	11	$30.86	$339.46
CPNI Certification	0.0	0.0	2.0	2.0	2.0	4	1.0	3.0	1.0	7	$30.86	$216.02
ETC Newspaper - Public Notice	0.0	2.0	0.0	2.0	4.0	6	1.0	8.0	1.0	14	$30.86	$432.04
Exch Boundary Maps - Re-Certification	0.0	0.0	5.0	5.0	36.0	41	1.0	58.0	1.0	99	$30.86	$3,055.14
FCC Form 395	0.0	0.0	3.0	3.0	3.0	6	1.0	4.0	1.0	10	$30.86	$308.60
FCC Form 477	8.0	11.0	30.0	49.0	156.0	205	2.0	454.0	2.0	1318	$30.86	$40,673.48
FCC Form 481 - 5 Yr Plan	58.0	8.0	28.0	94.0	96.0	190	1.0	49.0	1.0	239	$30.86	$7,375.54
FCC Form 555	0.0	2.0	0.0	2.0	2.0	4	1.0	2.0	1.0	6	$30.86	$185.16
FCC Reform - L/S Rate Increase - Benchmark Rvw	2.0	2.0	0.0	4.0	3.0	7	1.0	2.0	1.0	9	$30.86	$277.74
Form 159 - Regulatory Fees	0.0	0.0	0.0	0.0	2.0	2	1.0	2.0	1.0	4	$30.86	$123.44
International Traffic Data Rpt	0.0	0.0	0.0	0.0	4.0	4	1.0	2.0	1.0	6	$30.86	$185.16
IXC Geographic Rate Avg Cert	0.0	3.0	0.0	3.0	4.0	7	1.0	2.0	1.0	9	$30.86	$277.74
Lifeline - Public Notice	0.0	2.0	0.0	2.0	4.0	6	1.0	8.0	1.0	14	$30.86	$432.04
Record Keeping & Contact Info Compliance Cert	0.0	0.0	0.0	0.0	3.0	3	1.0	2.0	1.0	5	$30.86	$154.30
Urban Rate Survey	0.0	0.0	3.0	3.0	5.0	8	4.0	4.0	2.0	40	$30.86	$1,234.40
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BCAS / RUS USDA Rpt	2.0	3.0	0.0	5.0	5.0	10	4.0	7.0	4.0	68	$30.86	$2,098.48
RUS Form 479 / RUS Operating Report	0.0	1.0	1.0	2.0	55.0	57	1.0	18.0	1.0	75	$30.86	$2,314.50
RUS Non-Discrimination - Public Notice	0.0	2.0	0.0	2.0	4.0	6	1.0	8.0	1.0	14	$30.86	$432.04
RUS Operating Report Submission	0.0	0.0	0.0	0.0	3.0	3	1.0	2.0	1.0	5	$30.86	$154.30
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24481 & 32567 Compliance Affidavits (FUSF/TUSF)	0.0	0.0	0.0	0.0	2.0	2	1.0	1.0	1.0	3	$30.86	$92.58
CIC Utilization Certification	0.0	0.0	0.0	0.0	2.0	2	2.0	1.0	2.0	6	$30.86	$185.16
Emergency Operations Drill	0.0	0.0	0.0	0.0	5.0	5	1.0	8.0	1.0	13	$30.86	$401.18
Eminent Domain Report	0.0	0.0	0.0	0.0	2.0	2	1.0	1.0	1.0	3	$30.86	$92.58
Form 502 NANPA	0.0	2.0	2.0	4.0	6.0	10	2.0	3.0	2.0	26	$30.86	$802.36
HUB Report	0.0	0.0	1.0	1.0	4.0	5	1.0	1.0	1.0	6	$30.86	$185.16
Lifeline LIDA Data Exports & Imports	0.0	0.0	1.0	1.0	2.0	3	12.0	1.0	12.0	48	$30.86	$1,481.28
Municipality Access Report (MARs)	0.0	2.0	0.0	2.0	2.0	4	4.0	2.0	4.0	24	$30.86	$740.64
NTCA Federal Regulatory Reporting Burden Survey	0.0	0.0	8.0	8.0	4.0	12	1.0	0.0	1.0	12	$30.86	$370.32
PUC Earnings Monitoring Rpt	1.0	0.0	0.0	1.0	2.0	3	12.0	1.0	1.0	37	$30.86	$1,141.82
Quality of Svc Rpt	0.0	2.0	0.0	2.0	7.0	9	4.0	5.0	4.0	56	$30.86	$1,728.16
SPCOA & COA ILEC/IXC/CLEC Re-registration	0.0	0.0	0.0	0.0	3.0	3	1.0	3.0	1.0	6	$30.86	$185.16
State Agency Utilities Rpt	0.0	2.0	0.0	2.0	2.0	4	2.0	1.0	2.0	10	$30.86	$308.60
Statewide Average Access MOU	2.0	2.0	0.0	4.0	4.0	8	1.0	4.0	2.0	16	$30.86	$493.76
TUSF Fund Rcpts Project No. 41120 & 36163	0.0	0.0	0.0	0.0	2.0	2	1.0	1.0	1.0	3	$30.86	$92.58
TUSF Support Fund Receipts	0.0	2.0	0.0	2.0	2.0	4	4.0	2.0	4.0	24	$30.86	$740.64
Workforce Diversity Report	0.0	0.0	2.0	2.0	3.0	5	1.0	4.0	1.0	9	$30.86	$277.74
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Notes:

Master List of Regulatory Reports to various reporting entities was provided by
Senior Billing & Business Compliance Manager, Paula Smith

Met with Senior Manger to identify the various point of contacts from the different departments
to reach out to as contributors of data to complete the regulatory reports.

Created a template to send to contributors to complete the number of hours needed to:
download, analyze, prepare, review and submit data for designated Regulatory Reports

Requested from Payroll a Corporate Loaded Labor Rate to be used to determine the internal cost
to complete the identified Regulatory Reports

Created Master Regulatory Contributor Template to accumulate all data to complete the
2016 Regulatory Burden Analysis

Resources:

*List of Regulatory Reports from Business Compliance
*Time Studies from the following groups:
- Regulatory
- Billing
- Switch
- Network Services
- Accounting
- Plant Services
- Human Resources
- Records

Improving Broadband Deployment: Solutions for Rural America

Testimony of Tim Donovan
Senior Vice President, Legislative Affairs
Competitive Carriers Association

before the

United States House of Representatives Committee on Small Business
Subcommittee on Agriculture, Energy, and Trade

June 22, 2017

Chairman Blum, Ranking Member Schneider, and members of the Subcommittee, thank you for inviting me to testify about improving broadband deployment in rural and remote areas and its impact on small businesses throughout the United States.

I am testifying on behalf of Competitive Carriers Association ("CCA"), the nation's leading association of competitive wireless carriers. CCA is made up of nearly 100 carrier members ranging from small, rural providers serving fewer than 5,000 customers to regional and national providers serving millions of customers. CCA also represents nearly 150 associate members—small businesses, vendors, and suppliers that serve carriers of all sizes. The vast majority of CCA's members are small businesses.

