

**FIELD HEARING: GETTYSBURG, PENNSYLVANIA:
HARVESTING THE DIGITAL AGE: CONNECTING
OUR COMMUNITIES FOR A BETTER FUTURE**

HEARING

BEFORE THE

**SUBCOMMITTEE ON RURAL DEVELOP-
MENT, AGRICULTURE, TRADE, AND
ENTREPRENEURSHIP**

OF THE

**COMMITTEE ON SMALL BUSINESS
UNITED STATES
HOUSE OF REPRESENTATIVES**

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Questions for the Record:

None.

Answers for the Record:

None.

Additional Material for the Record:

None.

HARVESTING THE DIGITAL AGE: CONNECTING OUR COMMUNITIES FOR A BETTER FUTURE

MONDAY, OCTOBER 21, 2019

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SMALL BUSINESS,
SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE, TRADE, AND ENTREPRENEURSHIP,
Washington, DC.

The Subcommittee met, pursuant to call, at 1:11 p.m., at the Adams County Agricultural and Natural Resources Center, 670 Old Harrisburg Road, Gettysburg, Pennsylvania, Hon. Abby Finkenauer [Chairwoman of the Subcommittee] presiding.

Members present: Representatives Finkenauer and Joyce.

Chairwoman FINKENAUER. Good morning. The Committee will come to order. I am so excited to be here today in Gettysburg, and joined by my Ranking Member, Dr. Joyce. We are so grateful to all the folks who came out today, especially our witnesses. I know some of you drove quite a way to get here, so it means a lot, and we are so excited. This is my first committee hearing that's not in D.C., and it's very, very important to be doing this.

For those in attendance, I would just like to share some background on the proceedings and how all this works. This is a formal congressional field hearing of the House Committee on Small Business. Due to this format, there is not an opportunity for questions or comments from the audience. I do appreciate your interest in today's topic, though, and hope that each of you will help uplift the issues that come out of our discussion today.

Field hearings play a very important role in the work of our Committee. Traveling to Washington, D.C. and testifying before Congress can be hard for a lot of folks across the country given the cost it takes to either fly or drive. It can prevent some very important voices from being heard. Field hearings bring the work of our Committee to our districts and offer our communities the opportunity to share their views on issues that matter. I want to thank Dr. Joyce for inviting me to this historic part of his district and our country.

Just like my district, farmers and small businesses here are the backbone of the local and state economy. It is one of the reasons why Dr. Joyce and I have been able to work across the aisle to help address issues impacting communities like ours, including trade and making sure that small towns in rural areas are places that our next generation can build a life and raise a family.

Today's hearing is an extension of that work, and I look forward to hearing from each of our witnesses here today.

As I always like to remind folks on the Committee, our farmers are also our small business owners. Everybody needs access to high speed Internet. Today, it is all but impossible to grow a business without it.

From precision agriculture, to selling products online, to even taking a community college class online, broadband has become a key part of economic opportunity. 19 million Americans do not have access to high speed Internet, and those living in rural parts of our country are much more likely not to have it. While more than 98 percent of people living in urban centers have access to high speed Internet, 1 in 4 Americans in rural areas don't have it. Rural areas in Iowa, like Buchanan County, have been left behind because of the costs and challenges associated with building out the broadband infrastructure needed to serve our smaller and more spread out population. This has had a real impact on our economy and quality of life in northeast Iowa.

I invited a commissioner from the Federal Communications Commission, the leading government agency, in regulating and overseeing broadband, out to my district. She and I heard firsthand from our small business owners, farmers, school superintendents, and healthcare providers, just how hard it is to get high speed Internet in my district. A farmer showed us how the new technology in his tractor needs to connect to broadband to function correctly. We heard from healthcare facilities that want to expand into telemedicine, but cannot do so without high speed Internet. I know that your communities face similar challenges, which is why this is so important to be able to uplift today.

Through conversations with business owners across northeast Iowa, I learned that a lack of access to broadband has an especially detrimental effect on our small businesses. There are small businesses in my district that cannot complete simple online payment transactions because their Internet service goes down multiple times a day. Others say they are paying sky high prices, but still facing much slower internet speeds. For those already struggling to compete against urban or online competitors, they feel as though they are falling further and further behind. And quite frankly, it shouldn't be that way.

Having reliable and affordable high-speed Internet connection can make all the difference. In fact, small businesses that are digitally connected double their earnings per employee. They also see four times the revenue growth year after year, and are three times more likely to create jobs. That is why we must continue to coordinate federal resources and make common-sense investments in broadband access.

I am proud to serve on the Congressional Task Force on Rural Broadband, and I am working to ensure that investments in rural broadband are included in any comprehensive infrastructure package that passes through the House. The Federal Communications Commission and U.S. Department of Agriculture have made strides to develop broadband networks in rural communities, but much more work is needed to be done. According to the FCC national broadband map, residents in Iowa and Pennsylvania both have

nearly complete access to high speed Internet, although we know that is simply not the case. The sad reality is that there are more Americans without broadband access than these maps indicate. When making significant federal investments in broadband deployment, we need to be working with accurate data. Without that, we cannot ensure the funds and resources are going where they are needed. In fact, I introduced legislation to make sure that we not only know which areas have coverage, but also the quality and the cost of the services that folks are receiving.

Last month, the FCC issued an order requiring new data collection to gather more accurate information on broadband accessibility. The Commission also proposed establishing a new fund to help close the digital divide using this improved data. We will be monitoring their progress on gathering the data and implementing a new fund to make sure that it is done in a way that helps our communities in need.

It has become painfully clear that private investment is not enough here. I hope that today's discussion will highlight ways that the federal government can help improve connectivity. I truly thank each of the witnesses for joining us here today, I look forward to your testimony, and I am very grateful that Dr. Joyce and I were able to work together to do this today.

Before I introduce Dr. Joyce, I will just take a moment to explain how all of this is going to work. After Dr. Joyce gives his opening statement and introduces each of you, you will have some time to give testimony. We ask that you keep your statement around 5 minutes. After each of you speak, Dr. Joyce and I will ask you questions. Don't worry if there is something you didn't get to in your testimony. We will have plenty of time to explore additional topics during the question and answer portion.

Now, I would like to introduce my Ranking Member, Dr. Joyce, for his opening statement and to introduce our witnesses.

Mr. JOYCE. Thank you, Chairwoman Finkenauer. Good afternoon, and thank all of you for being with us today in historic Gettysburg. It is Chairwoman Finkenauer's first trip to Gettysburg, and she has promised it will not be her last.

There are many people to thank. First and foremost, these 4 expert witnesses for sharing your perspective on rural broadband access. Special thanks to Adams County Agricultural and Natural Resources Center for hosting us here today in this beautiful facility. Most significantly, I would like to thank the gentlelady from Iowa, Ms. Abby Finkenauer, who is the Chairwoman of the Subcommittee on Rural Development, Agriculture, Trade, and Entrepreneurship. Like me, she is in her first term in the House of Representatives, and she represents a large part of rural Iowa. There are a lot of similarities between our districts.

This is the sixth hearing that we have held together, and I will tell you, we have become great friends along the way. Thank you. Thank you, Chairman Finkenauer, for being here with us today, and welcome to the Keystone State. Welcome to Adams County.

In the 21st century, the internet has become an integral part of American lives. From schools to industrial hubs to apple and dairy farms, access to technology is synonymous with one word. It is synonymous with success. Small businesses of all industries require

both reliable and affordable broadband to compete in local, national, and international markets. Today, sadly, more than 24 million Americans lack access to high speed internet. The vast majority of those live in rural communities. Here in Pennsylvania specifically, more than 800,000 people do not have access to reliable internet, and those in rural areas have substantially slower connectivity than those who live in larger urban areas. When comparing urban and rural broadband deployment, 98 percent of urban America has access to both fixed and mobile broadband, while unfortunately here, only 68 percent of rural citizens have that same access.

I am committed to never allowing our rural communities to be left behind.

It has been well-documented that broadband connectivity is crucial for engagement in the modern economy, as well as the social, educational, and political spheres. Today, with our expert witnesses, we will address all of these areas.

Unfortunately, large telecommunication companies have little incentive to invest in broadband infrastructure in areas with low population density. Instead, small telecommunication carriers are far more likely to invest in rural communities, often because they are their own communities. Frequently, however, these small firms face numerous challenges in their efforts to increase broadband access. Without the ability to disseminate the high costs of deployment or leverage economics of scale, the small telecommunication companies often rely on assistance from the Federal Communications Commission and the Department of Agriculture to mitigate these high costs.

