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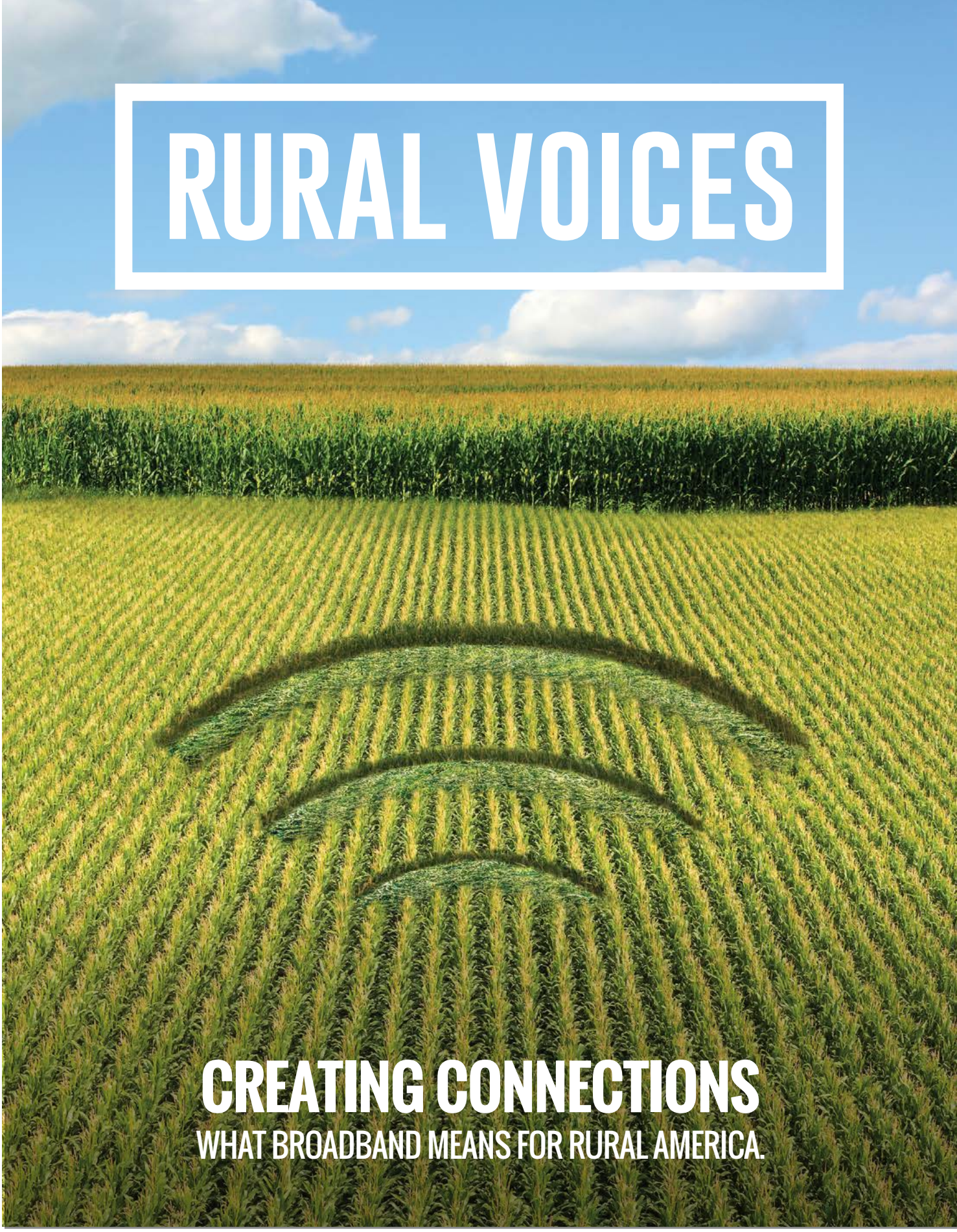
HOUSING ASSISTANCE COUNCIL

FALL 2018 EDITION · VOLUME 22 · NO.2

RURAL VOICES



CREATING CONNECTIONS

WHAT BROADBAND MEANS FOR RURAL AMERICA.

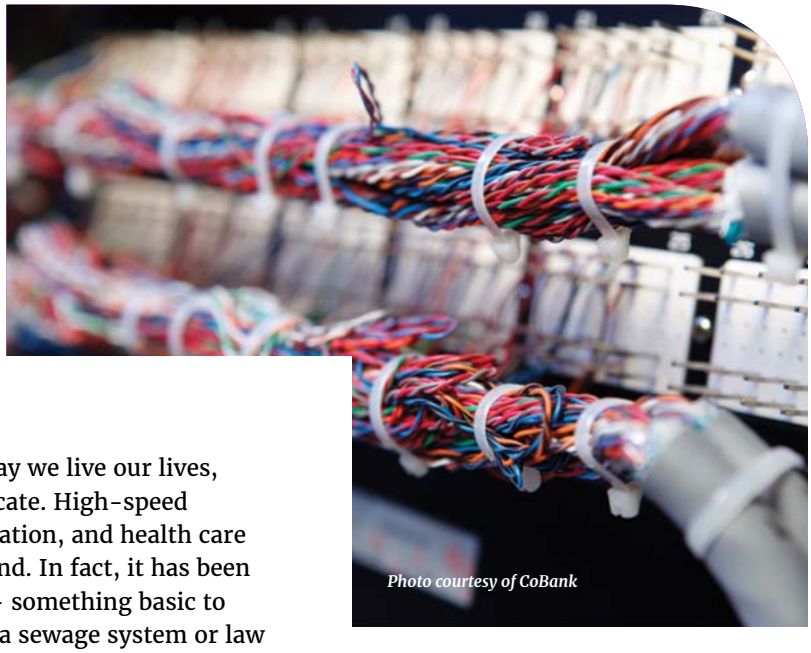


Photo courtesy of CoBank

Dear Friends,

The internet has fundamentally changed the way we live our lives, influencing how we learn, work, and communicate. High-speed internet access is so essential to business, education, and health care that communities without it are being left behind. In fact, it has been described as a public utility and a public good – something basic to society that should be available to anyone, like a sewage system or law enforcement.

Yet rural communities, especially the poorest and most isolated places, too often cannot reach this gateway to the modern economy. Data show that rural Americans are significantly less likely than urban or suburban residents to have a broadband connection at home. Even where the infrastructure for internet exists, the speeds are often slower than in metropolitan areas. People in rural areas also tend to have fewer devices, including smartphones and tablets.

Many communities are working on ways to bridge this rural divide. This issue of *Rural Voices* focuses on the challenges of bringing broadband to rural areas and offers stories of locally driven success. It also provides broader policy discussions on the future of rural broadband and the role of federal solutions.

Because universal rural access to broadband is necessary to create and maintain communities and economies where residents can thrive, it is relevant to providing decent, affordable rural housing. As this magazine's contents demonstrate, local rural housing organizations and local governments can help bring broadband to rural America – increasing the potential for innovation, educational opportunity, and economic growth.

Sincerely,

Andrew Bias
Chair, Board of Directors

Peter Carey
President, Board of Directors

David Lipsetz
CEO

RURAL VOICES

Access to High-Speed Broadband Opens New Doors for Rural Communities

Broadband Makes Rural Communities Stronger

Rural Maryland County Finds Multiple Ways to Expand Broadband

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A View From Washington

Access to High-Speed Broadband Opens New Doors for Rural Communities

By Senator Angus King

The federal government has the power and resources to expand rural broadband.

Imagine, for a moment, that you're in the market for a new home. Not just any home – the home that you plan to settle into, raise a family, and put down roots. One day, you find the perfect house – the right number of bedrooms and bathrooms, a spacious backyard, even those original hardwood floors you've always wanted. Even better: it's the right price! You can't believe your eyes – it's too good to be true! Just as you're about to say that you want to start the paperwork, the real estate agent shares one final piece of information: the house doesn't have a reliable high-speed internet connection. And there's no guarantee that it ever will.

Now, a question: Do you still buy that house?

If I posed that hypothetical to 100 prospective homebuyers, I'm not sure how many would follow through with that purchase – and you really can't blame them, because high-speed internet isn't a luxury that someone can live without. Their decision would be rooted in the fact that in a 21st century world, access to the internet is a vital part of modern life.

Internet access is ingrained in our day-to-day activities. Students need to access the internet to do their homework – without it, they fall behind. Businesses rely on the internet to reach a broader customer base – without it, they struggle to compete in an increasingly global marketplace. Seniors depend on the internet to access telehealth technologies – without it, they must make costly and difficult trips to doctors, and may ultimately be forced to move out of their homes. And nearly everyone uses the internet as a tool to interact with the world around them

– without it, they miss opportunities to connect with their communities and learn about both local and global news.

But rural Americans do not always have internet access, much less fast and reliable access.

The Federal Government's Role in Expanding Rural Broadband

This is a serious problem, but it's one we have the power to improve. I am a co-founder of the Senate Broadband Caucus and serve as one of the co-chairs of this bipartisan group. In all, the co-chairs consist of two Democrats (Amy Klobuchar of Minnesota and Heidi Heitkamp of North Dakota), two Republicans (Shelley Moore Capito of West Virginia and John Boozman of Arkansas), and one independent (yours truly) – which shows you that this problem cuts across partisan lines. It's about taking care of our rural communities and opening up new opportunities for the people who live in them. The political will is there, because these policies just make sense – we only need to keep pushing.

As a part of this effort, I've laid out a roadmap of four key steps I think are important actions that can and should be taken by the federal government. We need to:

1. **Modernize federal programs that support broadband.** In order to ensure that communities have adequate broadband resources for modern needs, we need to ensure better and more accurate broadband data collection and coordinate broadband support across federal agencies and in partnership with local, state, and private resources.
2. **Make broadband a priority in federal infrastructure investments.** Although it is not often thought of in the same way as roads and bridges, the fact is that the internet is a building block of sharing information and conducting business. In any federal effort to improve our infrastructure, broadband should be included.
3. **Remove obstacles and reduce costs to broadband deployment.** As it currently stands, the federal government has a number of requirements that make it harder for states and local communities to streamline broadband deployment regulations – notably, pole attachment and wireless siting rules. The federal government should be helping these communities expand broadband access, not standing in the way.
4. **Improve digital equity and close the rural divide.** Broadband, both fixed and mobile, needs to be accessible and affordable to all Americans regardless of where they live, study, or work. A true commitment to this ideal is a key part of any successful strategy to expand access and will go a long way towards accomplishing our goal.

These steps are central to my work to expand rural broadband, which has been one of my primary focuses throughout my nearly six years in the Senate. I've introduced and cosponsored many bills on the subject, looking for any opportunity to close the digital divide between our urban and rural regions. We have advanced some important legislative successes, including the modernization of the federal E-rate program, a study to examine the impact of the "homework gap" on rural students, and a tenfold increase in broadband funding through the U.S. Department of Agriculture (USDA).