Consumer demand for mobile broadband has increased exponentially, and studies show it will continue to grow at an astounding rate. For example, Ericsson's latest Mobility Report forecasts a greater than five-time increase in mobile data consumption over the next five years. To meet these demands, Congress and the Federal Communications Commission ("FCC" or "Commission") must tackle broadband deployment challenges today to meet needs of our connected economy.

A persistent digital divide continues to plague certain rural areas that remain less likely to have access to, or choices for, broadband, smartphones, and other devices. Pew Research Center reports that "[d]espite recent gains in digital technology adoption, rural adults remain less likely than urban and suburban adults to have and use these technologies. For example, rural Americans are 7 to 12 percentage points less likely than those in urban and suburban areas to say they have a smartphone, traditional computer or tablet computer." As a result, while rural areas may be more connected today than in the past, substantial segments of rural America still lack the infrastructure needed for high-speed internet, and the service deployed in these areas may be slower than that of their urban counterparts. Policymakers must therefore implement targeted policies to ensure that even the most remote Americans remain connected in today's mobile world.

Last week, FCC Chairman Pai participated in the inaugural Rural Prosperity Task Force meeting, where he outlined the importance of policies that support broadband availability in rural areas. As he articulated, providing connectivity nationwide is at the core of why the FCC was created in 1934. Chairman Pai shared examples of economic growth powered by broadband with the task force, including remote monitoring in a meat processing plant in Nebraska, cattle feed lot monitoring in Kansas, connected combines in Maryland, and healthcare, education, and job creation advances all made possible by broadband.

These examples are not purely anecdotal. The Hudson Institute recently found that the investments and ongoing operations of small rural broadband businesses contribute $24.1 billion annually to the nation's gross domestic product, with 66 percent ($15.9 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. A separate report found that when a county gains access to broadband, there is approximately a 1.8 percentage point increase in the employment rate, with larger affects in rural areas. In testimony before a Senate subcommittee last year, a Mississippi farmer estimated a minimum "10-15% loss of efficiency when connections are disrupted" for their machines alone. New telehealth services can save a rural hospital more than $100,000 a year in healthcare and community costs. 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. It's clear: the future of rural economic and small business growth is directly tied to the availability of mobile broadband.

It is not just important for today's economy; mobile broadband is vital to tomorrow's economic development through next generation or 5G services and the Internet of Things ("IoT"). The majority of CCA's members live and work in the communities they serve, and therefore share in the potential success of ubiquitous mobile broadband service and the deployment of next-generation technologies in their hometowns. As this Committee continues to focus on improving broadband deployment, particularly in rural areas and for small businesses, we urge you to ensure reasonably comparable services are available in urban and rural areas with sustained federal support in targeted areas, streamline policies to deploy, maintain, and upgrade mobile broadband networks, and provide all carriers with opportunities to access finite spectrum resources.

Accurate Data is Necessary to Define Areas Where Federal Funding Can Preserve and Expand Mobile Broadband Deployment

Congress created the USF high-cost program to provide Americans in rural areas with "reasonably comparable" services as those in urban areas with the help of sufficient and predictable support. Section 254(b) of the Communications Act provides that the FCC shall base policies on "statutory principles established by Congress," including the provision of "advanced telecommunications and information services" to consumers "in all regions of the Nation," at "just, reasonable, and affordable rates," and of services that are "reasonably comparable" to those provided in urban areas. In today's world, 'reasonably comparable" service is synonymous with fast, affordable mobile broadband technology. Yet, to this day, numerous members of Congress attest to the unfortunate reality of insufficient and inaccessible wireless coverage throughout the United States, both as public servants responding to their constituents and as consumers in the mobile wireless ecosystem. Committee hearings recently held in both the House and Senate find members lamenting the consistent, uniform availability of mobile broadband throughout their districts.

CCA applauds action on the FCC's Mobility Fund II. The FCC adopted the Order in March of this year which to dedicate $4.53 billion over the next decade to close "coverage gaps." However,

without coverage data that accurately reflects consumers' on-the-ground experience, decisions that determine areas eligible for Mobility Fund II support will be misguided and scarce resources will be squandered. The underlying data that the FCC currently uses to make funding and other policy decisions, known as the Form 477 data, relies on carrier-reported information lacking standardization. The FCC's own presentation of the data includes a disclaimer that "coverage calculations ... have certain limitations that likely result in an overstatement of the extent of mobile coverage." Prior to allocating Mobility Fund II support, the Commission must use standardized data including a challenge process that is efficient, eases burdens on smaller entities, and generates accurate determinations of where qualifying coverage exists and where Mobility Fund II must target support. The Commission is about to distribute $4.53 billion in funds over the next ten years for mobile broadband deployment, and it must do so in a fiscally responsible way that accurately bridges the digital divide to preserve and expand mobile services.

The need for accurate data and analysis is an uncontroverted, bipartisan principle under current leadership at Congress and at the FCC. Specifically, on-the-ground experience, including coverage data obtained by driving across the country, makes clear that mobile wireless service is not yet available everywhere, much less on a competitive basis as required by statute. Congress stands in bipartisan agreement on this point, and has continuously noted that a strong foundation based on data that accurately reflects consumers' on-the-ground experience is critical to advancing economic decisions. CCA applauds this Congressional support, including letters to the FCC and recent legislation that recognize that From 477 mobile coverage provides an inherently unreliable account of mobile broadband coverage, particularly in rural areas. We must begin with concrete, factual data to adequately address gaps in effective competition across the mobile wireless market.

CCA supports current legislation before the House of Representatives, H.R. 1546, The Rural Wireless Act of 2017, introduced by Congressman Dave Loebsack (D-IA) which would direct the FCC to establish a methodology for mobile wireless coverage data that reflects actual consumer connectivity experience. Additionally, Congressmen David McKinley (R-WV) and Peter Welch (D-VT) introduced the bipartisan H.R. 2903, the Rural Reasonable and Comparable Wireless Act of 2017, which would direct the FCC to implement regulations that establish a national standard to determine whether rural areas have access to mobile broadband services comparable to their urban counterparts. CCA commends each piece of legislation seeking to identify remote and rural areas that are still unserved and underserved.

Streamlined Infrastructure Siting Policies are Critical to Robust Mobile Broadband Networks

Competitive carriers must be able to timely and efficiently deploy physical infrastructure. Carriers must increase the number of towers, base stations, antennas and wires, often within public rights-of-way, to support the advanced wireless services necessary to keep

pace with consumer and network demands, yet carriers continue to face prohibitive delay and cost issues while working through the federal, state, and local siting process. Carriers must pass through a regulatory maze, as demonstrated in the attached chart, to gain approval to serve their communities, with potential costs and delays at each step. These longstanding obstacles are getting worse as industry moves towards deploying dense small cell networks and fiber. Most CCA members serve rural areas and have invested significant private capital, along with USF support, to deploy wireless services in some of the hardest to serve parts of our nation. However, expanding service to underserved and unserved rural areas depends on the ability to efficiently site facilities, including on federal lands.