Back in Washington, we have heard from small telecom providers that serve our rural areas that the recent improvements to these programs have helped. But as always, there is much more to be done, and we will work for those improvements to be made in our upcoming legislation.

Over the last several years, Congress has enacted several bipartisan efforts to increase the amount of resources available to our communities, but the lack of clarity across federal regulation leaves many of these programs underutilized. Here in south central Pennsylvania, this must be addressed.

As you can see today, we have the opportunity to consider an issue that directly impacts Americans in Pennsylvania, in Iowa, and around the country.

Thank you to our witnesses for making your time to join us today, and to share your experiences and your insights. Today's hearing will bring your voices from the heart of rural south central Pennsylvania back to our Nation's capital. I look very much forward to this discussion, and I yield back.

Chairwoman FINKENAUER. Thank you, Dr. Joyce. Dr. Joyce will introduce the witnesses.

Mr. JOYCE. Thank you, Madam Chairwoman.

Our first witness is Brandon Carson, the director of planning and community development of Southern Allegheny's Planning and Development Commission. Brandon and his team work to provide project and funding development assistance in the areas of infrastructure, transportation planning, and various other community and economic development initiatives. In 2016, Brandon was

named to the Foremost Under 40 list by Pennsylvania Business Central, honoring central Pennsylvania's next generation of leaders. Mr. Carson is a graduate of the University of Pittsburgh.

Our second witness is Mike Ross, who is the president of the Franklin Area Development Corporation from Chambersburg, Pennsylvania. Since its startup, he has been president in 1986. The corporation is responsible for initiating, for implementing, and promoting a comprehensive development plan that is a strategy for all of Franklin County. Prior to the FCADC, Mike spent more than 8 years with the Pennsylvania Department of Commerce where he held several positions. Mike has a B.A. in political science from Slippery Rock, and is a graduate of the Economic Development Institution from Oklahoma University.

Our third witness is Mr. Anthony Angelini, a language arts and social studies teacher at New Oxford Middle School. He serves as the social studies department curriculum leader, new teacher mentor, and is an active member at the Conewago Valley Education Association. In addition to his classroom and leadership roles in the district, Tony is an adjunct instructor in the education department at Gettysburg College, his alma mater. He earned a B.A. degree from Gettysburg in 2006 and a master's degree in teaching from Shippensburg University in 2014. In 2015, Mr. Angelini received the Milken Educator award, the Oscars of teachers, which pays tribute to exemplary elementary and secondary school faculty.

Our final witness is Brock Widerman, president of the Adams County Farm Bureau. Brock's wife, Joy, is a herdsman for her family's farm, the JoBo Holstein Farm, which I have visited, and manages and operates 1,000 acres of land and nearly milks 1,000 milk cows a day. The JoBo Farm hosts school field trips and an annual community picnic. On October 29, the farm will host a virtual tour for 7th to 12th graders here in Adams County.

Thank you, Madam Chair. I yield back.

Chairwoman FINKENAUER. Thank you, Dr. Joyce.

Mr. Carson, you are now recognized for 5 minutes.

STATEMENTS OF BRANDON CARSON, PLANNING AND COMMUNITY DEVELOPMENT DIVISION, SOUTHERN ALLEGHENIES PLANNING AND DEVELOPMENT COMMISSION, ALTOONA, PA; L. MICHAEL ROSS, EDP, PRESIDENT, FCADC, CHAMBERSBURG, PA; ANTHONY ANGELINI, SOCIAL STUDIES TEACHER, NEW OXFORD MIDDLE SCHOOL, CONEWAGO VALLEY SCHOOL DISTRICT, GETTYSBURG, PA; AND BROCK WIDERMAN, PRESIDENT, ADAMS COUNTY FARM BUREAU, GETTYSBURG, PA

STATEMENT OF BRANDON CARSON

Mr. CARSON. Good afternoon, Chairwoman Finkenauer, Ranking Member Dr. Joyce, and first, I would like to thank you for the opportunity to testify before you today. My name is Brandon Carson. I am the director of planning and community development at the Southern Alleghenies Planning Commission in Altoona, Pennsylvania.

Addressing the lack of broadband connectivity in our six-county region is a priority. We have been engaged on a number of fronts

with hopes of advancing high speed deployment projects in the region.

One of those efforts involved a fiber deployment in Somerset County, and I would like to share my experiences from that effort with you today.

Beginning in 2016, we worked with the Somerset County Board of Commissioners on the proposed construction of a fiber network to connect the four industrial parks in the county. The hope was to secure additional funding to alleviate the financial burden of fiber expansion within the county, and facilitate the provision of much needed services to Somerset County businesses and residents.

In 2017, the county was awarded over \$1.5 million in funding from the Economic Development Administration, or EDA, and the Appalachian Regional Commission, which I will refer to as the ARC. Those funds were awarded to implement the proposed deployment in Somerset. Based on the EDA and ARC guidelines, the intent was for the county to competitively procure a vendor to construct and ultimately operate and maintain the fiber network via a 20-year lease. I have included additional details in my written testimony, but I will highlight a few of the issues we encountered when trying to utilize federal funding on this particular project.

In general, the regulatory requirements of the traditional infrastructure projects that EDA in particular was accustomed to did not fit neatly within the confines of a fiber deployment project. As a result, EDA was forced to offer novel interpretations of the respective regulations, all in an effort to establish and define parameters for the oversight of the project.

Firstly, EDA and ARC guidelines require the county to own the fiber once it was constructed. This became a major sticking point. Essentially, vendors were asked to put time, effort, and capital into developing infrastructure that they may never own. This was one of the biggest challenges when trying to advance the project, and it is understood that this ownership requirement is somewhat unique to EDA and ARC guidelines. For example, grants awarded through the FCC and USDA RUS program can go directly to a provider, even if that provider is a for-profit entity. The guidelines for these programs were written with broadband infrastructure in mind, while the EDA and ARC regs were written for more traditional economic development efforts like sewer, water, and road improvement projects, infrastructure that is typically owned by a government entity. We know that is not usually the case with broadband infrastructure.

In addition to the ownership issue, there were challenges with one of the restrictions in the ARC's code. Specifically, Section 8.4 restrictions on assistance that prohibits ARC from investing in projects that promote unfair competition between businesses within the same immediate service area. During the request for proposal process, or RFP, an incumbent provider in the region contacted Somerset County to advise that they were already providing broadband services in one or more of the targeted industrial parks. Due to the restriction in the ARC's code, this ultimately halted the ARC and EDA investments that we had worked so hard to secure.

When interviewing businesses located in the parks about their existing broadband service, it was evident that there were real concerns about the existing reliability and affordability of those services that were being offered. In these situations, ARC is relying on the incumbent provider's data as it relates to the areas served and speeds being offered. Coverage maps are not always reliable, and speeds are often overstated. Competition is necessary in order to adequately serve residents and businesses in these rural areas; however, ARC does not have any guidance from Congress that suggests subsidizing a competitor is allowable under their current code.

Moving forward, Congress may consider reviewing the ownership requirement for broadband infrastructure and investments implemented by EDA and ARC specifically. In addition, authoring more clear and concise guidance for EDA and ARC funded broadband projects would allow grantees to plan for and better navigate the federal regulations to successfully complete high-speed deployments.

Lastly, the unfair competition language in the ARC's code is broad and open to interpretation. There is an opportunity to set additional parameters to provide clarity and offer ARC with guidance on better ways to implement these types of projects when there are incumbent providers offering services in portions of the proposed coverage area.

In summary, EDA and ARC have a unique opportunity to work in concert with other federal agencies to improve broadband connectivity to the rural parts of the country that so badly need these subsidies. However, in order to do so, the federal regulations they must abide by will need to be adapted to better fit the current needs.

Thank you again for the opportunity to share my experience on this particular project, and I look forward to any questions you may have after.

Chairwoman FINKENAUER. Thank you, Mr. Carson. We appreciate it.

Mr. Ross, you now have 5 minutes.

STATEMENT OF L. MICHAEL ROSS

Mr. ROSS. All right. Madam Chairwoman Finkenauer and Ranking Member Dr. Joyce, I am grateful for the opportunity to provide testimony today given the correlation of broadband technology to economic development. My name is Mike Ross and I am president of the Franklin County Area Development Corporation. FCADC is our acronym.