But while there has been progress, there is still much work to be done. I am a cosponsor of two bills that are included in the Senate's Farm Bill: one to modernize the USDA's Broadband Loan Program into a combination grant/loan program, and another to promote cooperation between the USDA and FCC in identifying gaps in broadband coverage on agricultural lands. Both of these can make a significant impact, helping make sure communities have not only the funds to make improvements, but also the accurate and up-

to-date information they need to maximize the investments.

Progress in Maine

I've also explored a number of other opportunities to improve rural broadband - because to tackle a challenge of this magnitude, we must engage stakeholders at every possible level to create change. I've worked with the USDA's Rural Development agency, under both Presidents Obama and Trump, to find solutions that work for rural people. I've also pursued options outside the federal government, including advocating for Maine communities in a national effort from the Post Road Foundation. Through these pilot projects, the Post Road Foundation and each community and utility partner will conduct a cost-benefit study on ways to deploy a smart fiber communications network to homes, businesses, and other institutions. Of the five communities selected by the Foundation, three came from my home state of Maine – not only because of a significant need, but because Maine's rural leaders know the importance of rural broadband and have made this a top priority.

In fact, some of our rural leaders are so committed to closing the digital divide, they are leading an effort on their own. There is no better example of these type of creative local efforts than in Maine, where several communities have stepped up to lead investments in broadband infrastructure. One unique and potentially fruitful model is underway in the rural towns of Calais and Baileyville. The two towns came together to form the Downeast Broadband Utility, a nonprofit that will be building a fiber network to connect every home and business in their communities. By taking the future of their broadband infrastructure into their own hands, the communities will be able to drastically increase connection speeds, and work to reverse a population decline currently affecting the towns – each of which lost approximately 5 percent of its residents from 2010 to 2016.

This problem that's facing Calais and Baileyville isn't unique – and, as their population decrease indicates, limited broadband service affects every piece of the community. By expanding access to broadband, we can improve the quality of life in rural communities, provide new opportunities for education and economic growth, improve the healthcare outcomes for rural residents through tools like telehealth, and much more. This increased quality of life will provide an economic boost for these communities and make them more desirable places to live for those who might otherwise live in a city – increasing the inventory of housing, and in turn, providing for more affordable housing options. It's all connected through the internet; we, as a nation, should make this a priority to help not just rural Americans, but all Americans.

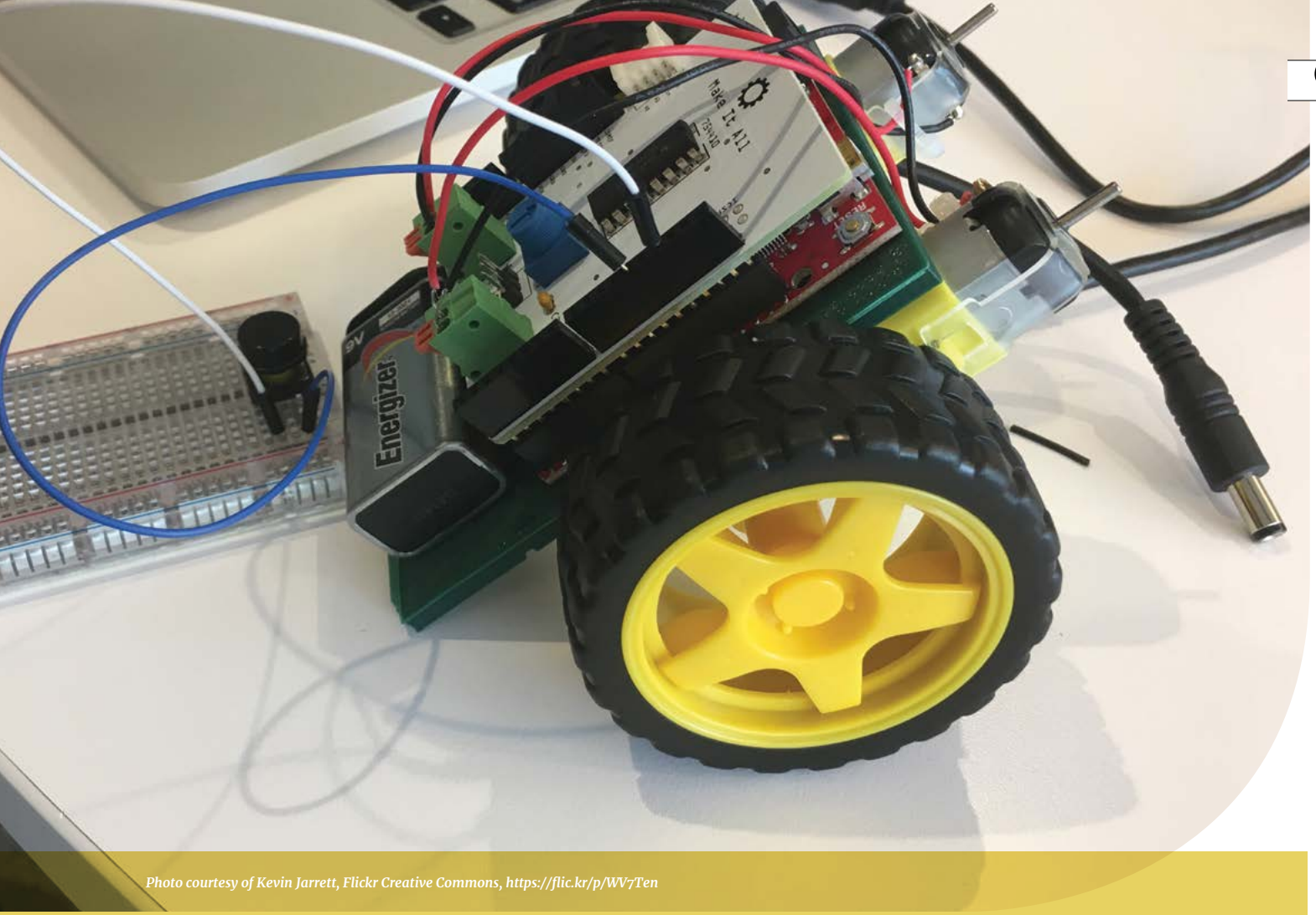
***Senator Angus King** represents the state of Maine and co-founded the Senate Broadband Caucus.*

Maine's rural leaders know the importance of rural broadband and have made this a top priority.

A Change in Mindset Opens a World of New Possibilities

By Dr. Roberto Gallardo

The Digital Age requires a new way to think about how we build communities.



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As the Digital Age roars along, the socioeconomic landscape is changing. Access to real-time information is drastically altering the way we communicate and behave. Digital strategies are transforming entire industries. While the ultimate outcome of this transition is unknown, the first critical step to make this transition as seamless as possible is to change our mindset. Rural housing can play a critical role in this transition.

Understanding the Digital Age

The Digital Age has four characteristics: exponential, digital, combinatorial, and disruptive. These concepts are discussed in more detail by Erik Brynjolfsson and Andrew McAfee in *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies* and by James McQuivey in *Digital Disruption: Unleashing the Next Wave of Innovation*.

Exponential refers to a growth behavior that begins with a relatively unchanging pattern and then, after some inflection point, accelerates quickly. Did you know you have more computational power in your smartphone, which is also connected to a worldwide network, than all of NASA did back in 1969? Electronic devices are increasingly powerful, cheaper, smaller, and even smarter. For the first time ever, we have the capacity to digitize, store, monitor, and analyze our physical world. Vast amounts of data are being generated and, when coupled with smarter, more powerful algorithms, our ability to combine those data and uncover new knowledge and patterns has increased significantly.

This combinatorial characteristic has drastically transformed the nature and rate of innovation. David Eagleman and Anthony Brandt point out in *The Runaway Species: How Human Creativity Remakes the World* that it took humanity about 7,000 years to go from the agricultural revolution to inventing mathematics. It took less than 500 years from the printing press to

landing on the moon, and less than ten years from the smartphone to landing a spacecraft on an asteroid. Just as anything mechanical was electrified 100 years ago, Kevin Kelly points out in his book *The Inevitable: Understanding the 12 Technological Forces That Will Shape our Future* that anything electrified can now be cognified (can have connectivity and some type of artificial intelligence added to it), unleashing entirely new services and products.

Because of the exponential, digital, and combinatorial characteristics, the Digital Age is experiencing disruptions, the fourth characteristic. These disruptions are transforming our socioeconomic landscape. For example, digital globalization, which is only 15 years old, now has a larger impact on the economy than trading goods, which is centuries old.

Change to a Digital Mindset

Understanding the characteristics of the Digital Age should provide a clearer picture of what the landscape could bring. Therefore, better mapping the landscape allows us to search for and act on things we overlooked before – in other words, to change our mindset.

The mindset in most communities and their leaders is calibrated for the Industrial Age. We need to recalibrate it to the Digital Age. For example, one of the main implications of the Digital Age is decentralization. The density and geographic proximity required in the Industrial Age are no longer necessary. Communities lacking resource and market density are suddenly freed of these constraints, forcing us to reevaluate existing economic development strategies. Consider a boutique I have worked with in rural Mississippi: more than half its sales take place on Instagram, where it has six times as many followers as there are residents in the town.

Another part of a digital mindset is recognizing that, because innovation is occurring at a breathtaking pace, current workforce development strategies must be changed to acknowledge that education is a lifelong and continuous process. The same rationale applies to our K-12 schools, which are designed mostly to prepare Industrial Age workers.

Some rural towns understand this and couple robotics with entrepreneurship curricula. Some have established partnerships with churches,

Photo courtesy of John Karakatsanis, Flickr Creative Commons, https://flic.kr/p/pUTqao

libraries, and other community anchor institutions to expose young kids to STEM concepts. Why not renovate downtown buildings and make them co-working or makerspace facilities? Rent them out to small business owners and entrepreneurs, and plan school trips so kids can experience firsthand the STEM concepts they are learning in school. Remember: if you get kids somewhere the parents will follow.

A digital mindset also recognizes that broadband is now as important as Industrial Age infrastructure such as electricity, roads, ports, and railroads.

Digital Inclusion

Now that we are thinking and acting digitally, the first order of business is to work towards digital inclusion. Digital inclusion is critical because its evil twin, digital exclusion, is a top threat to community economic development. Digital inclusion refers to making sure broadband infrastructure and digital devices are adequate, available, accessible, and affordable.

At the same time, digital inclusion invests in digital literacy and skills, ensuring digital applications are adopted and used to their full potential. Nothing is more gratifying in my work than teaching people how to get online and use the net safely. For instance, I have watched an older lady browse and find recipes online for the first time, leading her to subscribe to faster broadband at her home. I have also helped a 40-year-old rose business increase its sales greatly thanks to an online presence.