Congress, the FCC, and industry have acknowledged that achieving true 5G connections will depend on government's ability to update the applicable regulatory frameworks, and make them more predictable. While critically important for 5G, these are not issues for future action—they also affect deploying today's technologies and policymakers must act immediately. CCA supports Chairman Pai's Broadband Deployment Advisory Committee ("BDAC"). The BDAC's recommendations on how to accelerate broadband deployment will directly support the Commission's statutory mandate to facilitate high-speed broadband for all Americans. Congressional efforts also are needed. Congress should pass legislation that improves the process for deploying facilities on federal lands, and streamlines state and local barriers to deployment. Strong national siting standards, including shot clocks, reasonable restraints on state and local infrastructure-related fees, and modifications to current historic preservation and environmental compliance siting processes, will relieve carriers and state and local review offices from resource burdens, and will improve connectivity for consumers. In addition to reducing state and local barriers, Congress should work with the FCC to address in the short term its current framework for complying with the National Environmental Protection Act ("NEPA") and the National Historic Protection Act ("NHPA"), including section 106 review.

Siting on Federal Lands

CCA members often express frustration about the hurdles they face when filing an application to deploy or upgrade facilities on federal lands. These experiences include lost or missing applications, applications that languish for years, inconsistent or undisclosed rules across and within agencies, redundant historical or environmental reviews, and inconsistent denials. In other words, unnecessary bureaucratic red tape regularly prevents competitive carriers from providing high-quality mobile broadband service in rural America. In many cases, carriers stall and sometimes abandon plans to buildout in these areas. This is not an acceptable outcome. The BDAC includes a Working Group dedicated to streamlining the federal siting process; I encourage this Subcommittee to pay attention to the Working Group's efforts as part of any effort to address federal lands siting issues.

State and Local Barriers to Broadband Deployment

CCA and its members are deeply engaged in policymaker's ongoing work to address state and local barriers to broadband deployment. At the FCC, for example, CCA serves on the BDAC's Removing State and Local Regulatory Barriers Working Group, alongside many other stakeholders, including municipal representatives. When it comes to state and local siting processes, imposing reasonable restraints on state and local infrastructure-related fees and making sure applications are timely reviewed under clear rules will allow competitive carriers to make a better business case for deployment. It also will reduce the need to lobby individual local authorities or States to adopt broadband-favorable rules. Broadband deployment is an investment in the local economy, and while local authorities often resist a "one size fits all" solution, most industry requests for national standards are administrative and structural and can appropriately respect local issues.

Congress Must Implement Durable Infrastructure Solutions

The FCC can quickly move to address some of these infrastructure challenges, but Congress must act to provide long-term certainty. Congress should include support for mobile broadband deployment and services in any infrastructure bill. There is bipartisan support from House and Senate leadership to find solutions to bridge the digital divide. Democrats on the House Energy and Commerce Committee as well as Senate Democrats have proposed broad infrastructure plans that include designated funding for broadband infrastructure. House Energy and Commerce Subcommittee on Communications and Technology Chairman Marsha Blackburn has confirmed her commitment to include broadband in any infrastructure proposal, and Senate Commerce, Science and Transportation Committee Chairman John Thune has held numerous hearings on the importance of mobile broadband infrastructure. Similarly, the Administration's Fiscal Year 2018 budget proposal prioritizes improvements in broadband deployment, and includes "$200 billion in outlays related to the infrastructure initiative," which could support broadband deployment. Policymakers must be mindful that small rural and regional providers have limited resources, and continue to face challenges securing adequate capital for wireless siting projects, an issue where this Committee plays a critical leadership role.

CCA also supports legislation like S. 19, Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act, or the MOBILE NOW Act. The MOBILE NOW Act would contribute to streamlining federal siting and deployment policies, as well as repurposing federal spectrum for commercial use. Combined with FCC efforts, Congress is poised to provide relief to carriers seeking to serve the most challenging areas of the United States. Sound, unified infrastructure policies will create jobs and drive economic development. This will play a significant role in ensuring the United States leads the world in 5G.

Access to a Myriad Spectrum of Resources is Critical to Deploying Ubiquitous Mobile Broadband Networks

The wireless industry is on the brink of a tectonic technological shift. While many carriers in rural areas still maintain 2G networks, other wireless providers are currently transitioning from 3G to 4G networks and other providers are turning down their 2G and 3G networks altogether. Carriers are now looking forward to deploying 5G next-generation technologies. To make this important jump, competitive carriers must have access to low-, mid-, and high-band spectrum to deploy next-generation mobile broadband and, eventually, 5G networks. This will determine viability of smaller carriers as the demand for data increases.

Building on the trend to next-generation technologies, Congress should support efforts to allocate additional spectrum resources for mobile broadband use, including low-, medium-, and high-band spectrum, both licensed and unlicensed. Additionally, Congress should work alongside the Commission to prevent attempts to encroach on mobile carrier operational rights throughout the millimeter ("mmW") spectrum. Competitive carriers already are using these licenses for point-to-point and critical backhaul services across rural and urban communities, enabling broadband connectivity for local municipalities, schools and businesses in these areas. Congress and the FCC should continue to facilitate carriers' use of this spectrum to provide all consumers with the most advanced services.

A varied spectrum portfolio is necessary to meet consumers' increasing demands, and the birth of unlimited plans and data services on a variety networks. The Commission's first ever 600 MHz incentive auction closed successfully on March 30, 2017, with a gross revenue totaling nearly $20 billion. Importantly for this Committee, based on Congressional direction, the FCC took many steps to support participation by smaller businesses, including building interoperability into the rules, providing sufficiently small geographic license sizes, and ensuring all carriers had a fair and equitable opportunity to participate.

CCA commends Congress for its critical role in authorizing the incentive auction, which is the second largest spectrum auction in FCC history with 84 MHz of reallocated spectrum, 70 MHz allocated for mobile broadband use, and $7 billion provided to the Treasury for deficit reduction. Broadcasters won $10.05 billion in revenue and eligible broadcasters will have access to $1.75 billion in reimbursement payments for the repack. The auction itself topped the charts in FCC auction history—garnering a whopping $19.8 billion in gross revenues, second only to the AWS-3 auction, And, the nearly $20 billion in gross revenue from the 600 MHz incentive auction is the capstone for an estimated total of about $66.5 billion in gross revenue generated by the 2012 Spectrum Act.