As a matter of background, the FCADC is a 501(c)(6) nonprofit corporation charged with formulating, implementing, and promoting a comprehensive Franklin County-wide economic development strategy that nourished plant growth and family sustainable employment opportunities. The strategy is based on the retention and expansion of existing companies, the selection and attraction of new industries, and the startup of new businesses. Over the past 33 years, our office has facilitated 765 projects that have resulted in more than \$2 billion of new capital investments in Franklin County. This investment has impacted more than 50,000 jobs.

Franklin County is among the fastest growing counties in Pennsylvania. Strategically located on the I-81 corridor and with easy access to Interstates 78, 76, and 70, the county is within a one-day drive of 50 percent of North American population, including the major population centers in the Midwest, Northeast, and Canada. Additionally, Franklin County is within 75 minutes of the port of Baltimore, and three hours from the port of Philadelphia. When combined with two class one intermodal terminals, Franklin County is an ideal location for myriad of industries, including manufacturing, transportation, logistics, and defense. Target distribution center, Ulta Inc., Staples distribution, and Proctor & Gamble all have established logistic centers in the county. Franklin County is also home to manufacturers such as Manitowoc Crane Group, Volvo Construction Equipment, JLG Industries, Epiroc Drilling Tools, and Johnson Controls, as well as the Letterkenny Army Depot, to name a few. In addition, Franklin County is among the top five agricultural producing counties in the Commonwealth.

Infrastructure is the foundation of economic development. Retaining, attracting, and/or supporting the start-up of quality employers requires the availability of a full range of public utilities, including telecommunications and broadband technology. I have often remarked that economic development is not possible unless you can flush a toilet. The same can be true for broadband internet. Broadband needs to be considered as part of our national public infrastructure, the same as roads, water, sewer, ports, airports, rail networks, and a reliable electric grid.

To state the obvious, we live in a globally connected economy and for our companies to successfully compete, especially those in rural America, they need to have high speed internet and broadband connectivity. The transfer of medical as well as technical documents, fabrication drawings and video conferencing require high speed internet and broadband connectivity. As I mentioned previously, Franklin county is home to some of the most widely recognized manufacturers in the world, and their ability to connect to their other locations is critical. Moreover, as our national conversation has shifted to the importance of education and workforce development, to include online and distance learning, high speed internet has become essential.

As it stands now, the lack of broadband capacity in rural settings creates a disparity in educational opportunities and outcomes. According to a June 2019 report from the Center for Rural Pennsylvania entitled "Broadband Availability and Access in Rural Pennsylvania", over 800,000 Pennsylvanians do not have access to FCC levels of broadband connectivity, classified as download speeds of a minimum of 25 megabytes per second.

Locally, our download speeds are abysmal, according to the report. Download speeds in our area range from a low of 5.9 megabytes per second in Adams County, where we are right now, and which is home to the Gettysburg Battlefield and Gettysburg College, to 14 megabytes per second in Blair County, home of Congressman Joyce. The point is, all of this is half—more than—in Blair County, we are only half of where we should be.

None of the speeds are acceptable. It is important to note that Governor Wolf, in collaboration with the Pennsylvania Legislature,

has created a bipartisan broadband initiative whose goal is to address the challenges faced by rural Pennsylvania. Launched in 2018, the Pennsylvania Broadband Investment Incentive Program has made available \$35 million in financial assistance to private providers to expand service.

So, to recap, the availability of high-speed broadband internet in rural America is critical to a vibrant, growing economy and development of a highly skilled workforce that is prepared to compete in an ever-increasingly connected global economy.

So again, thank you for the opportunity to testify today.

Chairwoman FINKENAUER. Thank you so much, Mr. Ross.

And with that, Mr. Angelini will have 5 minutes.

STATEMENT OF ANTHONY ANGELINI

Mr. ANGELINI. Okay. Good afternoon, Chairwoman Finkenauer and Congressman Joyce. I am eager to speak about connecting our communities, our students, and their families in order to close the digital divide for a better future.

As an English and Social Studies teacher for 11 years at New Oxford Middle School, it is a particular honor to be here. In those two subjects, we emphasize the power of language to create an impact and the responsibility we all have to strengthen our communities through civic action. I even brought one of my students, Sam, back there along with me to be a part of this as well.

Conewago Valley is centered around New Oxford. Our community does not have a YMCA. Our library is only open until 5:00 three nights a week. There is no Panera Bread. Forty-four percent of our students qualify for free or reduced lunch.

For a significant portion of our students, then, the district offers the only reliable access to high speed internet. Even there, the FCC's E-Rate Program, which provides discounts to schools like ours, has been instrumental in strengthening access. In fact, five years ago we had only a 50 megabytes per second pipeline for the 4,000 students of our district. One of our IT staff had me imagine inviting my 2,000 closest friends and their iPads over to watch Netflix. Our network was basically attempting to do the same. In a typical week, service failed at least twice. Teachers basically abandoned lessons that had integrated tech. In the moment, it felt like time was moving backwards.

With the E-Rate Program, careful budgeting, and support from governmental grants, the district currently has a 400 megabytes per second connection. We are in line with the FCC's old target to support streaming video, online collaboration, and other digital learning. However, we still fall short of the FCC's current target of 1 gigabyte for every 1,000 students.

In our community, the lack of equitable access is certainly a harsh reality. We have students that do not have broadband access at home. Those students face significant consequences. Drawing from my experience, I hope to highlight three examples of why closing this gap is so important: First, to ensure that all of our students have access to the learning opportunities available; second, to engage families with school; and third, to ready our district for changes in policy ahead.

I am a member of our district's Road to Relevance team, which we often call R2R. It is a 10-year plan to ensure that our students are prepared to thrive today and excel tomorrow in a changing global society. As part of that, our high school students, like Sam, were assigned an iPad this year. Next year, 1:1 will expand to our middle school. To amplify the learning, we rely on those tools and learning platforms like Schoology, which are digital classrooms that stretch beyond our school walls.

One common strategy we use is what is known as a flipped classroom model. Students are assigned at-home video lessons, and then class time is used more for application, collaboration, and higher-level thinking. Alternatively, I often use those videos to support struggling students after a lesson ends. Just last week, students were writing position papers. I recorded lessons on MLA citations and the conventions of quotations, neither of which are easy for 12-year-olds. For students, these resources give them access to lessons at their fingertips. For those without access, the same resources are out of reach.

Students often come to my room as soon as they get off the bus in the morning, during lunch, or after school so that they can complete those assignments when they cannot at home. For 13-year-olds, however, transportation is a barrier. Our school right now is looking at revising our schedule to include a resource period where they can have access to devices during the school day, but such a change comes with cost. Every minute given to the resource period is taking away from time for language arts, math, or science.

Access impacts our students' families and their ability to connect as well. Next month, we will host parent conferences. It is an invaluable chance to strengthen relationships with parents and strengthen the bonds between schools and home. Families fiercely compete for the slots that take place after 5:00 p.m. As with so much of our lives, scheduling is now done online through our digital gradebook. Though parents can easily track grades with the phone app, the mobile version has its limits. Viewing a grade is straightforward. Scheduling a conference is not. It is the parents with access who can best navigate the program.

Common Sense Media reports that families making over \$100,000 as a household were two and a half times more likely to have a laptop and broadband access than those making under \$35,000. Within the first hours, almost all of the prime slots for our conferences are claimed by the parents of students already supported by extensive social and cultural capital. The families who most need a strong bridge to the school are left behind.

Finally, reliable access to digital resources is a systemic issue that shapes policy decisions as well. Pennsylvania's Act 64 of 2019 allows schools to use flexible instructional days. The law basically defines these as days when instruction is delivered outside of school when normal operations are not possible, due to weather, building damage, or other temporary events. Passed with the best of intentions, the law has the potential to widen the digital gap for our students. The assumption of Act 64 is that students can access these digital tools at home. It must be at home, since the most common cause is expected to be snow, and it is not reasonable to expect students to travel to a place with Wi-Fi. Further, many of

my students are not yet ready to be home alone. Instead, they stay with caregivers, especially grandparents, who may be less likely to have reliable access, particularly when responsible for several children.

In anticipation of concerns, many districts have already prepared paper lessons to go home in advance. For example, they might give a bag distributed to a student the day before a storm. Yet those lessons are often disconnected from the curriculum and involve tasks that are far less engaging, far less interactive, and far more likely to be below grade level.

The lack of reliable access has an impact on students, their families, and public policy relevant to schools. I saw that impact last week. I will experience it next month with parent conferences, and I will need to deal with it in the coming years with state policy.

Your hearing is aptly named. We want all students to be able to reap the benefits of the digital age. Digital resources offer opportunities for students and have the potential to open wide the doors for future success. Policymakers can play a critical role in leveling the field and eliminating the barriers to that future as you consider building on the bipartisan efforts in Congress that have already provided essential resources to our schools and the communities they serve.