Last year, a Brooking Institution study concluded that two-thirds of new jobs created between 2010 and 2016 required medium to high digital skills. In other words, being digitally illiterate, today, automatically excludes an individual from two-thirds of job opportunities.

Digital inclusion efforts should not only improve digital infrastructure, but also maximize the applications' potential for quality-of-life and community economic development purposes by improving digital skills and literacy.

How Rural Housing Fits In

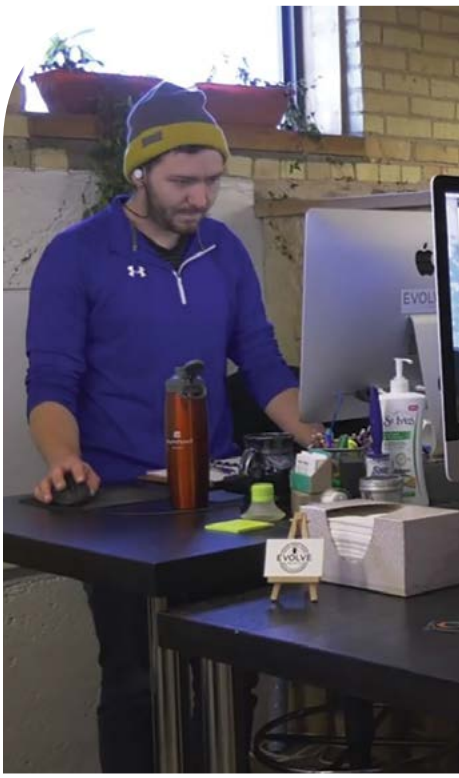
The main challenge today, from the infrastructure side of things, is to make the ROI math work for internet providers to expand and upgrade their broadband footprints in rural areas. A lack of density, among other factors, is one of the main reasons why providers do not receive the ROI they seek. The key is to cut the cost of the last mile connection, the final link between the main infrastructure and the end users, in this case homes.

Incorporating the installation of conduit – empty tubes through which later broadband wires can be run – in rural housing developments can reduce the cost to broadband providers. Of course, lease agreements (or other agreements) may be needed.

If these rural housing developments are designed to be smart and energy efficient, adequate broadband is necessary. Furthermore, these smart and energy efficient homes can serve as a digital ecosystem, or living lab, to improve the residents' digital skills. As residents improve their skills in order to manage their smart homes, they are encouraged to learn more digital skills.

The Digital Age is here. Disruption and change are all around us. Opportunities and challenges abound. With the appropriate mindset, the map and path become clearer. Rural housing properties, I believe, can play a critical role in helping make digital inclusion a reality.

***Roberto Gallardo** is Assistant Director of the Purdue Center for Regional Development, a Purdue Extension Community & Regional Economics Specialist, board member at the National Digital Inclusion Alliance, and a senior fellow at the Center for Rural Strategies. The views represented are those of the author, not his employer.*

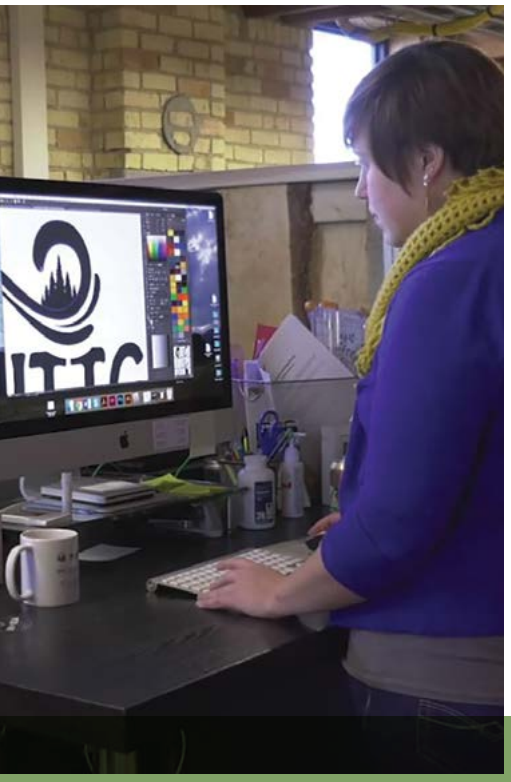


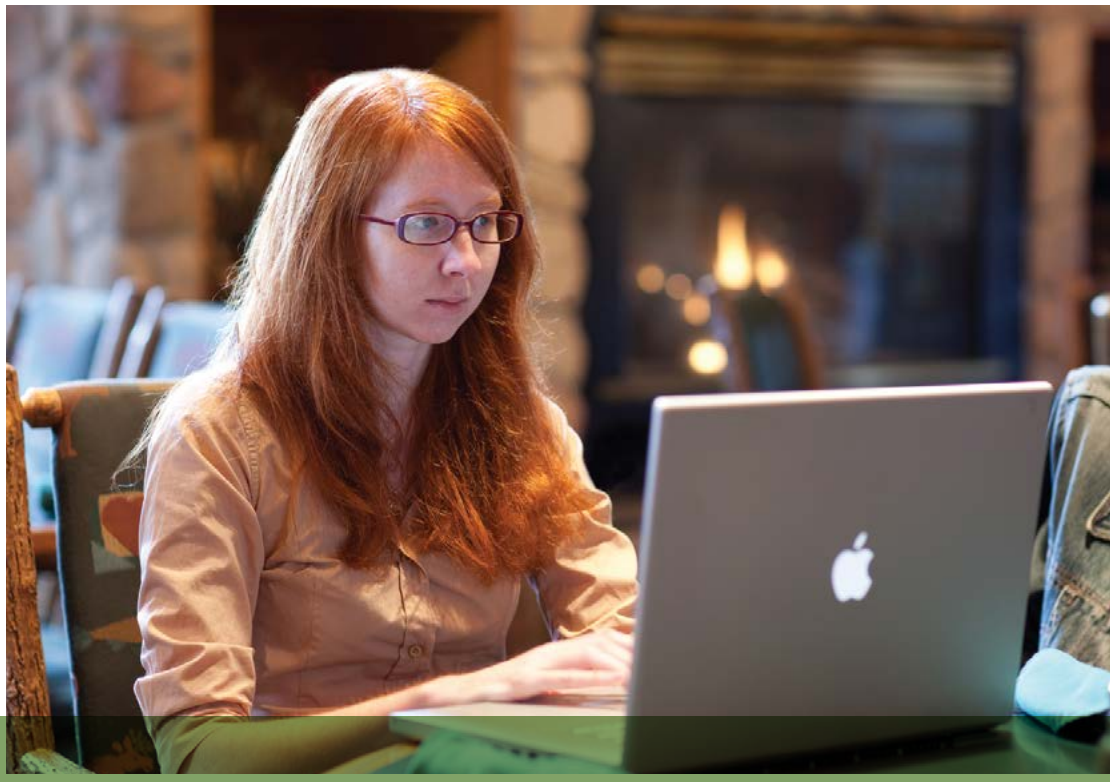
Broadband Makes Rural Communities Stronger

By Dr. Kathleen Annette

Rural communities in Minnesota understand the value of broadband and strive to widen access.

The FCC reports that, while 92 percent of Americans have access to broadband, in rural areas only 69 percent have access.





Opportunity should not be limited by ZIP code. When it comes to broadband access, every community, every person matters.

While broadband is now widely acknowledged to be the indispensable infrastructure of the 21st century, too many Americans still lack access. The FCC reports that, while 92 percent of Americans have access to broadband, in rural areas only 69 percent have access. More than ever before, rural communities need access to high-speed internet in order to survive and thrive.

Minnesota-based Blandin Foundation has been working toward strong rural communities for 77 years, one of only a handful of private foundations in the nation focused exclusively on rural communities. In 2003, Blandin Foundation saw that high-speed internet and the ability to use it would be key to community prosperity and began working toward border-to-border broadband through convening, technical assistance, grant-making, and advocacy. After these many years of partnership-building to expand broadband access and use, our experience tells us that, above all else, success comes down to community leadership.

And leadership can come from anywhere – engaged residents, government officials, businesses, and yes, housing developers!

Advantages of Broadband

As you might suspect, there are tremendous benefits to living in a home with broadband. Broadband empowers entrepreneurs and teleworkers to work from anywhere. It gives kids the access they need to complete homework. And it brings people remote access to healthcare in their own homes. In other words, you can earn money, your kids can learn (and earn an online degree!), and you can even live in your home longer. These are benefits that impact the health of any rural community.

According to a formula developed by the Ohio State University, a household with broadband

enjoys an annual increased economic benefit of $1,850. Little wonder, then, that a 2016 survey from the Fiber Broadband Association (formerly Fiber to the Home Council) found that 91 percent of homebuyers said quality broadband was "very important" in choosing a community in which to live – second only to "safe streets." The same group found that home value for a house with access to fiber (gold-standard broadband) may increase up to 3.1 percent.

Blandin Foundation recently released a report that used these formulas and personal interviews to explore the community's return on public investment in broadband in five rural counties in Minnesota.

Beltrami County, one of the five counties studied, saw a population increase of 3.7 percent between 2010 and 2016, while Minnesota counties of similar makeup saw a collective decline in population. The median income for the county was $44,757, compared to an average of $40,700 for similar counties.

Blandin Foundation's study found that residents in three counties will experience annual collective economic benefits that will surpass public/community investment in one year. That's money in the pockets of rural people that can be invested back into their community.

- Other communities studied also show signs of significant progress through broadband investment: Crow Wing County is surrounded by lakes. It's a destination people dream about moving to when they retire. It turns out many people are cutting their wait short because of broadband. Locals report that seasonal families are becoming full-year residents now that they can work from home.
- Lake County is in northern Minnesota on the shores of Lake Superior. Historically, those who visited or moved to Lake County wanted lake property, but people now have two items on their list – lakeshore and/or broadband. Broadband is breathing new value into many homes. The community can't make more lakeshore, but it can expand broadband – and it is. In fact, local realtors are finding that, lakeshore or not, sellers without broadband are having a tough time attracting buyers.
- Sibley County is a farming area. The community worked hard to get broadband to the area – "fiber to the farm," they call it. They created a cooperative (RS Fiber) to do it. Farmers are able to take advantage of a precision agriculture approach to stay competitive and local developers are seeing new families move to the area. Neighborhoods with fiber are selling – often with a simple announcement on Craigslist, says one community mayor.

Stories like these continue to roll in from all across rural Minnesota. For rural leaders, broadband access and use is not only a nice thing to have – it's essential to their communities' vitality.

Ingredients for Success

How did these communities go about designing and claiming their futures?