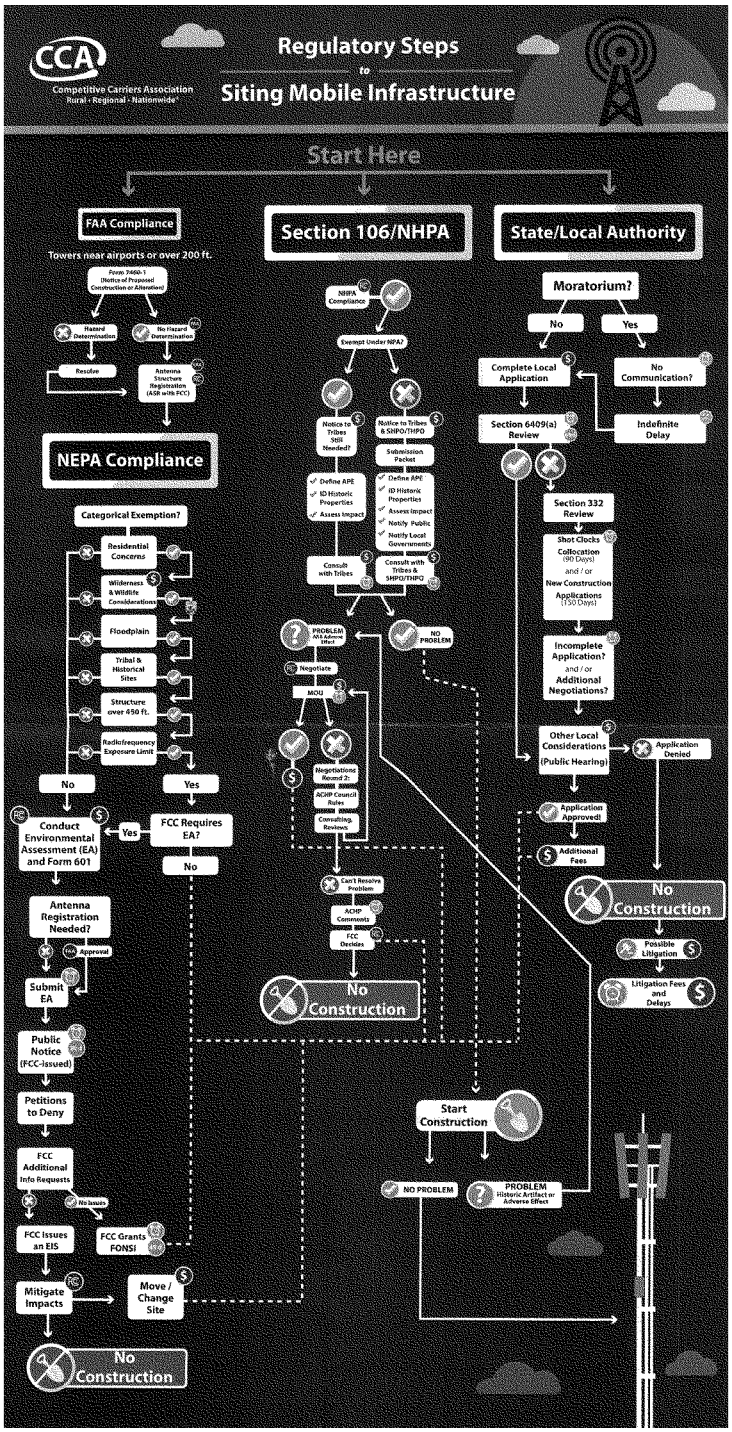
Once put to use, this 600 MHz spectrum will be vital to expanding mobile broadband coverage into unserved areas. What's more, the Congressionally based 39-month repack timeline also will provide an engine for economic stimulation and job opportunities across rural America. For these reasons, Congress and the FCC

should promptly dismiss any attempts to introduce delay and uncertainty in the repack process, and instead, focus on completing the post-incentive auction transition within the statutorily-based timeline or sooner. Any delay would be a detriment to competition, the public interest, and the economy.

—

CCA members are proud to serve rural and remote parts of the country, but there is a long way to go for ubiquitous connectivity. Indeed, the majority of CCA's members live and work in the communities they serve. As a result, competitive carriers share both a professional and personal stake in ensuring ubiquitous mobile broadband service is available to all consumers in their communities. The coming year will be a time of significant transition in the wireless market as regulatory and technological changes take hold, and as carriers move toward 5G and ioT technologies. During this transitional and often uncertain time, Congress must continue to identify and remove structural barriers to mobile broadband deployment in rural and remote areas of the United States, providing greater opportunities and certainty for small business and the consumers they serve. Mobile broadband is a critical economic driver, and its role in economic development will be magnified following the evolutionary leap to 5G technologies. Consumers expect their service and devices to connect wherever they live, work or travel; yet competitive carriers struggle to access the resources required to build out robust mobile broadband networks. Policies established by Congress and implemented by the FCC will play a significant role in whether rural America has access to the latest services or languishes behind the modern economy. CCA looks forward to continued work with policymakers to ensure legislation and policies support ubiquitous mobile wireless service and innovation for all consumers.

Thank you for your attention to these issues and for holding today's important hearing. CCA looks forward to continuing to work with you, your colleagues, and the FCC to make these policies a reality, and I welcome any questions you may have.


CCA
Competitive Carriers Association
Rural · Regional · Nationwide
Regulatory Steps
to
Siting Mobile Infrastructure
Start Here
FAA Compliance
Towers near airports or over 200 ft.
Form 7460-1 (Notice of Proposed Construction or Alteration)
Hazard Determination
No Hazard Determination
Resolve
Antenna Structure Registration (ASR with FCC)
NEPA Compliance
Categorical Exemption?
Residential Concerns
Wilderness & Wildlife Considerations
Floodplain
Tribal & Historical Sites
Structure over 450 ft.
Radiofrequency Exposure Limit
No
Yes
Conduct Environmental Assessment (EA) and Form 601
Yes
FCC Requires EA?
No
Antenna Registration Needed?
Approval
Submit EA
Public Notice (FCC-issued)
Petitions to Deny
FCC Additional Info Requests
No issues
FCC Issues an EIS
FCC Grants FONSI
Mitigate Impacts
Move / Change Site
No Construction
Section 106/NHPA
NHPA Compliance
Exempt Under NHPA?
Notice to Tribes Still Needed?
Notice to Tribes & SHPO/THPO
Submission Packet
Define APE
ID Historic Properties
Assess Impact
Notify Public
Notify Local Governments
Consult with Tribes
Consult with Tribes & SHPO/THPO
PROBLEM Art. Adverse Effect
NO PROBLEM
Negotiate
MOU
Negotiations Round 2?
ACHP Council Rules
Consulting Reviews
Can't Resolve Problem
ACHP Comments
FCC Decides
No Construction
Start Construction
NO PROBLEM
PROBLEM Historic Artifact or Adverse Effect
State/Local Authority
Moratorium?
No
Yes
Complete Local Application
No Communication?
Section 6409(a) Review
Indefinite Delay
Section 332 Review
Shot Clocks
Collocation (90 Days)
and / or
New Construction Applications (150 Days)
Incomplete Application?
and / or
Additional Negotiations?
Other Local Considerations (Public Hearing)
Application Denied
Applications Approved!
Additional Fees
No Construction
Possible Litigation
Litigation Fees and Delays

Written Testimony of Christopher Allendorf

V.P. of External Relations and General Counsel

Jo-Carroll Energy, Inc. (NFP)

Before the Subcommittee on Agriculture, Energy, and Trade

Improving Broadband Deployment: Solutions for Rural America

Electric Cooperatives and Rural Broadband

Thank you for the opportunity to address this committee regarding efforts to increase access to high-speed broadband internet in rural America. As a natural gas, broadband, and electric cooperative serving thousands of rural accounts across four counties in Northwest Illinois, Jo-Carroll Energy is part of a broader electric cooperative industry that serves approximately 42 million consumer-owners (members) who own approximately 42% of electric distribution lines that cover 56% percent of our nation. Considering that most of those members and lines are in rural America, these numbers are critical to identifying and understanding how electric cooperatives serve as an established, sensible partner in developing programs and rules that will increase rural access to broadband internet. In our rural areas, we serve an average of four consumer-owners per mile of line, which is higher than many cooperatives, but significantly less than the thirty or more consumers per mile average for investor-owned and municipal utilities in urban areas. Low customer density is an important statistic to keep in mind when considering how best to help facilitate deployment of large-scale broadband access in rural America.