Thank you.

Chairwoman FINKENAUER. Thank you, Mr. Angelini, and with that, I will yield to Mr. Widerman for 5 minutes. Did I say your last name correctly?

Mr. WIDERMAN. Widerman.

Chairwoman FINKENAUER. Widerman, okay. Thank you so much.

STATEMENT OF BROCK WIDERMAN

Mr. WIDERMAN. Okay. Chairwoman Finkenauer, Ranking Member Joyce, thank you for inviting me to speak on rural broadband and agriculture. My name is Brock Widerman. I am the president of Adams County Farm Bureau. My wife, Joy, is a partner/owner of JoBo Holstein Farm, a family dairy and crop farm in Gettysburg. I work on the farm as well, performing field work and mechanical repairs. I offer today's testimony on behalf of Pennsylvania Farm Bureau, the state's largest general farm organization. My written testimony provides an expanded perspective of the highlights I will cover during the hearing.

Broadband is no longer a luxury; it is a necessity. Having spent my entire life in agriculture, growing up on a layer hen operation before joining JoBo Holstein farm. I have seen the growing importance of technology. Now technology is critical to our everyday lives and fixed and mobile broadband is absolutely essential to modern agricultural operations.

For those of us who have generally reliable broadband access, it is sometimes easy to forget the role it plays in our everyday lives. It is just how we do our jobs. As an example, as our equipment becomes more advanced, repairing that equipment becomes increasingly challenging. On my farm, I can't always run down to the local store for parts. I have often used the internet, particularly my phone, to research how to repair equipment, order parts, or deter-

mine which stores may have the needed parts, and for our more high-tech equipment, utilized tech support from overseas. Clicking a few buttons from my phone can often streamline a process that once may have involved calling around to multiple stores or driving long distances to locate parts and information needed to make a repair.

But not all farmers have reliable broadband. Bethany and Adam Coursen, farmers near State College, invested in robotic milking devices to milk their cows, and also devices that collected herd health. However, the lack of high-speed internet has made it difficult to get the needed software upgrades and prevents technicians from working remotely on their system. They have been able to devise work arounds, such as cell phone hotspot, but that is not how the system was designed.

Rural broadband is also essential for the quality of life of rural Americans. High speed internet access allows individuals to reach healthcare, educational services, government agencies, and new business opportunities. Recently, my two oldest children received iPads from their schools and are expected to complete assignments on them. While my children can complete their assignments at home, others aren't so fortunate. David Bentrem, my fellow Farm Bureau member, whose farm is in Washington County, lacks broadband access. He has to take his daughter to the local McDonald's so she can obtain internet access to complete her school assignments.

These are not isolated incidents. Twenty-nine percent of rural Americans lack access to broadband. In Pennsylvania, roughly 18 percent of rural citizens lack access to the internet, or only have low speed options, and there are serious flaws in the federally available maps and data collection techniques, which hinders the availability to direct federal funds to broadband buildout.

Given the recent financial challenges of farm economy, we must utilize all the tools available to agriculture, especially broadband technology. In fact, USDA found that if access to broadband and adoption of digital agricultural technology matched demand, U.S. agriculture would realize benefits amounting to \$64.5 billion annually.

The Farm Bureau appreciates the Subcommittee's interest in this issue, and we look forward to working with you to make sure all of agriculture has access to reliable fixed and mobile broadband. Thank you.

Chairwoman FINKENAUER. Thank you so much, Mr. Widerman.

Again, we are so grateful to have you all here today, and we will now do a couple rounds of questions. I will have 5 minutes to ask questions, and then Dr. Joyce will have 5 minutes, and we will do that all over again as well, time permitting. Sound good?

All right. Mr. Widerman—no. I keep saying it wrong.

Mr. WIDERMAN. Widerman.

Chairwoman FINKENAUER. Widerman. Thank you again so much for being here. You have a farm with over 1,000 milking cows. I always say that I grew up in a town with more cows than people, but your farm itself has more cows than my entire town.

One thing I am curious about is how broadband access impacts you personally. I know you also touched on how some of your friends don't really have access. What are the options for you and your wife for Internet service?

Mr. WIDERMAN. Currently we—

Chairwoman FINKENAUER. Just see how you do.

Mr. WIDERMAN. Currently we have a provider that provides us internet, and then we actually spent quite a considerable amount of money on our farm to—

Chairwoman FINKENAUER. Okay.

Mr. WIDERMAN.—bounce that around the farm, because it did not reach everywhere we needed it to reach in the various areas.

Chairwoman FINKENAUER. Interesting.

Mr. WIDERMAN. I do have a friend that works for AG Com, a large feed mill in the area, and he lives 15 miles from here, and all of his—I mean, basically he is in charge of maintenance and all the IT work at AG Com, which is how it all works. He has very poor internet access. I mean, he is able to do his job from home. He can diagnose and pinpoint problems, but he says that nothing else in the house can be running while he is doing that—

Chairwoman FINKENAUER. Oh, wow.

Mr. WIDERMAN.—or it ruins his connection that he is not able to perform his job. So, that is a personal account that, you know, I contacted him the other day and spoke with him about it, and he said yeah, it is an issue. I mean, he says the cost of it to do anything different—and basically his provider pretty much told him you are on your own. I mean, we are not going to run it down your road until you have more people on your road. So—

Chairwoman FINKENAUER. Wow. We had the FCC Commissioner come out to my district. She came out to a farm and we were showing her some of the newer precision ag equipment, and talking about why it is important. We had a couple farmers there as well. It was a father/son duo, bringing the perspective of the next generation of farmers. They are pork producers, and the son explained how they know exactly the margins on every pound, because of the data on their iPad. He pulls it up to show the Commissioner, and as he is pulling it up, it won't load. It was a really good example of why rural broadband access is an issue.

And our farmers don't just need technology on the farm when they are there they need it when they are out and about. Growing up around farms, I know farming is 24/7. With technology, farmers have that freedom to be out and able to check in on the operation, What does that freedom mean for your business? Does that become more difficult if you don't have reliable Internet access?

Mr. WIDERMAN. Actually, my wife is the herdsman at the farm, and as far as herd health goes, all that is on the internet.

Chairwoman FINKENAUER. Yeah.

Mr. WIDERMAN. I mean, their dairy plan that they have is all run via the internet. So, if it is down and say, my wife and I are away and there is a problem with a cow, she can't look up any past history, milk records, anything like that to determine whether—what the next step with that cow might be.

Chairwoman FINKENAUER. What would that cost you if that goes down, you can't get that information, and something happens?

Mr. WIDERMAN. Well, if it is the life of the cow—

I mean, you can say \$2,000 right there without—I mean, and that doesn't put any value on the milk that you are losing from her or anything.

So there is—the costs are never-ending when it comes to, you know, the health of a cow and keeping going.

Chairwoman FINKENAUER. Absolutely. I think that folks don't necessarily understand all the time how important that is. So, thank you for that.

I have just a few more minutes, and then I will hand it over to Dr. Joyce.

So, Mr. Angelini, you are dealing with a lack of rural broadband access as well on a number of levels, just like our teachers in Iowa. For one, you have to deal with homework a little bit differently. What, in your perspective, does internet access mean for kids' futures? What kind of disadvantage does this put kids at if they don't have access, whether it is at home or whether it is unreliable at school compared to kids in other places in the country that have broadband access?

Mr. ANGELINI. Yeah. I think the phrase I like the most is the idea of the digital divide between our students who have and the students who have not. We experience daily the students who come in able to use a keyboard independently and the students who can't because of what they are able to do at home, and if we aren't able to intervene on that and close the gap, we are keeping some students at arm's length and pushing others further along to success. And that is where we need all the help we can get. There are so many factors beyond our control in our students' lives. Being able to provide them with the tools and internet access they need to learn is something that is within our control. And so, we are doing everything we can to manage it.

Chairwoman FINKENAUER. Thank you so much for your passion. It is admirable, and we need more of you across the country.

With that, I am out of time, so I will yield to Dr. Joyce for 5 minutes.

Mr. JOYCE. Thank you, Chairwoman Finkenauer.

First of all, thank you to Brock Wideman for being here. You know of our commitment to agriculture, particularly to the dairy industry. Thank you, Mr. Tony Angelini, for the educational perspective.

But I am going to pivot. I am going to pivot to the other side of the table at this point in time, because rural development, which is part of this Subcommittee, includes your ability to step forward and to talk to us today about the need for extensive rural broadband.