They formed strong partnerships. Some of the communities were served by cooperatives. By design, coops can make infrastructure investments that benefit their members and members' communities, even when the returns on that investment may not be realized in the short term. Communities served with for-profit providers had to work harder to make a business case for investment or, when that failed, develop new entities to take on the challenge. Often, outside funding (federal or state grants and loans) was an impetus to get the conversation going.

They planned for the future. Communities had local teams – economic and community developers, school administrators, housing advocates, healthcare workers – that planned together to set ambitious goals that would meet their needs in the future.

They invested. Partnerships are strengthened when everyone invests in the project with their time and money. In rural areas, it can be difficult to make a business case to bring fiber to areas with lower population density, greater distances between locations and difficult terrain. When it's done, though, communities benefit. In fact,

a research report commissioned by Blandin Foundation in 2014 found that, in rural areas, there is a $10 return on investment for every $1 spent on broadband expansion.

They got people using broadband. Successful communities provided opportunities for local businesses to learn to better use technology, they helped the school create a plan for technology in and out of the classroom, and they got computers for kids in need. They assessed the community's resources and made the most of what they had. They helped individuals and whole communities learn and apply their newly honed technology skills.

Believing in Possibilities

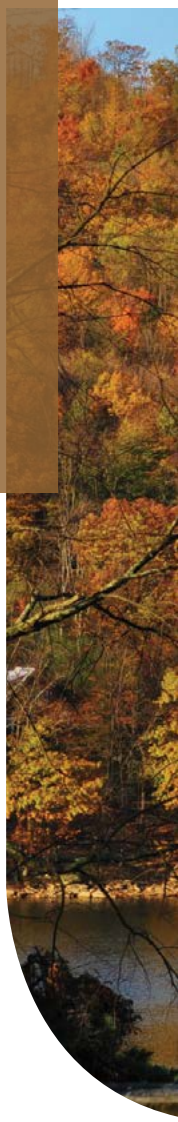
Homes need to be ready for connection if communities and residents are to realize these benefits of broadband. Even homes in remote, rural places need to be built with the future in mind – and it's going to take planning and partnership to do it.

Broadband is no longer a luxury. Communities that have it show signs of growth. Those that don't are working feverishly to get it, because they know that without it they cannot retain and attract new residents and businesses, offer 21st century education and healthcare, or increase the value of their homes.

Blandin Foundation has partnered with all types of communities over the past 77 years. While each is unique in its dreams for the future, one thing remains constant – in order for a community to change, it has to have hope.

Hope is believing that a different future is possible – for ourselves and our communities. And hope springs from many sources. Hope can start with you.

Dr. Kathleen Annette *is President and CEO at the Blandin Foundation.*



Rural Maryland County Finds Multiple Ways to Expand Broadband

By Cheryl DeBerry

Garrett County becomes a model for connecting its residents to the internet.

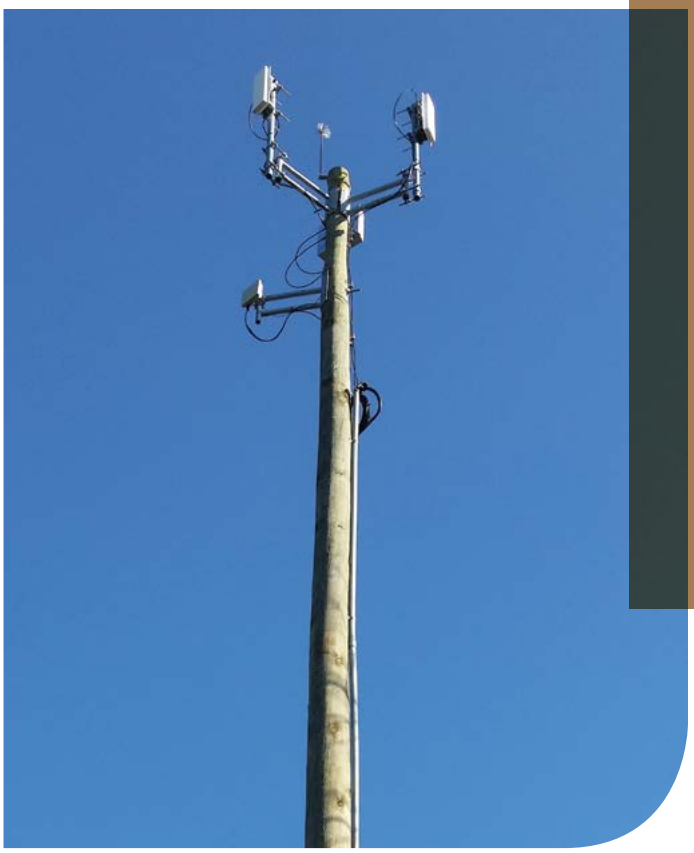
Connecting our community through rural broadband has been one of the most challenging projects we have tackled.

Photo courtesy of William Fox, Flickr Creative Commons, https://flic.kr/p/gWhkhW

Rural residents and businesses in Garrett County, MD were tired of waiting for broadband access. It's just not profitable for private industry to extend broadband to extremely rural areas. Nobody was doing it for us, so we decided to figure it out ourselves. When we began seriously looking at the situation in 2011, most of the larger municipalities in the county had access to broadband, but vast rural swaths did not. Our years of effort have been worthwhile. We have seen great success and we are still working to reach more of our residents and businesses.

Garrett County is the westernmost county in Appalachian Maryland, bordering both West Virginia and Pennsylvania. It is the second largest county in the state by area and has about 30,000 residents, roughly 46 people per square mile on average, though the rural parts of the county average about 14 people per square mile. The county has many natural amenities like forested state parks, mountains with Maryland's only ski resort, and Maryland's largest fresh water lake, Deep Creek Lake. While the area near the lake is an affluent tourist and second home destination, the rest of the county is more typical of rural areas with low population density. Sparse settlement patterns add to geographic challenges like rough mountains, rocky soils, and trees, making broadband expansion difficult here.

The Garrett County Department of Economic Development focuses on a variety of fiscal, community, and infrastructure initiatives, one of which is internet access. The county has worked for years to connect our critical county infrastructure to the internet, and those efforts



continue. The county has started working more broadly on broadband issues, targeting business, organization, and residential access. Broadband internet is necessary to attract both tourists and new residents to the county and to make sure county residents and businesses can keep up with modern life. Our rural constituents deserve to have the same amenities offered in urban areas.

County residents access the internet in a variety of ways, including mobile hotspot, dialup, satellite, or, in the more populated areas, cable/fiber optic. These options qualify as broadband if the internet speed is at least 25 Mbps downstream and 3 Mbps upstream, according to the Federal Communications Commission.

We hired CRC Technology and Energy to conduct a feasibility study in 2011-12 to determine how to increase internet access in our most rural areas.

TV White Space

The study concluded that a public-private partnership using fixed wireless technology, specifically TV white space (TVWS), would be the best solution. TVWS is the unused bandwidth between TV broadcast channels that can be converted to wireless broadband internet. TVWS is the best solution for the rugged, remote areas of Garrett County because it propagates over long distances and penetrates environmental barriers. Because the county had previously worked with the state to extend fiber optic internet to anchor institutions, like schools, the hospital, and county facilities, we wanted to leverage that and other existing infrastructure to serve our fixed wireless project.

Appalachian Regional Commission grant money, which was matched with county dollars, was secured to install equipment and infrastructure to reach three targeted areas of the county. The county hired a private partner, Declaration Networks Group (DNG), to be the network operator/internet service provider (ISP) that would design the network, purchase the equipment, deploy it, and provide service. As a safeguard, the county government owns a major part of the infrastructure so that if needed, the county can find another private partner.

Since our rural broadband

launch, nearly 500 homes and businesses are receiving service with TVWS and other unlicensed spectrum. But, like many things, the process took longer than we expected. It took four years to find a private partner, settle on the legal agreements, work on design, and negotiate use of local and state assets. We deployed with our first active customers just over two years ago. Many jurisdictions who are interested in following our model for broadband expansion contact us to find out how our project was developed, and we always remind them to look at what assets they have and what their needs are, to tailor a solution for their specific situation. Now that we are more experienced and have developed the necessary infrastructure and processes, we anticipate we will be able to more quickly serve the 700 people on our waiting list.

We are trying to be innovative when reaching parts of our county beyond our targeted TVWS areas. We helped bring fixed wireless technology to one of our staple businesses, an ecotourism company that has cabins and a restaurant situated in the middle of the state forest. They had been using satellite service, which was working adequately until the system they used for reservations announced it was moving online; the satellite bandwidth wouldn't be able to keep up. The company came to us asking for help to increase their internet capability, so we worked with our private partner to install a small tower and put up an antenna so that they could connect using the fixed wireless technology. The county financed the tower and expedited the permitting process to be able to get it installed quickly.

Wired Internet

We are also working with our cable/fiber providers to expand their service areas. Usually, cable/fiber companies have already deployed lines where it is profitable for them, so encouraging them to extend beyond their boundaries takes some out-of-the-box thinking. In some areas, a short extension is all that is needed to reach the next small community. After learning that the most expensive part of deploying cable is trenching and laying conduit for the lines to run along roads, the commissioners decided that we could choose some strategic, targeted areas where our public works crews trench along county road rights-of-ways and they could lay the conduit for private providers to use.

We decided to run a pilot project with Comcast to reach a small community where one business had already left because they couldn't get fast enough internet. As a way to retain the other few small businesses in the community, and to serve the dozen homes there, county crews trenched and laid conduit a half mile along the county road, so Comcast could pull the cable. Comcast was able to attach the cable to poles at the end of the conduit, and extended internet access to that small community plus an additional area further away, with about 40 total passings. We are currently working with Comcast to assess about six additional areas that could potentially be connected using this model.