Jo-Carroll Energy was founded in 1939 as a result of the Rural Electrification Act of 1936 (REA) by a small group of farmers who saw the immense business benefits of electricity, though none of the existing utilities found it economically viable to serve them. This small group of farmers pooled their resources, with critical funding provided under the REA, to construct the necessary infrastructure and energized their first lines in 1940. With electricity provided by their local cooperative, these rural Americans were able to enjoy the same comforts as their urban peers. There is a parallel situation happening right now with broadband deployment.

Utility cooperatives like Jo-Carroll Energy are private, not-for-profit businesses owned and governed by their consumers. Two principles under which utility co-ops operate are democratic governance and operation at cost. Specifically, every consumer-owner can vote to select local board members who then set rates and oversee the co-op. Revenue received by the co-op that is in excess of the amount it takes to provide services must be returned to consumer-owners as capital credits. Under this structure, utility co-ops provide economic benefits to their local communities, rather than distant stakeholders, by ensuring profits stay it the hands of the local consumers, not stockholders.

Why is Jo-Carroll Energy in the Wireless Broadband Business?

Locally-owned cooperatives, as a result of their governing principles, are more attuned to the needs and requirements of those they serve. It has become apparent that the need for access to high speed broadband service is no less important for the success and survival of rural areas today than electricity was more than 75 years ago. Can you imagine large swathes of the inhabited U.S. without electricity today? We have to ask ourselves the same question now about rural areas without broadband access.

Recognizing this reality, Jo-Carroll Energy's board of directors decided to begin offering wireless broadband service to our members in 2009, based on feedback the individual directors received from their constituents that they either had no access to internet or were limited to dial-up connections. This lack of internet service was impeding everything from expansion of small, local businesses, to students not being able to perform necessary coursework at home.

At that time, there were two local, for-profit, wireless internet service providers (WISP) within our service area, a major telco, and a regional cable company providing service. Their services were limited to larger rural towns and villages. None had a business motivation to serve our more rural areas, unless a person/business could afford to make it feasible for them by shouldering significant costs of construction themselves, which is the opposite of how utility cooperatives have operated for 80 years. We have since acquired one of those WISPs, which otherwise would have ceased operating, so that numerous rural residents would continue to have access to fixed-wireless broadband. Others continue to operate for-profit broadband businesses in areas with more concentrated populations.

What we found over the course of the next six years, however, was that fixed-wireless broadband systems are a rapidly aging technology that struggles to keep up with the ever-increasing speed and bandwidth demands of users. Additionally, the rural nature of our business created geographical challenges to large-scale deployment of fixed-wireless internet. Our service area has several types of topography, from the tallest point in Illinois, through dense forests, to innumerable valleys and river basins. Fixed-wireless proved to be more difficult to deploy due to our terrain and we ended up constructing costly towers in order to somewhat compensate. The resulting service that we could provide was a lifeline to remote users who likely never would have received service from a for-profit company, but it is far from ideal.

Over the course of time, as our utility operation demands changed, we converted our utility communications, including our offices and links between substations and meters, over to a fiber-based loop. Fixed wireless broadband for our utility operations faced the same geographical challenges as our consumer-owners were experiencing and it could not continue to provide the increasing reliability and capacity needs for our own utility operations. Eventually, we nearly eliminated our internal use of the fixed-wire-

less component, except as a redundancy. Since then, we have seen the benefits of fiber broadband firsthand in our utility operations.

We continue to serve roughly 1600 wireless broadband accounts, but the technology is increasingly expensive to construct and maintain, with most of the equipment having a 5-year useful life. Fiber infrastructure, on the other hand, has an exponentially longer useful life and few bandwidth constraints. It is also cheaper to construct because we can better utilize our existing overhead and underground utility infrastructure rather than having to construct towers. The cooperative business model allows us to provide utility service to the most remote areas in our service territory, but it also means that costs must be shared equally among consumer-owners and broadband is no different for us. Cooperatives' electric utility business took nearly two decades to develop incrementally in order to eventually provide service to everyone. Rural America, especially our businesses, cannot afford to wait that long, at a competitive disadvantage, for broadband to develop in the same fashion.

Why Do We Believe That Fiber is the Solution for our Territory and Rural America?

After seeing for ourselves internally how much of an advantage fiber provided, we saw fiber as a technology that could provide reliable, fast broadband to rural America and one that would allow us to better utilize existing overhead and underground conduit infrastructure, free from the geographical constraints of fixed-wireless technology. Several companies, including some with government fund grants, had laid "middle-mile" fiber throughout our area, but it is still up to other companies to establish "last-mile" infrastructure for end-users.

As a result, while increased middle-mile infrastructure meant that fiber became a technology option for us to provide retail broadband service, it would still require significant capital to bring fiber to our rural users. In addition to local businesses, one area that stood out to us as demonstrating the urgent need for last-mile fiber construction was rural schools and students. Several of our rural schools were able to connect to the middle-mile fiber network, allowing them to provide the benefits of fiber broadband at school. However, the students were left with whatever internet service they had at home to research, complete, and submit their assignments, which often requires broadband internet. Very rural students were left at a competitive disadvantage because of a lack of access to reliable broadband compared to their peers who lived in towns and villages with more internet options.

Fixed-wireless broadband had not proven to be a feasible solution for connecting our rural consumer-owners and in 2015, Jo-Carroll Energy began planning a fiber pilot project in one of the rural towns we serve, Galena, Illinois. The feedback we heard from our consumer-owners, along with the countless articles and research we read, all demonstrated that reliable broadband was a necessity for quality of life and economic development in rural areas. It is difficult for rural businesses to remain competitive without high-speed broadband. The global economy requires rural areas to have

the same access to reliable broadband as their urban peers in order to remain viable.

We felt that Galena was the perfect testing ground for our first fiber deployment. Galena, a town of 3500 near the Mississippi River, has very diverse population and business demographics. It is the second most visited tourist spot in Illinois after Chicago. Tourism has created a large retail and service industry in Galena and the surrounding area. Outside of tourism industry needs, Galena represents the needs of any other small, rural towns. Galena businesses told us they needed reliable broadband service to ensure they could process credit cards in a timely fashion, take online reservations, provide high-speed wireless to customers, and much more.

We believed a fiber system could meet the needs of Galena businesses and we saw Galena as the perfect starting point for a fiber system that could meet the same needs eventually throughout our service area.