So, Mike Ross, I am going to start with you. I am going to ask you if expanding rural broadband in Franklin, in Adams, in Cumberland County, would you see additional economic benefits to the community? Could you quantitate that as well?

Mr. ROSS. I don't know if I can quantitate it at this point. There clearly would be additional economic development that would take place. I think that broadband has become part of the site location analysis that—when I started this role that nobody even knew

what we were talking about. But today, it is clearly part of the analysis.

Interestingly, one of the places where we have difficulty getting broadband capabilities is at Letterkenny, to that part of the depot that has been privatized. They struggle with getting high speed internet, and that has been impactful to all the businesses locating out there, and to some extent, has impeded some of the development to—that could have taken place there.

But I think that one of the things—one point I would like to tie to Mr. Angelini, and he is dead on. This divide is significant. I don't think when we look at Pennsylvania as an example that we realize that Pennsylvania is one of the most rural states in the country, and so when we go to places—when you think about Penn State, there is a lot of rural America between here and State College. So when you get there, it—you are kind of an oasis in the desert. But there is a lot of challenges—and so you have young people who don't have the same opportunities, and so they are not nearly as well prepared to enter the workplace. And that right now is critical, economic development and workforce development and having people prepared, and we need more—we need folks to have greater opportunities to be connected.

Mr. JOYCE. Thank you for that. I think you brought an interesting point up, Mike, that we should start, because Chairwoman Finkenauer and I were discussing the extensive nature—and this is going to lead into the question for Mr. Carson. Pennsylvania 13, which is a new district by the redistricting standards, is here in Adams County and includes part of Cumberland County and Franklin County, where you come from, Mike Ross. But it extends the entirety over 10 counties, 5 of them on the Maryland border, 5 of them north, partial counties for some of them, Cumberland and Westmoreland. But it includes over 8,000 farms to your point, very much similar to our agricultural roots with the Chairwoman and I. And our understanding and perhaps our ability to work together on these issues that we were really put here with a purpose, and work shoulder to shoulder trying to outline and make improvements in those areas.

But you talked about—Mr. Carson, you talked about Somerset County, which is on the western border of Pennsylvania 13, and talked about trying to establish—and the obstacles that you went through establishing rural broadband, and made, you know, some suggestions on how to make those improvements with legislation in the future.

You are an economic developer. You are a guy with vision. Talk to us about how rural broadband, recognizing the extensive nature of almost 150 miles east to west in Pennsylvania 13—talk to us about what a more improved, a more developed rural broadband system would mean in your world.

Mr. CARSON. Thank you for the question, and we are embarking on just that. Given the issues that we have had in Somerset with that fiber project, we are going back—taking a couple steps back actually, and right now, we were just awarded some funding from ARC to complete an eight county infrastructure assessment that will look at the gaps in broadband services in our region, opportunities for deployments, the vertical assets that might be in

place for certain wireless deployments in the region, and community bandwidth needs are some of the work elements that we are looking at for this feasibility study.

That is going to move forward later this fall into next spring, but the hope is we want to use that investigation to form a broadband cooperative, which we think is going to be absolutely necessary to advance some of these rural deployments. With what we ran into in Somerset with the incumbent providers, it was certainly an eye opener for us in terms of how cutthroat the industry can be. So, we see a cooperative as an opportunity to use state and federal funds funneled down through a cooperative to partner with those smaller providers in the region to offer services to those most rural residents and businesses that need the service that they currently are not getting.

Mr. JOYCE. Thank you. Thank you for your answer.

Mr. Angelini, I am going to go back to the educators, and I think for the purpose of the record, that I think Mr. Widerman's children who have iPads might be students of yours.

Mr. ANGELINI. They are. They were never my students, but they came through the district.

Mr. JOYCE. Students of your system. So, you talked about how important it is, and let me—I have a son who has autism, and keeping in contact with teachers throughout his education was very important. But now that is done today very frequently through internet connections, through ability to email and be on boards to talk to people. Tell me how students with disadvantages who don't have those—who are academically disadvantaged and don't have access to broadband, does that create additional problems for these students?

Mr. ANGELINI. Absolutely. You know, one of the things we fear most is a student who is making a choice between exceeding their parents' data plan, because it is their main source of internet access, and doing their homework assignment. And we are not just talking about students reading an email from a teacher anymore. As we move forward, they are interacting with streaming videos. They are creating media that they need to upload. They are going through a host of different digital resources, and all of those take more than just a few small bytes of data that is coming through a cell phone. And the primary access point for a lot of our students and their families is the phone. So, anything that needs to go beyond that, you really start to see that digital divide.

And when it comes to parent communication it is one thing for me to be able to email a parent. It is a whole other thing for me to be able to send a newsletter to a parent with interactive videos that they can use on how to use the Gradebook program or links to the different interactive presentations we are doing in class, so that they can ask their children how was the day, and they can get more of an answer than just "good." They can actually look and see what their students were doing that day and follow up with them individually. And so, some of our students have parents who can do that, and others don't, and it makes a huge difference.

Mr. JOYCE. Thank you, Mr. Angelini, and I yield back.

Chairwoman FINKENAUER. Thank you, Dr. Joyce. I will recognize myself for another 5 minutes, and then will yield back to Dr.

Joyce. I know we are running over on time, so if anybody does have to exit, no one will be offended. But we will keep going here.

Mr. Ross, you said something interesting in your testimony. You said you can't start a business if you can't flush a toilet, right?

Mr. ROSS. Correct.

Chairwoman FINKENAUER. It immediately made me think about a time I was back in Iowa and talking to one of our smaller Internet service providers. This provider is trying really hard to get into towns where it looks like there is access, but there is not. One of the things they heard in a small town was it is easier right now for us to sell a house if it doesn't have indoor plumbing than it would be if it doesn't have access to the Internet. Obviously you need both, but it just underscores how important Internet access is and how interesting it was what you said.

Can you tell me an instance when poor access to Internet has stifled an opportunity for new business growth or economic development? Have you seen somebody wanting to come into a town and then backing out due to Internet access or reliability issues?

Mr. ROSS. We have had a situation where we have had a couple of companies—and to put it in context for you—again, I am going to go back to the Letterkenny Army Depot. We have a national fully functioning depot who is contributing to our national defense efforts every day, but it got realigned in 1995. And so, part of it has been converted to a private sector industrial park, and surprisingly, we do not have high speed internet out there. And we have had several companies who have tried—who have attempted to locate or expand and that they simply—they have backed away. They don't have it, and in fact, we were just having the conversation, I know, out there about a week ago, and so we are hoping to get Comcast out there. And every time we—Comcast does have high speed capabilities, but we have been unsuccessful in our efforts to get them to go out there. And again, it becomes—you know, economies of scale come into play unfortunately where some of the providers simply say there is not enough demand, and the cost for us to be out there is too expensive and we are not going to get the return we desire right now.

Chairwoman FINKENAUER. Yeah, the ripple effect.

Mr. ROSS. Yeah. But so it is interesting, and I can appreciate the comment from your friend in Iowa saying that we could sell—give them outdoor plumbing. That is easier to do than not have internet. And it really does—and I apologize for the length of this, but this whole idea of workforce development and when you see educators where you have children who have access and those that don't, and as we go forward, it creates a real divide as they prepare to enter post-secondary education or the workforce. And it is a challenge for us.

Chairwoman FINKENAUER. Absolutely, especially when we have workforce needs across the country.

Mr. ROSS. All across the country.

Chairwoman FINKENAUER. Yeah, this is not something we can afford to be falling behind on.

Mr. Carson, I know you mentioned that the Economic Development Administration and the Appalachian Region Commission have a really unique opportunity to work with other federal agen-

cies to improve broadband connectivity, but that these programs need to be changed. You already pointed out some very specific issues with the grants in your testimony, but can you talk about any other aspects of these programs that need to be changed or feedback that you want to make sure that we leave here with today?

Mr. CARSON. Yeah. I think ultimately it comes down to the fact that both ARC and EDA, who are very close partners with organizations like ours, Southern Alleghenies Planning and Development Commission is an economic development district in partnership with both EDA and ARC. So, we work closely with these guys.