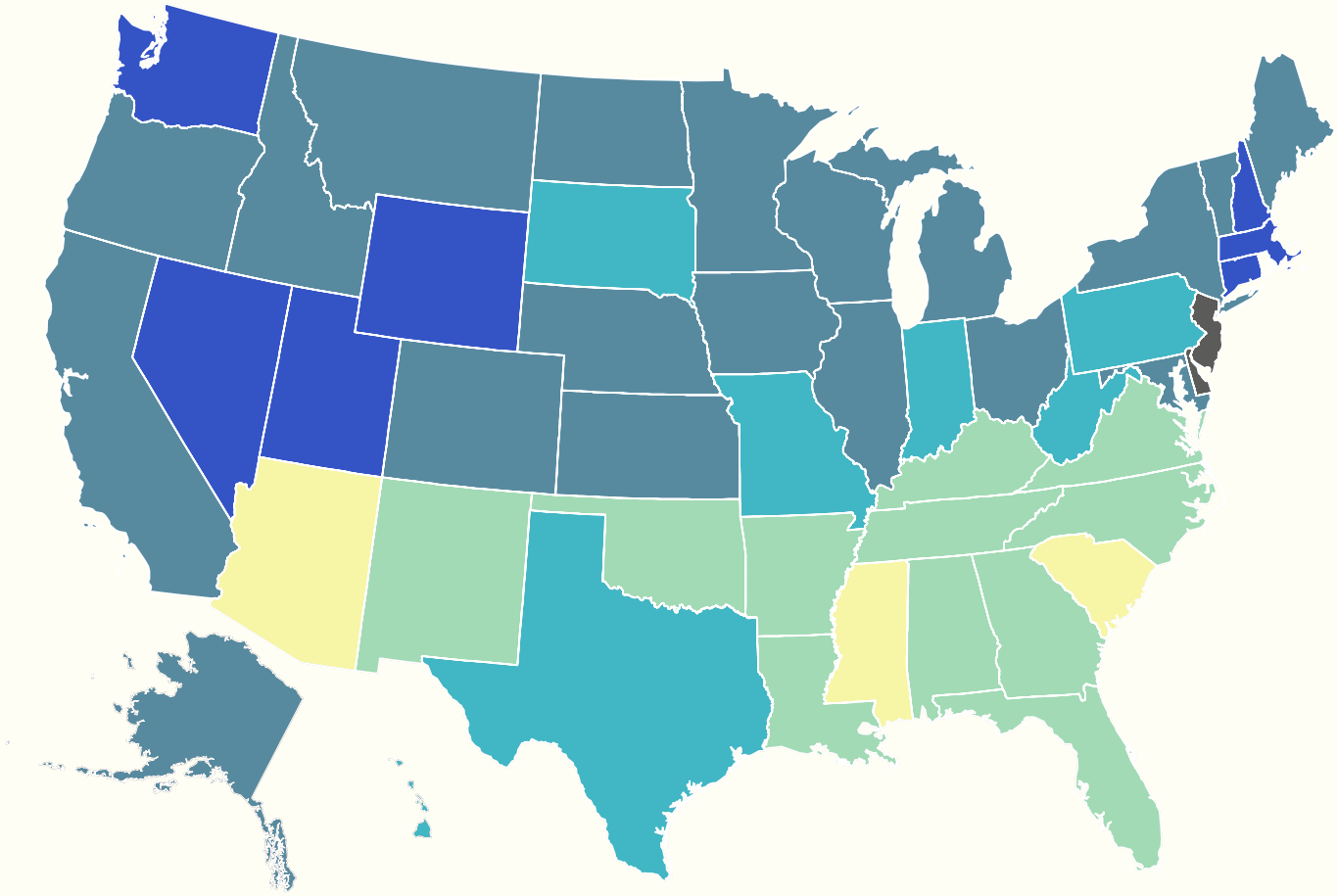
Once residents gain high speed internet access for the first time, an educational component is needed as well. DNG partnered with our local Garrett County Community Action Committee to bring broadband access to some workforce housing projects; the next step is teaching residents how to use the internet and how it can be useful in their daily lives. For instance, their children may need the internet for completing homework, seniors can take advantage of telemedicine, and families can use e-commerce.

Connecting our community through rural broadband has been one of the most challenging projects we have tackled. There is no "one size fits all" solution to any project. We are attacking the issue using both fixed wireless technology and expanding cable providers' service areas. While rural broadband expansion sounds like a lofty goal, we know the importance and value of connecting our community to the internet and keep striving to reach that goal.

***Cheryl DeBerry** is the Natural Resources Business Specialist at the Garrett County Department of Economic Development in Maryland.*

THE DIGITAL DIVIDE

RURAL HOUSEHOLDS WITH BROADBAND SUBSCRIPTIONS



Source: Housing Assistance Council tabulations of American Community Survey 2016- 1 year variable B28002. Rural refers to outside OMB-designated metropolitan areas.

HOUSEHOLDS WITH BROADBAND SUBSCRIPTIONS

Source: Housing Assistance Council tabulations of American Community Survey 2016 - 1 year.

83% METROPOLITAN

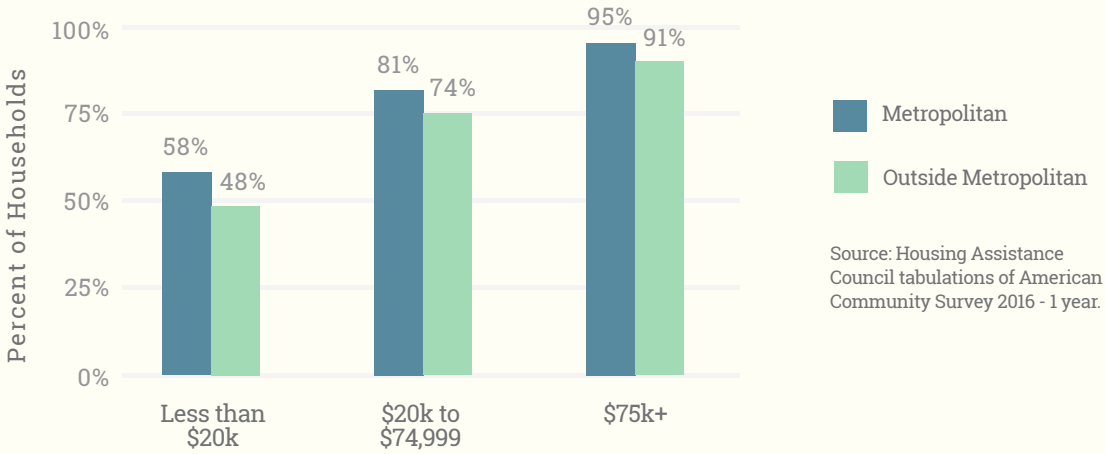
VS

73% OUTSIDE METROPOLITAN

IN RURAL AMERICA

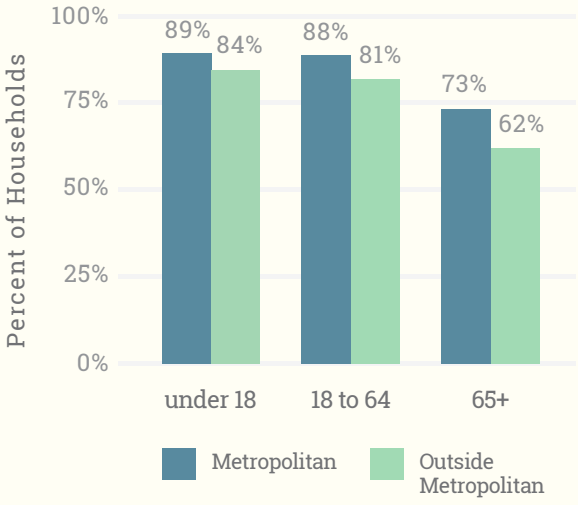
BROADBAND SUBSCRIPTIONS

BY INCOME



Source: Housing Assistance Council tabulations of American Community Survey 2016 - 1 year.

BY AGE



Source: Housing Assistance Council tabulations of American Community Survey 2016 - 1 year.

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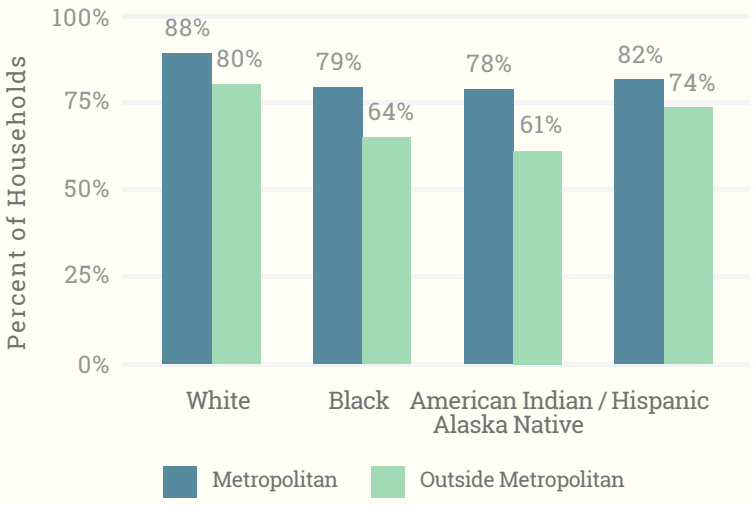

Source: Housing Assistance Council tabulations of American Community Survey 2016 - 1 year.

Native Americans Create a Connected Future

By Katie Watson

Tribal members help themselves by building infrastructure and serving their communities with tribally run internet access.

Rural connectivity in the United States has long lagged behind suburban and urban areas. With smaller, less dense populations and difficult, expansive terrain, incumbent internet service providers have often argued that there is not a strong enough business case for deploying high-speed internet to these areas.

The Federal Communication Commission (FCC) estimated in its 2016 Broadband Progress Report that nearly 40 percent of rural areas lack broadband access, defined as 25 Mbps upload and 3 Mbps download speeds. This problem is felt even more acutely in rural tribal communities. Nearly 70 percent of rural tribal areas lack access to broadband internet. Compounding the issue, in the 30 percent of tribal areas that can reach broadband, the cost of service is often exorbitantly higher than in urban areas.

Tribal communities know the internet has become a vital part of modern life and without it they cannot access the same educational, economic, health, and entertainment resources upon which so many now rely. This is particularly problematic given that tribal nations have had difficulty reaching those resources since long before the internet became ubiquitous in the United States. Tribal nations often have a harder time accessing quality, well-funded schools, hospitals, and libraries than other areas. The internet can serve as a gateway to these and other vital resources, allowing community members to utilize cutting edge information and opportunities.

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Community leaders in tribal nations are not content to wait until private sector service providers decide there is enough incentive to deploy their networks in tribal areas. Instead, they are taking matters into their own hands, building infrastructure and serving their communities with tribal-run internet access.

Community Networks for Tribal Areas

Valerie Fast Horse, the Director of IT for the Coeur D'Alene Tribe in Idaho, has been working to ensure her community has access to the internet since the early 2000s. "Back in 1999, the internet was new and everyone was getting excited about dial up, but we didn't have a local service provider, so we had to dial long distance for dial up," she said. "It was really running peoples' phone bills up. It was a horrible situation."

Fast Horse and her colleagues in the Coeur D'Alene tribal government hoped that Verizon, the only phone provider in the area, would upgrade its local office so that internet access could be considered local instead of long distance. When it didn't, Fast Horse began reaching out to other service providers to see if they would come service the town. "No one wanted to build it," she remembered recently. "It was just too hard."