Jo-Carroll Energy's Galena fiber pilot project was completed in 2016. We utilized a mixture of existing overhead and underground infrastructure to place the fiber bundles. We estimate that there are approximately 460 possible accounts within the footprint of the project. I have attached testimonials from several of our fiber-connected businesses that demonstrate how crucial fiber broadband has been to their success. Our take rate among businesses is over 60%. Many of these users previously had cable or fixed-wireless broadband. The success of businesses using our fiber internet service in the pilot project area has convinced Jo-Carroll Energy that fiber internet provides the most stable, reliable platform for rural internet and that it is a critical component for economic development.

Residential demand has not been as high as we anticipated and cost is a factor. Though we are working on bringing costs down, our fiber packages are currently more expensive than options offered by other providers, but these other services are subject to latency, reliability, and usage allowance restrictions. We hope that as our fiber-connected businesses continue to tout the benefits of fiber, more residential users will take note.

A major factor leading to our higher costs is the lack of access to capital in sufficient amounts to cover the high expense of initial construction and deployment. As a cooperative, we operate at cost and our access to capital is limited by what we ask consumer-owners to contribute through rates. As our density figures shows, we have a smaller group of consumers over which we can spread costs. Therefore, more government grant funding to reduce the upfront capital investment would help create the financial incentive for local cooperatives to expand high-speed internet access beyond what we are able to undertake on our own.

Another contributing factor to our fiber pilot project also came about because for-profit entities were abandoning broadband in our service area. The major telco providing broadband within our project area is not connecting new users and existing users are constrained by limited infrastructure and slower speeds; much like

traditional phone lines, its broadband system has been left to wither on its own.

Regardless of whether broadband service is provided by a for-profit telco or cable company, their offerings are only available to residents who live in towns and villages, where higher customer density provides profit incentives; profits play a large role in determining what areas are served. Additionally, we are offering a superior product with fiber. The existing service options are subject to bandwidth restrictions and high latency during peak demand times which are more acute in rural areas because of weak signals due to topography. All of this frustrated local businesses.

Jo-Carroll Energy has seen firsthand that fiber integrates relatively seamlessly with existing overhead and underground utility infrastructure, making permitting easier to obtain, which is otherwise a concern for any company. We have found that fiber is also much more scalable at a lower cost than fixed-wireless. As bandwidth demand increases and new users are connected, only relatively minor investments in fiber infrastructure are needed to meet both challenges, which we have not found to be the case with fixed wireless.

Utility cooperatives are uniquely positioned to partner with the government to provide this service because of the existing infrastructure we have in place to serve rural America. Together with a governance model that is favorable for rural internet users because there is no profit motivation and consumer-owners have a direct say in the service being provided. Utility cooperatives will remain serving these areas, long after other companies have reduced the quality of their service or abandoned areas altogether and fiber is the robust, scalable technology we need to provide it.

How Can Government help Provide Reliable Broadband Service to Rural America?

We applaud Chairman Pai and the Federal Communications Commission for creating the Broadband Deployment Advisory Committee (BDAC) to take look at the barriers to providing broadband access to rural areas of our country. We were especially pleased that Jim Matheson, CEO of our national trade association, NRECA, was appointed to serve on the committee and bring the voice of non-traditional providers, like electric cooperatives to the table for these important discussions. Mr. Matheson will undoubtedly make sure that the voice of our consumer-owners in rural America is heard in conservations about expanding broadband access. The BDAC is expected to make recommendations later this year on how to spur greater deployment of broadband service.

Congress has worked with previous Administrations to provide funding for broadband projects through the Federal Communications Commission, the Rural Utilities Service at USDA, and the National Telecommunications and Information Administration at the Department of Commerce. These programs have had both success stories and challenges in pursuit of bridging the digital divide for rural America. I hope we can use the knowledge gained from those programs to make sound investments in the future.

As Congress and the Administration discuss plans for reauthorization of the Farm Bill and an Infrastructure funding package in the coming months, increasing deployment of broadband service in rural America through grants and direct construction contributions must be one of the top priorities in those packages. As you consider proposals to spur broadband deployment, we believe that all potential providers, including electric cooperatives, should be eligible to participate in an open and inclusive process that allows providers the ability to compete for funding opportunities. In addition, we urge policymakers to consider the scope of capital needed to make the upfront capital investment to extend broadband service to rural America and allocate the monetary resources needed to meet this expansive challenge. We hope that our experience with what has and hasn't worked for deploying broadband in rural areas will also provide insight for these discussions.

Looking to the Future for Rural America

Bringing electricity to rural America 80 years ago was a task of epic-proportion. The federal government created a strong, lasting partnership with rural utility cooperatives to accomplish that goal. That partnership provided the same high quality of life to all Americans, regardless of economics and location. The investments made over 80 years in utility infrastructure shines as an example of what can be done when you are willing to think outside the box to meet a goal. Today, the challenge to bring robust broadband service to rural America is as difficult as it was to bring electricity, but Jo-Carroll Energy has seen that it is no less important for the continued success and well-being of rural America. It is our sincere hope that Congress and this Administration will continue to reinforce their partnership with rural utility cooperatives to bring electricity to rural America and build upon that partnership in the 21st century with continued support for the no-less audacious goal of providing rural Americans with high-speed broadband service.

Thank you for taking the time to allow me to share our experiences.

Testimonals from Galena Businesses with Jo-Carroll Energy's Fiber Product

• Note: Jo-Carroll Energy's broadband internet service is marketed as Sand Prairie Wireless to differentiate it from our other utility services. It is a fully integrated business unit.

Paul, Owner of a Galena business

We were really excited when we heard that fiber was coming to downtown Galena. Our business specializes in selling things for people...in our case here, I have eight listing stations. To sell on e-bay you have to upload pictures, create descriptions, and research items. All of that is done on the cloud - or the internet. All of our business is cloud based, so when we had the opportunity to go to a fiber system that offered the speeds that the fiber does, we could not wait.

We went from doing 5x2 to 50x7. The bottom line is that was a huge increase in speed. What that means for us is an increase in productivity. Fiber means we can work faster and we can list more; that means my business can grow, I can employ more people, I can sell more things, and I can help more people find value in the things they have.

If you use the internet from a business standpoint, you need the speed of fiber. It is the way of the future; it is why this install in downtown Galena makes Galena a more viable place to do business. Having a consistently high internet connection is crucial. You need that high-speed connection and you need it to be consistent.

Fiber optic in downtown Galena gives business owners the opportunity to grow their business utilizing the power of the internet. With that consistent speed, you can grow your business to a whole different level outside of just Main Street.

The investment in downtown Galena for the fiber network is incredible from the standpoint of the business community. Very few communities of our size have that kind of a connection. They're working with much slower speeds and connections that are not consistent. To have that investment in downtown Galena just brings us to another level. Galena is already a great place to visit; Galena is a great place to come shop, to eat, and just enjoy the beautiful Main Street that we have. Now as business owners, we can go beyond that by utilizing the power of fiber internet. The investment made in the infrastructure makes it easy for any business on Main Street to do business internationally with the speed of light. It is just phenomenal.