I want to make sure that I convey—I did speak with both of them in advance about the testimony I was going to provide. I want to convey to the Subcommittee that both of those agencies wanted this project to work. They both invested a lot of time and effort into figuring out a way to interpret the guidelines so that we could advance the project. In the end, there was still too much red tape, and I know there was a lot of frustration from the folks at the county, because ultimately they had invested about \$200,000 in consulting services to get the RFP ready and to get the project to the point where it was ready to be bid. And those costs were not eligible as part of the grant. So, when you introduce all this red tape and all this uncertainty after the fact, if that guidance was clear and concise on the front end and there was a good understanding of what was to be expected, you know, via the federal funds, I think that we would have had a successful project. I think that we would have had vendors that were interested in bidding and we would have a network that was very close to being up and running. Instead, here we are about 3 years later, and it looks like, you know, the grants are going to be terminated.

So, it is somewhat frustrating, but we are looking at it as an opportunity to try to learn from that experience and do everything we can to help ARC and EDA make some of those changes. Because they get it. They get that as their code is written, it is problematic. But when you are looking at wireless deployments, which oftentimes in some of these more rural areas that ARC invests in, wireless deployments are part of the solution. Well, if you have an incumbent provider that is saying we serve, you know, 20 percent of that particular 10-mile radius that the wireless deployment is going to serve, and the incumbent has the ability to halt that project due to that overlap in service areas, that is problematic. I don't know how we get to where we need to be with funders like ARC if they can't invest in those types of projects.

Chairwoman FINKENAUER. Thank you so much, Mr. Carson. I appreciate it.

With that, my time has expired so I will yield to Dr. Joyce for one more round of questions.

Mr. JOYCE. Thank you, Chairwoman Finkenauer. I appreciate that.

I am going to just kind of give a summary, and then I am going to ask for each of your take away messages for Chairwoman Finkenauer and me to return to Washington with. The important—I always look for that. What is the message that if you have us to

allow to take back to our Subcommittee and to our Committee at large, we came here to hear that.

Just 10 months ago, I transitioned from someone who cared for several hundred people in, you know, south central Pennsylvania, and I did that as a doctor proudly for over 25 years. But now I am caring for 700, 800,000 people at a different level. And each and every one of you brought us an incredible message.

Mr. Widerman, I am so supportive of the dairy industry and what you do, and I am cognizant of the price per hundred and how hard it is for the dairy industry to survive and thrive, and this ability to understand where rural broadband can enhance your productivity, make your lives better, those people who provide us with affordable, nutritious food, that is what I am going to ask—I am going to come back and ask you to give me a take home message regarding that, or take back to Washington.

Mr. Angelini, I think as an educator, you brought significance to this meeting. You talked to us about the ability to educate, but allow parents to be connected and work with their students at home. We salute you for doing that, for bringing those issues to us and talking to us, interrupting your academic day. I am sure the students are enjoying that perhaps more than you are. But bringing that and talking to us, because as you realize, this is an issue that affects all of us. This is a bipartisan issue. You have two people here who work well together. You are not going to see this on the 7 o'clock news tonight, because there is no hijinks. There is no drama here today. There are people that are committed to making our lives, your lives better.

Mike Ross, the ability for industry to improve and survive, I need a take home message. I need a take back to Washington message in that regard, because the ability to provide more jobs and more industry is so important throughout south central Pennsylvania, and that is your skillset. That is what is in your toolbelt, and we need to hear that message as well.

Mr. Carson, from my hometown from Blair County, but covering a substantial part of this region. The economic development, the future of south central Pennsylvania, the future of Pennsylvania 13 rests a lot on your shoulders as well. And so, I have teed this up. I want each one of you—this is the final message that you have an opportunity to take back—to give us to take back to Washington.

So, Mr. Widerman, I will start with you.

Mr. WIDERMAN. I would just like to say that, you know, as far as agriculture goes or rural broadband, with profit margins not being where we think they should be or being so tight, rural broadband is extremely important to us because time is money. You know, from one day to the next could mean an incredible profit or loss, in our opinion. So, you know, rural broadband is extremely important, and goes all the way down the line to education, you know. Our next generation needs to be educated on rural broadband and in the technological age.

So, it is extremely important that it be accessible to everybody, you know, as we continue down the road.

Mr. JOYCE. Thank you, and thank you for being here.

Mr. Angelini?

Mr. ANGELINI. Dr. Joyce, you mentioned at the beginning that I am part of the Milken Educator Network. I am part of the Pennsylvania State Education Association and I sit on one of their state-wide committees. Both of those help me to hear a lot about what is happening in other parts of the state. More than that, I grew up in a fairly wealthy suburb of Pittsburgh, in the Hampton area near North Allegheny. I teach at Gettysburg College, which has a large number of very wealthy students who have a huge number of resources at their disposal. Part of that is systematic. Part of that is generational. We want to ensure that all of our students at New Oxford and across southern Pennsylvania have those same opportunities that I had as a student that they have at Gettysburg College, and that I get to see and hear across the state. And that begins with supporting the districts themselves, but more than that, with the families who live in them.

And so, whatever the Committee can do to support that effort, helps to level that playing field and give our students a chance to build it up for all of us.

Mr. JOYCE. Thank you, Mr. Angelini.

Mr. ANGELINI. Thank you.

Mr. JOYCE. Mr. Ross?

Mr. ROSS. First, what I would like to do is I would like to thank you and the Chairwoman for the way this has been conducted. And I mean, it is a breath of fresh air to see a bipartisan Committee being handled so civilly and in the interest of all of us, so thank you for that.

And I would like to—and the fact that you recognize that this is a problem, and that it needs to be addressed and it impacts every industry sector. It impacts education and workforce development. And as we look—and our economy has grown, but our only way that we can support the growth that is taking place, we need the infrastructure to be able to do that, and we don't have it right now. And so, anything that you can do as part of a broader infrastructure package to include broadband in it would be welcome across America.

Mr. JOYCE. Thank you, Mike. Thank you for being here.

Mr. Carson?

Mr. CARSON. Thank you, Dr. Joyce.

A big part of my world is finding funding sources, helping folks on the ground in the region that don't have a lot of capacity, in many instances, to secure those funding resources and ultimately implement successful projects. That is at the core of what we do at Southern Alleghenies. And every day, I see quite a few funding opportunities as it relates to broadband deployment and broadband infrastructure. There are a plethora of opportunities out there on both the state and federal level.

We have heard from the other witnesses today on the need. I think we can all agree that the need is certainly there. So, I find myself and the Commission finds itself somewhere in the middle. We are hearing about the need. We are helping to further investigate and define that need through our feasibility study that we are moving forward with in the next few months.

But then we find ourselves not being able to—we can access a lot of the funding that I have mentioned, as we did with the ARC

and EDA project in Somerset. Honestly, we haven't pursued any additional projects when there are funds to be had for these types of projects because of the fact that we don't think we can use it. We think that ownership is still going to be a huge concern whenever you are trying to partner with the private sector to subsidize some of these rural networks. If that issue alone can't be resolved in some way, I don't know how we put these dollars on the ground. That is one reason that we are looking at the cooperative model in the region, and I am hoping that gives us a new angle, a new strategy to help to deploy some of these important projects.

Mr. JOYCE. Thank you. That is concise. I appreciate that, Mr. Carson.

I yield.

Chairwoman FINKENAUER. Thank you, Dr. Joyce, and I again want to thank every single one of you for being here today and taking time out of your busy schedules. I know time is money, especially on the farm. It means a lot that you all took time to be here.

Thank you to the Committee staff as well. I know you traveled to get here today. You see Dr. Joyce and I work together, and our incredible staff also work really hard to find common ground and get things done. We are very much appreciative of your work. I also want to thank the law enforcement with us today. Thank you for being here and always making sure we are kept safe. Finally, thanks to all the folks in the audience who came here today as well.

Field hearings are incredibly important, like I said earlier. Bringing Congress to our communities means a lot. Thank you for welcoming me to Gettysburg today. I hope to have Dr. Joyce out to Iowa sometime, and now I have to show off our district.

It is just exciting to be able to find this common ground. As we work to make sure that we have policies that work for the entire country, it is so important that we understand each other's districts. This topic in particular touches agriculture, our kids, school districts, economic development, and our hospitals.

We know that access to broadband can mean the difference between business growing or closing their doors, and as Mr. Ross said, rural parts of our country being revitalized or left behind. Closing the digital divide is a top priority for me. It is why we are here. I will keep fighting to make sure that Iowans voices are heard on these important issues, and it is very obvious that Dr. Joyce will do the same for each of you.

With that, I would like to ask unanimous consent that members have 5 legislative days to submit statements and supporting materials for the record. Without objection, so ordered.

If there is no further business to come before the Committee, we are adjourned. Thank you.

[Whereupon, at 2:20 p.m., the Subcommittee was adjourned.]