As a result, the community decided to create its own service provider, Red-Spectrum, and apply for a U.S. Department of Agriculture Rural Utilities Service (RUS) Community Connect Grant. The company was awarded nearly $3 million to build its own internet service infrastructure and

went from 28.8 Kbps with Verizon's network to 1.5 Mbps with its own network. Red-Spectrum charged the same amount for service as Verizon but offered drastically faster speeds. "We were like local heroes!" Fast Horse said.

As the content online became more robust and demanded more bandwidth, Red-Spectrum continued to apply for, and win, grants, including one for a $10 million fiber-to-the-home project. Today, the company offers a fiber connection to a third of its subscribers and wireless connection to the other two thirds, and it is still building out.

Just south of the Coeur D'Alene nation, the Nez Perce Tribe took a similar approach to connectivity. Danae Wilson, manager of the Nez Perce Tribe's IT department, realized the impact the internet could have on her community in the early 2000s. She applied for, and was awarded, a Broadband Technology Opportunities Program (BTOP) grant through the National Telecommunications and Information Administration (NTIA). With these funds, the community created Nez Perce Tribe Wireless and installed a ring of microwave towers around the reservation.

Nez Perce Tribe Wireless applied for several more grants, including through the Universal Service Program for Schools and Libraries, known as E-rate, which has allowed it to create internet access points at the local school and clinic. Beginning in 2010, the tribe began running fiber to these locations and the local library, which now offers hot spots to residents. Since then, it has also begun offering service to homes and businesses, though the speeds are often limited by what the microwave towers can emit.

The Benefits of Connectivity

Internet access can open doors and create new possibilities for communities. One of the biggest changes for the Coeur D'Alene Tribe has been the education opportunities the internet offers. For most high school graduates in the community, the only way to get further education was to leave the community for college. Now, with high speed connections, students are able to participate in distance learning classes online. This lifts a huge financial burden from the students, who previously had to pay not only for tuition but also room and board if they wanted to go to college, and also offers a way to keep the community intact.

Some benefits of connectivity took more time to manifest. "The changes to the community have come so gradually that it's hard to say what sticks out the most. As everyone becomes more reliant on the internet for banking, resumes, and applying for jobs online, it feels like everything has changed," Fast Horse said. "One of the biggest local businesses, Coeur D'Alene Tribal Casino, won't even accept applications on paper anymore."

That is part of the reason Red-Spectrum offers 40 community internet stations at its Technology Center. Residents are able to come to the Center and use the computers and Wi-Fi there for free. With access came a great need for education on how to use the internet. Red-Spectrum previously offered digital literacy classes at the Center, but the small staff of eight was overwhelmed by requests and has temporarily stopped offering the course.

Several tribally owned service providers noted that the economic benefits go beyond additional profits for local business. By keeping the business within tribal limits, they are also keeping the tribes' money in the community. Fast Horse said, "We're keeping the money here. All the customers here were giving their money to Verizon, and Verizon doesn't even have a presence here. Everything was going off the reservation." Now, Red-Spectrum has created jobs in the community and the payment for service goes back into the community.

Facing Challenges

Native Americans in the United States have faced extreme challenges for generations, and internet connectivity is no exception. But, Wilson noted, "tribes are really good at using all of their resources to expand and grow and make changes." Tribal leaders like Fast Horse and Wilson are rallying support for tribal connectivity at the local, state, and national levels.

For the Nez Perce Tribe, one of the most frustrating barriers to providing high-speed internet access to the whole community is the way in which grants are awarded. First, the tribal

service provider, Nez Perce Tribe Wireless, must ensure that its census blocks are not considered serviced by another provider. "In rural areas like ours, the census blocks are massive and if one piece of a block is considered serviced then the whole block is out of the running for RUS funding," Wilson said. This causes areas that are largely unserved to be passed over for much needed connectivity funding.

Additionally, in areas that are considered unserved, funding can often be applied only to a single source. For example, if the Department of Education provides funding for a school to get internet access, that money must be used only for a build to the school. Then, if the Department of Housing and Urban Development (HUD) provides funding for a public housing property next to the school, the funds cannot be used to connect the housing to the school, but must instead build from the same first mile point to the public housing unit.

The siloed nature of government agencies is holding back the potential of the funding. "I've spoken with the Department of Education, HUD, NTIA, and other agencies that only offer single points of access that can't be used for anything but their original purpose," Wilson said. "I told them about all the ways their funds and services could be used together to have a bigger impact. Right now, it's just missing the mark."

Wilson noted that if the Nez Perce Tribe were able to use the existing networks in multi-purpose ways, they would be able to expand their network throughout the community and dramatically increase speeds.

For the Coeur D'Alene Tribe, a major challenge stems from their nation status. In the United States, Native American reserves are sovereign entities whose land is held by a trust. While sovereignty can be an excellent means of preserving tribal autonomy and self-empowerment, it can also create barriers for communities. The land is often less developed than surrounding areas, making it necessary to build a significant amount of infrastructure in order for internet service to be deployed. Trust land also cannot be used as collateral, which makes it more difficult to apply for federal funding for connectivity projects.

Connect America Funds (CAF) offer connectivity funds for high-cost and rural areas. As a part of the application process, a potential grantee must submit a letter of credit from a banking institution. However, "most tribes can't get a letter because we live on trust land. That means we can't pledge the land as collateral," Fast Horse said. "This disqualified tribes from applying for the grant."

Fortunately, this letter is no longer a barrier as Fast Horse and others lobbied CAF, which dropped the requirement for a letter of credit.

What's Next

Red-Spectrum hopes to continue expanding its service area in the Coeur D'Alene Tribal region and to educate those in existing service areas about the connectivity options at their disposal. Fast Horse also hopes to use the internet as a means to preserve traditional language and culture. "Our language department records our language and saves it to CDs," she said. "Now, with internet access, they don't have to do that. They can upload it, save it to the cloud, and stream it."

Similarly, Wilson hopes that her advocacy in Washington, DC will pay off and the current single point funding programs will allow for their grants and networks to be used in more and bigger ways. This would then allow Nez Perce Tribe Wireless to connect a much larger portion of the community with little new investment.

Through their combined efforts, and the efforts of many others, tribal communities are making great strides towards a connected future.

***Katie Watson** is a Policy Advisor, North America at the Internet Society.*

Rural Broadband Expansion Creates Opportunities for All

Rural Voices sat down with Brendan Carr, Commissioner at the Federal Communications Commission, to learn more about the importance of broadband in rural areas, and how the FCC is working to provide access for more Americans no matter where they live.

RV: Please introduce yourself to our audience and tell them a little bit about what brought you to the FCC.

Commissioner Brendan Carr: I am one of the commissioners at the FCC. I was nominated by the President and confirmed by the Senate in 2017. Prior to that I had joined the Commission as a staffer in 2012, and then after a year and a half moved over to work for Commissioner Ajit Pai as his lead adviser for wireless, public safety, and international issues. Since being confirmed I've spent a lot of my time focused on telehealth, in part because my mother was a nurse, and in part because I've seen the role that it can play in bringing affordable, high quality care to rural areas.

RV: Can you tell us a little more about what you're seeing with telehealth?

BC: In July this year I had a chance to travel to the Mississippi Delta and visit with patients who are benefiting from telehealth. That's where I met Ms. Annie, a patient of the North Sunflower Medical Center in Ruleville, MS. She has diabetes and signed up for the hospital's remote patient monitoring pilot program. She showed me how she uses her iPad and Bluetooth-enabled blood glucose monitors to track and control her own care. The tablet chimes every morning as a reminder. Ms. Annie then pricks her finger and her blood sugar test result is displayed on screen. Based on that, the app suggests appropriate actions ranging from a particular food or exercise to watching a relevant video. If she forgets or

does not enter her numbers one day, Ms. Annie will get a phone call from a nurse. With this technology, Ms. Annie's glucose levels have gone down and she says she's never felt better.

From a larger perspective, if this program were implemented statewide in Mississippi, for every $1 the state put into remote patient monitoring, we would see a $3-$4 savings on Medicare or Medicaid spending. If only 20 percent of the state's diabetic population signed up for this program, it would translate to a $189 million savings.

I've proposed the FCC help support this trend in telehealth by establishing a $100 million Connected Care Pilot Program, to help make sure that low-income communities get access to high-quality health care services through telehealth providers.

RV: HAC works with community housing developers. How can we best get them to work together with providers on the ground to deploy broadband?

BC: The commission is focused on getting more broadband to the communities. One of the exciting parts of 5G is the ability to bring fiber-like speed to housing. For example, maybe you have one high speed service in the development and you want more competition. So 5G has the potential to provide wireless service at fiber speed in those communities.

RV: How could rural communities keep the costs down for 5G deployment? Especially persistently poor communities?

BC: By bringing in new technologies we are going to be introducing more competition which will help drive down prices. Another way is by using a $10 billion per year fund called the Universal Service Program. A portion of that program is called Lifeline, which is used to help cover the costs of home broadband or 4G service for low-income subscribers. That has been a very popular program.

RV: You've been touring communities across the country; tell me a little bit more about that.

BC: We went to places like Moline, MI, a rural agriculture/farming community, and talked to people about the challenges of getting broadband connectivity and about the affordability barrier. We take that information back to the commission and see where we can help from a regulatory perspective to drive more competition and provide more broadband deployment to those communities.

RV: Would you be willing to include a community housing development organization on a trip like that, so that you can see the amazing work they do and find out how to increase broadband access there?

BC: We are always happy to meet with anyone when we hit the road. We meet with a lot of local officials, county commissioners, local mayors, and we speak at different events. And we are always happy to plug in with different folks and see what we can learn and how we can provide different information.

RV: Beyond 5G, what other technologies do you see impacting broadband deployment? Will it be one solution?

BC: We are going to see a mix of technologies that are going to help close the digital divide. One thing we are seeing is a new round of what are called "low earth orbit satellites" that are in the process of being developed and hopefully launched soon. They could bring satellite-based (higher speed, lower latency) broadband.

We are also seeing fixed wireless being used. I have toured some of these wireless internet service providers and climbed to the top of a water tower with one in Parker, SD. They had put their facility on the top of a water tower and were using it to shoot fixed broadband to some of the farms in the area.

TV white space is another avenue. It uses the unused channels on the TV spectrum and can propagate long distances and through building materials to reach remote locations. Microsoft has been trying to use TV white space to provide broadband in rural areas. I think economics and terrain will determine which technology is used in a particular county. It is going to be a mix that ultimately gets everyone across the finish line.

RV: How important is it that organizations like local community developers are partnering with local broadband providers when creating community plans?

BC: It is critical. We have to be thinking about broadband from day one. Whether it is for telehealth or for access to educational opportunities, broadband is key. There are things we can do on the front end that will be more cost effective. For instance, there is some legislation in conference that has been worked up called "Dig Once." When you are putting in a new road, you also put in conduit, an empty pipe that you can pull fiber through. Once conduit is in place, it becomes a lot less expensive to put in fiber. This can also be done at the outset of a housing project. Thinking of broadband on the front end will result in more, cheaper, and better internet deployment on the back end.