Cory, General Manager of a Galena restaurant.

Chose to go with Sand Prairie Fiber for the fast internet speeds. It is one of the first companies to offer speeds that are beneficial

for our restaurant. The fast internet speeds allow our wait staff to give our guests the best service possible by using tablets to enter orders and also to accept credit card payments. With the fast speeds we are receiving credit card transactions are instant and online reservations are made and confirmed in real time. I would highly recommend it. The speeds are blazing fast. The installation process went seamlessly.

Dan, President of a Galena Business

My company uses the Sand Prairie Fiber service for our daily connectivity to our third-party data center and has six people on the connection throughout the day. We are very happy with the speed and stability of the connection. High-speed broadband service was very badly needed here in Galena for the entire business community and we are very happy Jo-Carroll Energy and Sand Prairie have committed to providing this valuable service.

U.S. House Small Business Committee
Improving Broadband Deployment: Solutions for Rural America
June 22, 2017

Mike Romano
NTCA–The Rural Broadband Association
Answers to Questions for the Record

Representative Bacon

QUESTION:

With the technological advances of agricultural equipment requiring greater connectivity, rural broadband development can greatly improve the productivity and efficiency of our agricultural economy in states like Nebraska. Production agriculture operations are significant businesses that drive growth outside of just rural communities. How can we specifically streamline the regulatory requirements so rural providers can spend less on compliance and focus more capital on deploying infrastructure to communities that have tremendous need for this kind of connectivity?

ANSWER:

While right-sizing of regulatory requirements is an important part of removing barriers to investment in rural areas, there are many rural areas to which investments simply will not flow in the absence of a better business case. Thus, as an initial matter, efforts to right-size and rationalize regulations must be paired with programs like a right-sized Universal Service Fund (USF) High Cost budget as discussed in my testimony to promote effective broadband deployment in rural America.

Nonetheless, it is absolutely correct that the best-funded, best-planned networks may never deliver fully on their promise (or even get built in the first instance) if they face the prospects of regulatory red tape and needless delay. While regulatory approvals serve important purposes, we have seen a consensus for some time now on the issue of simplifying the administrative barriers to deployment, at least in part by coordinating processes across federal agencies.

Chairman Thune's MOBILE NOW Act (S 19), for example, includes helpful provisions on streamlining and simplifying the process for securing easements, rights-of-way, and leases on federal land and other property regardless of which agency owns it. Further, the bill addresses the

pressing concern of ensuring spectrum in rural areas is used for wireless deployment. The 2015 Highway Bill (HR 22, the "FAST ACT") contained several provisions to streamline the process for securing National Environmental Policy Act (NEPA) permits across federal agencies, but only for projects "likely to require a total investment of more than $200,000,000." We would like to see this threshold lowered to accommodate more broadband deployments, especially by smaller providers in rural areas where projects of such size are rare. Also, federal loan processes could be improved by allowing environmental and historical reviews to be conducted after funds are obligated, but prior to disbursement.

Federal Communications Commission (FCC) Chairman Pai's Digital Empowerment Agenda offers helpful ideas for incentivizing carriers to part with unused spectrum or partner with providers to build out in rural areas – the plan also proposes shot clocks for deployment to minimize delays due to regulatory barriers. Moreover, FCC reporting requirements often overestimate the utility of reporting and underestimate the time and cost of compiling information. The FCC, possibly through the newly-proposed Office of Economics and Data, should consider performing a better assessment of the burdens that both existing and newly proposed reporting requirements place on providers – especially smaller providers with limited resources. Finally, the FCC should act to remove barriers and instead encourage transactions for the sale of rural properties that larger carriers may be uninterested in but smaller carriers view as growth opportunities.

Question from Representative Bacon:

"With the technological advances of agricultural equipment requiring grater connectivity, rural broadband development can greatly improve the productivity and efficiency of our agricultural economy in states like Nebraska. Production agriculture operations are significant businesses that drive growth outside of just rural communities. How can we specifically streamline the regulatory requirements so rural providers can spend less on compliance and focus more capital on deploying infrastructure to communities that have tremendous need for this kind of connectivity?"

VTX1 Response:

The last several yeas have seen a lot of what our company sees as change in direction for regulatory reporting, and with all these changes it has created a whirlwind of activity. The FCC 477, to include HUBB reporting and 481 reports and their formats, seemed to be evolving constantly over the last several years. Inclusion of a detailed five-year plan and yearly updates was very time consuming for our company because it had to be in the right format for our consultants. It was questionable whether anyone ever looked at the data submitted for the five-year plans, and we understand the five-year plan is no longer a requirement.

We were also required to submit electronic boundaries in a specific format for our exchange boundaries (study area boundaries) to identify and rectify boundary overlaps/conflicts with other LECs. Historically these boundaries had been maintained and documented by the Texas PUC. For us this was very time consuming, and we did reach out to other small LECs and get some boundary overlaps identified. As it turned out the larger companies such as Verizon (now Frontier) and AT&T were somehow given a waiver and were not required to submit their boundaries due to confidentiality agreements so those were never addressed. The majority of our study area boundaries border these two companies, so for us this seemed like a big waste of time and resources. We are already reporting our areas by census blocks via the 477 process. See the link below.

https://www.fcc.gov/reports-research/maps/study-area-boundaries/

This year NECA has asked us to provide data for each work order we issue that is "similar" to FCC 477 data already being submitted. So that process has been implemented.

Our yearly activities related to documenting and updating records, maps and CPR related to our annual cost study is very time consuming. Although we realize this is important, it still takes time and often results in questions from the consultants for clarification.

In 2016 we instructed our engineering records groups just to document the number of hours we spent on the FCC 477 and study area boundary projects alone and it exceeded over 700 employee hours for this group alone. The number did not include all the other reports and data we compile for regulatory.

For small companies all this reporting can be overwhelming.

There is a need for some regulatory oversight for obvious reasons, but for the **EPA** regulators to **prohibit** performing engineering activity in conjunction with environmental activity is a waste of time and money. These two activities could have been performed concurrently, by two different entities, thus reducing the time to deliver service to customers. Environmental approvals can take as long as six months to a year. Ours took 9+ months and delayed our project start almost a year. Our view is that there were wasteful delays.

We also spend an inordinate amount of time submitting forms to NEPA (National Environmental Policy Act) that includes the following: the US Fish & Wildlife, TCNS (Tribes), FCC, FAA, and SHPO (State Historic Preservation Office) Archaeology. There are many others, too many to list. The point being that all of the information submitted to all of these agencies is almost the same information and it can take months to hear back from each one. This led to even more delays. This is compounded when you add wireless towers to the list.

If a floodway is to be crossed, then the State and Local agencies must approve. State and local Agencies have jurisdiction over U.S. Floodways and Waterways. Often the local representative is only available 2-1/2 days a week so this builds in delays that takes weeks to overcome. These agencies and agents are not flexible at all. If the state says it's ok to cross a floodway, and you don't get local approval, the local representative will make you redo the entire crossing at your expense, even if the project is 100% compliant with the state and local regulations.