A P P E N D I X

Committee: Small Business
Subcommittee: Rural Development, Agriculture, Trade, and Entrepreneurship
October 21, 2019
Harvesting the Digital Age: Connecting our Communities for a Better Future

Written Testimony from Brandon Carson
Director, Planning & Community Development
Southern Alleghenies Planning & Development Commission

Southern Alleghenies Planning and Development Commission (SAP&DC) serves as a Local Development District in partnership with the Appalachian Regional Commission (ARC), and as an Economic Development District in partnership with the U.S. Department of Commerce's Economic Development Administration (EDA).

The Southern Alleghenies Region consists of Bedford, Blair, Cambria, Fulton, Huntingdon, and Somerset Counties in South-Central Pennsylvania, and represents a population of about 500,000 people. The majority of the Region is rural, and many parts lack adequate broadband connectivity and cellular service.

While SAP&DC has known that connectivity in the Region is lacking, the issue recently surfaced as a top priority when conducting an 18-month planning process that was coined, *Alleghenies Ahead: Shared Strategies for a Stronger Region*. The plan recommended the formation of a Regional Broadband Task Force to begin promoting and advocating for improved connectivity throughout the Region. With representatives from both the public and private sectors, the newly formed Task Force has begun collaborating on the issue regionally. In coordination with the Task Force, SAP&DC was recently awarded a planning grant through the Appalachian Regional Commission's POWER (Partnerships for Opportunity and Workforce and Economic Revitalization) Program. In partnership with the six member counties, as well as Westmoreland and Fayette Counties to the west, SAP&DC is currently using the grant funds to complete an analysis of unserved and underserved areas in the region, inventory existing broadband infrastructure, determine community bandwidth needs, and identify deployment strategies to begin tackling the issue.

Through the study, the county commissioners in the region have tasked SAP&DC with investigating the potential formation of a broadband cooperative that could facilitate public-private partnerships to encourage new high-speed deployments in the region. Staff are currently in the early stages of developing a pilot wireless deployment in rural parts of Bedford and Fulton Counties with hopes of securing additional state and federal funding to replicate the effort in unserved and underserved areas throughout the region.

Prior to this effort, SAP&DC worked with the Somerset County Board of Commissioners on the proposed construction of more than 20 miles of fiber-optic cable to connect four industrial parks in the County. Because of its rural characteristics, historically, Somerset County has not been a prime target for private companies to expand their fiber networks; with the high cost of

expansion and low reward due to the relatively small customer base. One of the primary roles of government is to satisfy public needs that private industry cannot or will not meet. In this vein, the hope was to secure federal funding to alleviate the financial burden of fiber expansion within the county and facilitate the provision of much needed services to Somerset County businesses and residents.

As a result, Somerset County would be more equipped to compete with their more urban counterparts in a technologically advanced world. Additionally, by connecting the four business parks in a fashion running north to south through the center of the county, a strong fiber "backbone" could be established from which laterals could later be constructed to expand fiber into the far reaches of the county.

Grants awarded through the ARC's POWER Program and the EDA's Public Works and Economic Development Facilities Program provided Somerset County with an excellent opportunity to achieve this goal.

In May of 2017, the county was notified by EDA that it had been awarded a total amount of \$1,897,346 for the Somerset County Fiber Extension Project, inclusive of a 20% match component that the county would pass along to a successful vendor. The federally funded portion of the grant award, \$1,517,877, consisted of \$948,673 from ARC and \$569,204 from EDA. Even though the bulk of the grant funding came from ARC, due to ARC's limited capacity in relation to other federal agencies such as EDA, EDA was charged with administering the funding.

For EDA's Philadelphia Regional Office, the fiber extension is understood to have been the first of its kind. Because of this, the project was surrounded by a lot of optimism and excitement as many within EDA and those within other governmental agencies hoped to use the effort as a model for developing similar broadband deployments in the future.

Due to the nature of the federal funds, the project was subjected to a competitive request for proposal (RFP) process. The development of the RFP proved to be challenging, however, from a federal compliance standpoint; numerous drafts of the RFP were circulated over the course of several months before EDA was able to provide an approval of the final draft. The regulatory requirements of the traditional infrastructure projects that EDA was accustomed to did not fit neatly within the confines of a fiber deployment project. As a result, the federal agencies overseeing this effort have been forced to offer novel interpretations of their respective regulations, all in an effort to establish defined parameters for the oversight of the project.

Initially, the project generated a lot of interest from vendors; however, as vendors became more familiar with the various federal requirements, the interest began to dwindle. It was perceived that the grant had "too many strings attached."

The fact that EDA and ARC guidelines require the county to own the infrastructure became a major sticking point, essentially, vendors were asked to put time, effort, and capital into developing infrastructure that they may never own. EDA's guidelines provided for a 20-year lease

to the successful vendor; however, there were still concerns among the vendors regarding control and ownership of the fiber. This was one of the biggest challenges when trying to advance the project and it is understood that the ownership requirement is somewhat unique to EDA and ARC guidelines. For example, grants awarded through the Federal Communications Commission and United States Department of Agriculture's Rural Utility Services can go directly to a provider, even if that provider is a for-profit entity. The EDA and ARC guidelines, as written, do not fit well in the constraints of a broadband project. The guidelines were written for more traditional economic development efforts to include sewer, water, and road improvements; infrastructure that is typically owned by a government or non-profit entity. As priorities have evolved in recent years and EDA and ARC have been charged with investing in broadband initiatives, the federal regulations have not been adapted and are inhibiting these agencies from assisting rural communities with their broadband needs.

Ultimately, the county never did receive a vendor proposal that was fully responsive to the RFP. With no other option, the county continued to work with EDA and ARC to try to address and resolve the vendor concerns. Although the parties have had some success in developing creative solutions to these problems, the project continues to get caught up in federal regulations as forces beyond the effort have recently influenced the project's possible outcomes.

During the RFP process, an incumbent provider in the region contacted Somerset County to advise that they were already providing broadband services in one or more of the targeted industrial parks. Earlier this year, that same provider announced plans to expand high-speed services to additional industrial parks in question. Section 8.4—Restrictions on Assistance of the ARC Code states the following: "ARC grant assistance shall not be used for: a. any form of assistance to relocating industries; b. recruitment activities that place a state in competition with another state or states; and c. projects that promote unfair competition between businesses within the same immediate service area." Item "c." of the provision ultimately halted the EDA and ARC investments in Somerset due to the existing provider offering high-speed services in the industrial parks. As directly stated in their Code, ARC is prohibited from providing grant funds that may potentially lead to unfair competition.

When interviewing businesses located in the parks about their existing broadband services, it was evident that there were real concerns about the reliability and affordability of the current services available to them. In these situations, ARC is relying on the incumbent provider's data as it relates to the area served and the speeds being offered. Coverage maps are not always reliable, and speeds are often overstated. Competition is necessary in order to adequately serve residents and businesses in these rural areas; however, ARC does not have any guidance from Congress that suggests subsidizing a competitor is allowable under their current Code.

In summary, there have been several challenges when attempting to use federal funding to deploy high-speed broadband services to parts of rural Somerset County. Firstly, the EDA and ARC regulations requiring that the proposed fiber infrastructure be owned by an eligible grantee (a government or non-profit entity), Somerset County, led to uncertainty with potential private sector partners. Ultimately, this resulted in the interested vendors walking away from the

project. Secondly, the provision in ARC's Code prohibiting investments that promote unfair competition resulted in EDA and ARC recommending that the grant award be terminated.

Moving forward, Congress may consider reviewing the ownership requirement for broadband infrastructure investments implemented by EDA and ARC. In addition, authoring more clear and concise guidance for EDA and ARC funded broadband projects would allow applicants and grantees to plan for and better navigate the federal regulations to successfully complete high-speed deployments. Lastly, the "unfair competition" language in Section 8.4 of ARC's Code is broad and open to interpretation. There is an opportunity to set additional parameters to provide clarity and offer ARC with guidance on better ways to implement these types of projects when there are incumbent providers offering services in portions of the proposed coverage area.

EDA and ARC have a unique opportunity to work in concert with other federal agencies to improve broadband connectivity to the rural parts of the country that so badly need these subsidies. However, in order to do so, the federal regulations they must abide by need to be adapted to better fit the current needs.

SAP&DC would like to thank Chairwoman Finkenauer, Ranking Member Dr. Joyce, and the Distinguished Subcommittee members for the opportunity to provide this testimony.