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What is Washington, DC, Doing About the Rural Digital Divide?

By Allie Bohm

Actions underway at the FCC and in Congress could improve or impede rural broadband access.

At the end of May, I traveled to the Rural Assembly in Durham, NC, to talk about rural broadband access. Throughout the conference, participants told stories of building community in their corners of the country. When I said I was there to talk about rural broadband access, I got mixed replies: "Oh, that's the one issue I really don't understand anything about." "Broadband access? Oh, honey, we're still working on getting reliable telephone service."

Liz Shaw, a phenomenal activist from Appalachian Ohio and one of the "Firestarter" (or mini-keynote) speakers at the conference, told me about telephone wires in her community lying exposed in ditches after it rained and being

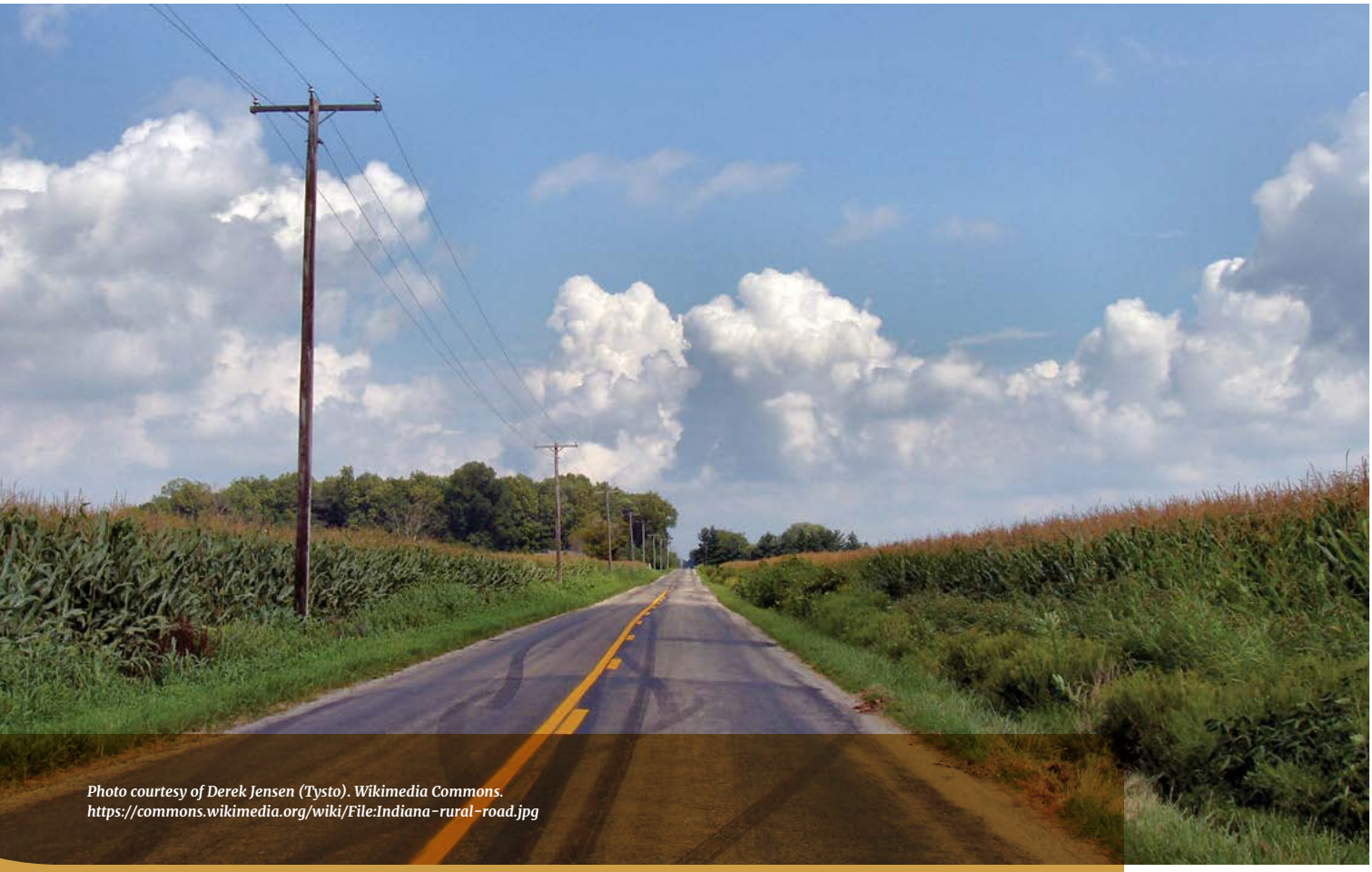


Photo courtesy of Derek Jensen (Tysto). Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Indiana-rural-road.jpg

inadvertently torn up by farm equipment. She talked of a youth soccer coach who died of a heart attack on the field in front of his team, because all the landline phones in the area were out and no one could get a cell signal. As a Firestarter, she told the entire Rural Assembly about bringing then-Federal Communications Commissioner Mignon Clyburn to Appalachia to hear about the connectivity woes in her community.

Rural Broadband in Our Sights

Liz was not the only one at the Rural Assembly interested in broadband access. When it came time for my panel, titled *Rural Broadband in Our Sights*, my co-presenters and I faced a packed room. Some of our audience members were experts, intimately involved in bringing broadband internet to their communities. Others were laypeople, who did not work on broadband issues professionally, but who understood, instinctively, that reliable internet access is integral to the community development, economic, educational, healthcare, activist, or other goals they are pursuing.

I shared the podium with a representative from a local government in Appalachian Maryland, the CEO of a small, local internet service provider in Wilkesboro, NC, and a community advocate from Minneapolis. They talked about the innovative solutions they employ to bring high speed internet to their communities, from utilizing TV white space to creating broadband co-ops to deploying municipal broadband. Our goal was to present conference participants with options for bringing reliable broadband to their communities and to demonstrate that connectivity is possible in rural areas. We also sought to acknowledge that bringing high speed internet to remote communities will require an all of the above approach, with each community selecting the technologies and models best suited to their unique environment.

As a policy counsel at the Washington, DC-based nonprofit, Public Knowledge, I focused my presentation on the federal policy overlay –

Photo courtesy of Federal Communications Commission. IMG_5300. United States government work. https://flic.kr/p/8jWsdC

how the laws and regulations considered and enacted in Washington affect rural broadband deployment.

What is Washington doing to help promote quality, affordable broadband in rural communities? The short answer is not enough. Whether in Congress or at the Federal Communications Commission (FCC), policymakers are busy undermining policies that support rural Americans, or they are letting good ideas gather dust on the shelf.

Recent FCC Actions

Over at the FCC, there are at least three recent proceedings that will affect rural broadband deployment. The first is the transition from the legacy copper telephone networks to next generation infrastructure. Although this transition could have been an upgrade to broadband for everyone, the FCC has essentially allowed telephone companies to decide which communities get the best quality connections and which communities (read: small and rural communities) get lower quality connections.

The FCC's recent vote also eliminated requirements that consumers be notified prior to the retirement of the legacy copper telephone networks in their areas, as well as requirements that, once the old systems are retired, the new systems work with existing devices, like credit card machines, fax machines, school fire alarms, and medical devices. This means that consumers may receive so-called "upgraded" infrastructure (accompanied by "upgraded" prices), but may not receive the same level of service or compatibility as they had before. This risk is particularly high in rural areas where deployment of reliable, high speed broadband is hard enough to begin with.

Second, the FCC is in the middle of a rulemaking that will determine whether rural communities continue to be left behind with regards to high-speed mobile broadband. During the Obama administration, the FCC said that it would license spectrum in the 3.5 GHz band in small geographic areas for three-year terms. This would have made it easier for the small providers that are more likely to serve rural areas to acquire spectrum, because the larger the geographic area, the higher the area's price at auction – smaller providers are likely to be priced out of large geographic areas. The companies most likely to win those auctions are the same national companies that neglect to serve rural communities.

The Obama-era rules on license term length would also have benefited rural consumers, because a three-year license term gives a provider three years to set up service and, if that provider fails to do so, it provides a timely opportunity for another provider to win the spectrum and commence service. By contrast, under the old-world order ten-year licenses, large telecommunications carriers would win spectrum at auction and then fail to develop it and deliver service, waiting until they felt they could get a favorable return on investment; that time never came, because, due to rugged terrain and fewer possible customers, it is very expensive to deploy broadband in rural areas. Unfortunately, the FCC has agreed to re-open these rules and appears likely to license larger geographic areas for longer time periods.

The third proceeding nominally pending at the FCC has to do with TV white spaces, the empty spaces between television channels (and vacant television channels). There is a lot of white space spectrum in rural areas, and it has the perfect characteristics to send a lot of data over long distances, which makes it ideal for rural communities. To help broadband providers feel more comfortable leveraging TV white spaces, the FCC needs to issue a rule guaranteeing that TV white spaces can be used for broadband internet. The FCC proposed, and accepted public comment on, such a rule in 2014. But it has not yet finalized the rule.

Legislation Introduced in Congress

If the rural broadband proposals look bleak at the FCC, they are a little rosier in Congress – although about as likely to move as the 2014 TV white spaces rule. Representative Anna Eshoo (D-CA) has introduced three bills that would make it easier to deploy broadband internet in remote areas. The first, affectionately called "Climb Once" and co-sponsored by Rep. David McKinley (R-WV), would allow any utility crew to move the existing wires, often for TV or telephone, on a utility pole in order to make room for a new broadband provider. Currently, a new provider who wishes to hang cables has to wait for each utility company to send a separate crew to move its wires to make space for the new cables. As expected, this process can be drawn out.

Reps. Eshoo and McKinley's second bill, nicknamed "Dig Once," would require that, whenever there is federally funded construction of a road, conduit for fiber must be laid at the time of construction. Conduit is the piping through which fiber internet can be run. Laying it at the time of road construction would mean that broadband providers and communities would not need to tear up and repave roads when a new broadband project comes to an area. Finally, Eshoo's Community Broadband Act would make it easier for communities to build municipal broadband networks.

But the rural broadband legislative proposal most likely to move is in the Senate Farm Bill. It would increase the minimum speeds rural broadband providers must meet in order to receive U.S. Department of Agriculture loans and grants. This would ensure that when broadband is deployed in rural areas it is, in fact, high speed internet.