After all of this, the demand for reports to the agencies like USDA, NTIA, etc... is never ending.

In the event there is a need to cross a water boundary (Rio Grande River), then the U.S. International Boundary & Water Commission (IB&WC) gets involved. In our case, both Mexico (CILA) and the USA (IB&WC) have to agree on the project needs. Approval can take from months to a year.

By working under the thumb of our Federal Program Officer and trying to meet the 67% completion date by the end of year two requirement, we spent approximately $1M-$2M which we could have spent on putting fiber in the ground. We went over budget by approximately this amount which was booked against our annual capital budget.

This was caused by the way the federal government defined project completion: percentage of completion status was based on how many dollars we had drawn down from the BTOP pool to pay contractors. The more dollars you spend, the faster you reach project completion. The percentage of completion had to relation to how much of the actual project construction had be completed. No private sector organization I know of would utilize this type of criteria to determine the percentage of project completion.

We were also required to follow Davis-Bacon guidelines for wages on our projects. This is a federal framework that determines wages

and weekly wage payments for all workers—contractors and employees. We had to wait weeks and months to get approvals from our regulators confirming that a certain job required a certain pay depending on the county in which the work was being performed. In all cases our prevailing wages were over the Davis-Bacon minimums, so all of this effort was unnecessary and a waste of precious time.

The heart of the question in our minds is how can we specifically streamline the regulatory requirements so rural providers can spend less on compliance and focus more capital on deploying infrastructure to communities that have tremendous need for this kind of connectivity. Our recommendations are as follows:

1. **Shorten the EPA approval cycle.** EPA requirements are complex and take months to complete and usually require the expertise of an EPA consulting firm which adds cost to the process. Delays due to EPA environmentals cost money and serve little practical purpose in furthering the EPA's goals to protect the environment.

2. **Focus environmental impact studies to areas where it is useful.** Requiring environmentals on public highway rights of way where people drive cars in addition to pulling over and stopping there is unnecessary. The right of way land is continuously and frequently disturbed thereby making it highly unlikely that protected and endangered plant and animal species will be found and harmed.

3. **Scale back the reporting -** much of which is on information that is available elsewhere. We have submitted similar information to multiple government agencies (NECA, RUS, FCC, USAC for example) whose computer systems cannot share data. Our cost to create and submit reports for the federal government alone amount totals to around $100,000 per year in salaries - not counting the overhead that goes with those salary dollars. This is excessive and could be lowered by significant amounts with more reasonable reporting requirements.

Representative Bacon, thank you for the opportunity to respond to your very relevant question.

REP Don Bacon (R-NE-02): "With the technological advances of agricultural equipment requiring greater connectivity, rural broadband development can greatly improve the productivity and efficiency of our agricultural economy in states like Nebraska. Production agriculture operations are significant businesses that drive growth outside of just rural communities. How can we specifically streamline the regulatory requirements so rural providers can spend less on compliance and focus more capital on deploying infrastructure to communities that have tremendous need for this kind of connectivity?"

Across all levels of government, streamlining the network deployment process is critical. As noted in my testimony, the current regulatory steps necessary to deploy mobile infrastructure are burdensome and rife with opportunities for delay and additional costs. These barriers stifle network investment and ultimately thwart carriers' ability to provide service that meets consumers' coverage and capacity needs. Streamlined siting policies are critical to expanding mobile broadband service to unserved areas today and leading the world in 5G in the years ahead.

Congress and the Federal Communications Commission ("FCC") must simplify infrastructure processes and procedures to facilitate more effective mobile broadband deployment. Mobile data traffic will grow an estimated five times—from approximately 5 gigabits per month per smartphone in 2016 to an estimate d25 gigabits per month per smartphone by 2022—and carriers are working to deploy the infrastructure needed to innovate and keep up with consumer demands, especially those in rural areas. Expanded infrastructure supports new services, creates jobs, inspires innovation, and powers for economic opportunities, especially in rural America.

CCA offers the following recommendations for Congress and the FCC to achieve the mutual goal of streamlining regulatory deployment requirements for competitive providers.

- Amend the Communications Act to streamline state and local siting processes, including prohibiting moratoria;
- Improve access and increase certainty with regard to deploying mobile broadband infrastructure on federal lands;
- Amend the National Historic Preservation Act ("NHPA") to clarify that small wireless deployments are not a federal undertaking;
- Streamline mobile network deployment under the NHPA and National Environmental Preservation Act ("NEPA") processes, including common-sense exclusions for small wireless equipment or structure deployed on previously disturbed grounds;
- Reduce burdensome fees and delays in the local, state, and federal siting processes by enforcing meaningful "shot clocks" and employing "dig once" and "deemed granted" policies;
- Improve access to municipal poles and reduce attachment fees.

Additionally, carriers must have long-term certainty with regard to support from the High Cost program of the Universal Service Fund, and eligible areas for support from Mobility Fund Phase II must be based on reliable coverage data.

CCA looks forward to continued work with Congress and policy-makers to ensure siting policies facilitate innovation and foster ubiquitous mobile broadband service across the United States.

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Jo-Carroll Energy, Inc. (NFP)
Your Touchstone Energy® Cooperative

jocarroll.com

August 10, 2017

VIA E-MAIL

The Honorable Donald J. Bacon
Committee on Small Business
2361 Rayburn House Office Building
Washington, D.C. 20515

Dear Representative Bacon,

This letter is in reply to your request for a response dated July 31, 2017 relating to testimony on June 22, 2017, in a hearing titled, "Improving Broadband Deployment: Solutions for Rural America". In answer to your question regarding how to streamline the regulatory requirements for rural providers to allow more capital spending on broadband infrastructure, to foster productivity and efficiency for small businesses in rural areas (especially agri-business), we believe revisions to current qualifications FCC funding programs like the Connect America Fund (CAF) can help us reach that end.

Congress can achieve your stated aim, and help us achieve our goal of providing reliable, high-speed broadband access to areas in need, by creating a level playing field for small, non-traditional providers like us to compete for federal funds through programs like CAF, along with major telecommunications providers. Currently, an entity like Jo-Carroll Energy, a not-for-profit energy cooperative, must become what the FCC considers an "Eligible Telecommunications Carrier (ETC)", in order to fully compete for CAF funding. The practical effect limits applications from non-telecommunications companies like us because we would become subject to regulations and reporting requirements as a telecommunications carrier for a limited purpose.

This added layer of regulation in order to fully qualify for CAF funding is not something an organization like ours can undertake. We need Congress to encourage the FCC to look at non-traditional providers, like electric cooperatives, as partners in this endeavor by loosening strict definitions of what entities may apply and not subject them to further regulation in order to fully compete. We would ask for similar, not preferential treatment, in qualifying for funding.

In summary, Congressional support for entities like ours to have the ability to compete equally for federal funding opportunities is imperative. In rural areas, we need the FCC to recognize that the task of bringing broadband access to rural America, thereby allowing rural businesses to thrive through enhanced productivity and efficiency, will require collaborating with non-traditional, non-telecommunications entities through truly open funding programs.

Thank You

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