The other promising rural broadband legislative proposal is the Congressional Review Act (CRA) resolution to restore net neutrality. Net neutrality is a rural broadband issue, because the small providers who are most likely to serve rural areas have to "interconnect," or connect to the global internet, through the large internet service providers (ISPs). Without net neutrality, the large ISPs may charge the small providers more to interconnect. These costs may be passed on to rural consumers – or they may make it cost-prohibitive for the small providers to offer service in remote areas. The CRA resolution has already passed the Senate, and the discharge petition to bring it to a vote in the House has bipartisan support.

We'll keep fighting on Capitol Hill and at the FCC, but there's no better way to change things than to speak out by contacting your elected officials. You can call your Representative and urge him/her to sign the discharge petition to force a vote to save net neutrality. Public Knowledge is always working with allies in rural communities. Don't hesitate to contact us if you live in such a community. Just a few voices from rural communities speak ten times louder than 100 lobbyists from large telecom and broadband companies.

***Allie Bohm** is Policy Counsel at Public Knowledge.*

Public-Private Partnership Will Build Out Affordable Broadband in Rural America

by Sarah Tyree

The Universal Service Fund supports the deployment of broadband in rural areas where access costs are high.

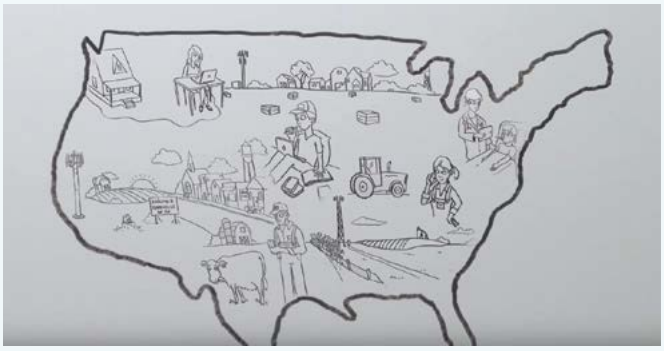
Modern, high-speed broadband is a critical issue for those of us who live and work in rural communities. Decent, affordable housing for low-income rural Americans would not be acceptable if the housing did not include access to water, electricity, and phone service. Shouldn't decent housing also include affordable broadband? Schoolchildren should not have to go to school parking lots on Sunday afternoons to access the internet needed to complete their homework assignments.

As a lender to rural infrastructure, CoBank understands both the challenges and the policy implications of committing to deploy affordable broadband throughout the United States. Based just outside Denver in Greenwood Village, CO, CoBank is a national cooperative bank with a mission to provide dependable credit and other value-added financial services to agriculture and rural infrastructure businesses. CoBank is a proud member of the Farm Credit System, a national network of cooperative banks and retail lending associations chartered by Congress to support the borrowing needs of U.S. agriculture and the nation's rural economy.

After more than a century of serving rural markets, CoBank has deep experience financing critical broadband infrastructure in rural America. As of December 31, 2017, our loan volume to rural infrastructure across the United States was

$21 billion. We lend to rural electric cooperatives, rural water and waste water systems, and rural communications providers. Our communications customers operate all aspects of the systems that enable rural broadband access, including wireless, wireline, cable, fiber transport, and data centers.

In today's world, broadband access has become one of the most important tools for driving growth and delivering a high quality of life. The broadband network that serves farmers, rural hospitals, rural businesses, and rural residents is the same network that connects large cities and urban residents. Understanding how this network operates is helpful in understanding the policy implications of building out rural broadband. I would encourage you to watch the short video that CoBank developed to explain how rural broadband works. One of the key takeaways is that both wired and wireless networks are dependent on a broadband backbone to serve rural America.



Broadband: Bringing Rural and Urban Communities Together

Challenges in Rural Areas

The key challenge of deploying affordable broadband throughout the United States is the high cost of building and maintaining the necessary infrastructure in rural areas. If companies could make a return on investment building out broadband to all Americans, they would already have done so. There would be no digital divide. The public policy of providing a cost-recovery mechanism to connect all Americans is not a new concept and its results serve the greater good.

Building and maintaining broadband is more expensive in rural areas than in urban and suburban areas. In addition to the high costs associated with constructing broadband infrastructure in rural areas, there are also high costs associated with maintaining and upgrading these networks to accommodate growth of data traffic. The broadband network is a dynamic infrastructure; frequent technological advances warrant upgrades and regular capital spending.

The higher cost and lower long-term returns of delivering cutting-edge technologies to sparsely populated areas have led many communications companies to focus on urban and suburban areas, where larger population translates into scale, and therefore better economics. As a result, our rural residents are missing the benefits of the technological revolution many of us take for granted. This is why a digital divide exists in this country, where rural citizens are not provided the same advanced communications services as their urban counterparts.

Universal Service Fund

To eliminate the digital divide, there is a role for the federal government to assist rural broadband, just as there is a role for it to support the federal highway system. The Universal Service Fund (USF) is successful in supporting affordable telephone service and is now transitioning to a similar role for broadband service.

The communications industry continues to evolve rapidly and the federal regulatory framework to keep up with this change is evolving. Although the USF is supporting the deployment of broadband, not all broadband users pay USF fees. If a consumer has only an internet connection and not a phone connection, no USF fee is paid. Modifying the contributions to the USF is a necessary step to keep the USF fully funded in order to connect all Americans to broadband. Since December 2011, the funding for the USF high-cost rural program has been capped, so, as more companies build out more broadband, each provider is being reimbursed a lower rate each year. This has been a disincentive to make additional investments in high cost areas.

When a company explores how to provide broadband in a high-cost rural area, the company analyzes the available support programs and determines whether they will assist in making the project viable. If the

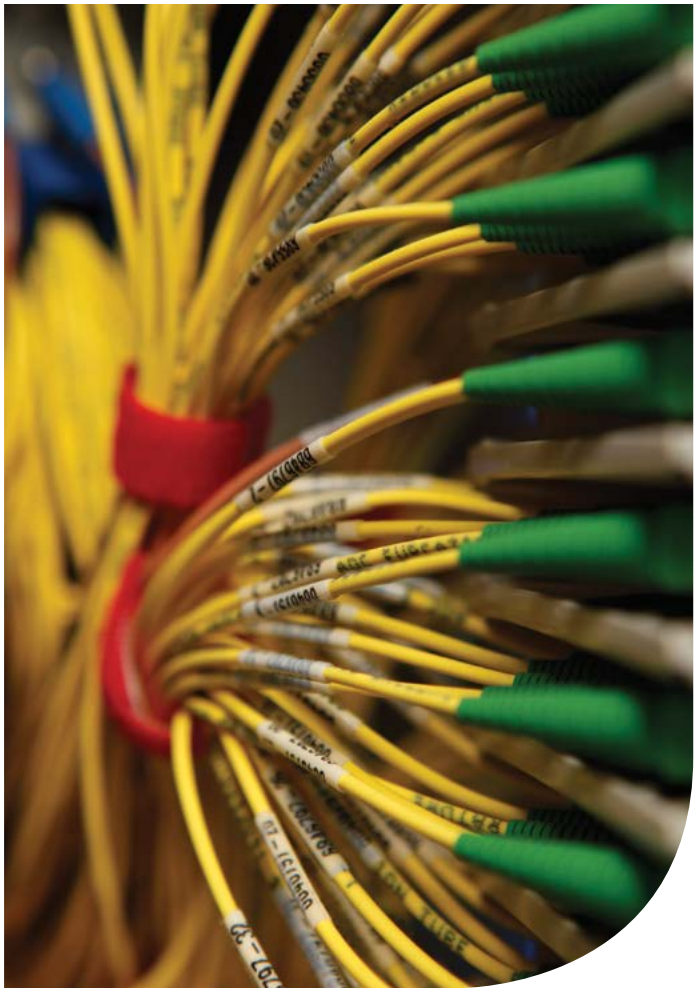
company determines the support is not reliable and subject to change, then the expansion plans are put on hold.

Over the past five years, the Federal Communications Commission has rolled out modified USF programs known as the Connect America Fund to offer certainty to communication companies building in rural communities by providing ten years of stable support. CoBank has seen an increase in investment due to this consistent level of resources.

CoBank views the USF as an important public-private partnership for the federal government. Companies can leverage USF's support to obtain private financing to serve rural America. We firmly believe that a sustainable cost-recovery mechanism is imperative to assist the financing of rural broadband. There is no silver bullet to avoid this reality. Without this type of ongoing financial support, no temporary financing method (e.g., loans, loan guarantees, or one-time grants) will be sufficient to deploy broadband across rural areas and throughout the entire country. We cannot expect companies to deploy broadband in areas where there is no return on investment unless there is a support program. We need dedicated federal investment so every American, even in remote rural America, has access to broadband.

CoBank has more than 30 years of experience financing rural communication businesses and being a partner in their growth. We welcome the opportunity to collaborate with other entities that care about rural America in supporting USF to deploy broadband to rural America. As the report of the federal Interagency Task Force on Agriculture and Rural Prosperity highlighted, reliable and affordable high-speed internet e-connectivity will transform rural America as a key catalyst for prosperity.

***Sarah Tyree** is Vice President of Policy & Public Affairs at CoBank.*



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- SITE ACQUISITION
- SITE DEVELOPMENT
- CONSTRUCTION/ REHABILITATION

GET IN TOUCH

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HAC is an Equal Opportunity Lender and Employer

HAC FACTS

BUILDING RURAL COMMUNITIES

HAC has partnered with 3 organizations and invested nearly $3 million to develop 33 homes in North Carolina and Louisiana.

- 12 single-family self-help homes in Hendersonville, NC with The Housing Assistance Corporation
- 18 townhome style rental apartments in Minden, LA with Noah Arc CDC
- 3-unit rental property in Lafayette, LA with Open Doors Louisiana

To learn more about HAC's financial products and loans, visit :
www.ruralhome.org/loans

BUILDING CAPACITY

In partnership with the US Department of Agriculture, HAC hosted two webinars highlighting USDA's Section 538 Guaranteed Program in the spring of 2018. These trainings offered rural practitioners the opportunity to learn more about Section 538, and how it can be used in their communities.

For more information and to view the webinar recordings, visit :
www.ruralhome.org/538webinars

BUILDING KNOWLEDGE

There are approximately 13,000 rental properties providing more than 415,000 rental homes to families and individuals across rural America in the USDA's housing portfolio. According to HAC's analysis in *Rental Housing for a 21st Century Rural America: A Platform for Preservation*, a looming crisis threatens to dramatically reduce the size of this portfolio over the next 20 years.

To learn more, visit :
www.ruralhome.org/PlatformforPreservation

Housing Assistance Council

1025 Vermont Avenue, NW
Suite 606
Washington, DC 20005

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Editors: Christina Davila, Leslie Strauss, Lance George, Dan Stern, Austin Moser, and Stephen Sugg.

DESIGNER: Salta With Us

ISSN: 1903-8044