US House of Representatives: Committee on Small Business
Rural Development, Agriculture, Trade, and Entrepreneurship Subcommittee
October 21, 2019
Gettysburg, PA

Madam Chairwoman Finkenauer and Ranking Member Joyce as well the other members of the sub-committee, I am grateful for the opportunity to provide testimony today given the correlation of broadband technology to economic development. My name is Mike Ross, and I am President of the Franklin County Area Development Corporation (FCADC). As a matter of background, the FCADC is a 501(c) 6 private non-profit corporation charged with formulating, implementing, and promoting a comprehensive Franklin County-wide economic development strategy that nourishes planned growth and family sustainable employment opportunities. The strategy is based on the retention/expansion of existing companies, the selective attraction of new industries, and the start-up of new businesses. Over the past 33 years, our office has helped with 765 projects that have facilitated more than \$2 Billion of new capital investments in Franklin County via more than \$325 Million of direct economic development resources. This investment has resulted in the creation/retention of more than 50,000 jobs.

Franklin County is among the fastest growing counties in the state. Strategically located along the Interstate 81 corridor with easy access to Interstates 78, 76 and 70, the County is within a one day's drive of 50% of the North American population, including the major population centers in the mid-west and northeast. Additionally, Franklin County is within 75 minutes of the Port of Baltimore and three hours from the Port of Philadelphia. When combined with two class one intermodal terminals, Franklin County is an ideal location for myriad industries including manufacturing, transportation, logistics, and defense. To date, Target Distribution Center, Ulta, Inc., Staples Distribution, Food Lion Distribution, Ingram Book Company, and Procter & Gamble have all established warehousing/distribution centers in the County. Franklin County is also home to manufacturers such as Manitowoc Crane Group, Volvo Construction Equipment, JLG Industries, Epiroc Drilling Tools, Johnson Controls, CAM Superline a Novae Corporation, and Jamison Door – BMP, as well as the Letterkenny Army Depot, to name a few.

In addition, Franklin County is among the top 5 agricultural producing counties in the Commonwealth.

Infrastructure is the foundation of economic development. Retaining, attracting, and/or supporting the start-up of quality employers requires the availability of a full range of public utilities, including telecommunications and broadband technology. I have often remarked that economic development is not possible unless you can flush a toilet. The same can be true for broadband internet. Broadband needs to be considered part of our national public infrastructure, just like roads, water, sewer, ports, airports, rail networks, and a reliable electric grid.

To state the obvious, we live in a globally connected economy and for our companies to effectively compete, especially those in rural America, they need to have high-speed internet and broadband connectivity. The transfer of medical and technical documents, fabrication drawings, and video conferencing **requires** high-speed internet and broadband connectivity. As I mentioned previously, Franklin County is home to some of the most widely recognized manufacturers in the world, and their ability to connect to their other locations, is critical. Moreover, as our national conversation has shifted to the importance of education and workforce development, to include online and distance learning, high-speed internet is essential.

As it stands now, the lack of broadband capacity in rural settings creates a disparity in educational opportunities and outcomes. According to a June 2019 report from the Center for Rural PA entitled "*Broadband Availability and Access in Rural Pennsylvania*", over 800,000 Pennsylvanians do not have access to FCC levels of broadband connectivity, classified as download speeds of a minimum 25 mbps.

- Locally our median download speeds are abysmal...according to the report:
 - Franklin 12 mbps (home of Manitowoc Crane, VCE, JLG assembly & engineering operations, Penn State Mont Alto, Wilson College)
 - Adams 5.9 mbps
 - Fulton 5.9 mbps (headquarters of JLG Industries)
 - Perry 6.0 mbps
 - Blair 14 mbps
 - Cumberland 9.3 mbps (Shippensburg University and Dickinson College)

It is important to note that Governor Wolf in collaboration with the Pennsylvania Legislature has created a bipartisan *Broadband Initiative* whose goal is to address the challenges faced by rural Pennsylvania. Launched in March 2018, the Pennsylvania Broadband Investment Incentive Program made available \$35 Million in financial assistance to private providers by bidding on service areas within Pennsylvania in the Federal Communications Commission (FCC) in the Connect America Fund II Auction. Any provider participating in Pennsylvania's incentive program was required to exceed the FCC's requirements and to meet the Governor's goal of providing 100 mbps or more service by June 2022.

To recap, the availability of high-speed broadband internet in rural America is **CRITICAL** to a vibrant, growing economy and of a highly skilled workforce that is prepared to compete in an ever-expanding global economy. Again, thank you for the opportunity to testify.

Testimony of
Anthony Angelini

Member of the National Education Association and Pennsylvania State Education Association
Teacher of English and Social Studies
New Oxford Middle School; Conewago Valley School District
Conewago Valley, Pennsylvania

Before the
Committee on Small Business
Subcommittee on Rural Development, Agriculture, Trade, and Entrepreneurship
Hearing on "Harvesting the Digital Age: Connecting our Communities for a Better Future"
October 21, 2019

Good afternoon Chairwoman Finkenauer and Congressman Joyce. My name is Anthony Angelini, and I am grateful for the invitation to speak about connecting our communities, our students, and their families in order to close the digital divide for a better future.

As an English and Social Studies teacher for the past eleven years at New Oxford Middle School in the Conewago Valley School District, it is a particular honor to offer testimony. In those two subjects, we emphasize the power of language to interact with the world and the need for each of us to strengthen our communities through civic action. I value the opportunity to model both for my students today.

Conewago Valley School District is centered in and around the town of New Oxford, Pennsylvania. Our community does not have a YMCA or Community Center. Our public library is only open until 5:00 pm three nights a week. There is no Panera or Starbucks. Forty-four percent of our students qualify for free and reduced lunch.

For a significant portion of our young people, the district offers the best and perhaps only reliable access to high-speed internet. Even there, the Federal Communication Commission's (FCC's) E-Rate Program, which provides discounts to schools like ours for ongoing internet costs, has been instrumental in strengthening access. In fact, five years ago Conewago Valley had only a 50 megabytes per second pipeline for 4,000 students. One of our IT staff members asked me to imagine inviting my closest 2,000 friends, and their iPads, over to watch Netflix. Our network was attempting the same feat. In a typical week, internet service failed at least twice. Teachers began to abandon lessons that integrated technology. In the moment, it felt like time was moving backward.

With the E-rate Program, careful budgeting, and support from federal and state grants, the district currently has a 400 megabytes per second connection. Now in line with the FCC's old target of 100 kilobytes per second per student, we can support streaming video, online collaboration, and other elements of digital learning. However, we still fall short of the FCC's current target of one gigabyte per 1,000 students, deemed necessary to support digital learning.

In our community, a lack of equitable access to digital resources is a harsh reality. We have students that, once they leave school, do not have internet access at home. I have heard this described as the "homework gap." Without internet access at home, those students face significant academic consequences. Drawing from my own classroom experience, I will highlight the following three examples: closing this gap to ensure all students have access to learning, to engage families with school, and to ready our district to adapt to changes in state policy.

I am a member of Conewago Valley's Road to Relevance team, often referred to as R2R. R2R is a ten-year plan to ensure that all of our 4,000 students are prepared to thrive today and excel tomorrow in an ever-changing, global society. As a part of R2R, we commit to putting digital learning devices in the hands of students. Starting this year, every student in grades nine through 12 was assigned an iPad. In 2020-2021, 1:1 will expand to the middle school and my classroom. R2R emphasizes innovative curriculum, professional development, and a focus on equitable access to technology. To amplify teaching and learning, we rely more and more on learning platforms, such as Schoology, which are digital classrooms that stretch beyond the school walls.

One strategy in widespread use across education is the flipped classroom model. Students are assigned video lessons to explore independently. Class time is then used for application, collaboration, and higher-level thinking. Alternatively, I often use such instructional videos to provide support for struggling students after a lesson has concluded. Just last week, students were writing formal position papers. I recorded mini-lessons on citations in MLA style, the conventions of quotations, and strong claim statements. None are easy skills, and most seventh-graders need more than one view to revise their drafts. For many students, these resources give them access to class content at their fingertips. For other students without reliable access to broadband internet, the very same resources are out of reach.

At least once a week, I have students come to my room as soon as they get off the bus in the morning, during their lunch periods, or after the school day has ended to complete the digital assignments they cannot do at home. For 12 and 13-year-olds, however, transportation is a barrier. Our school is considering revising our schedule to include a resource period, in large part to offer time with devices and internet access to our students in need. Such a change comes

with costs. Every minute allocated to a resource period would have to be taken from other classes, such as language arts, math, science, or social studies.

Issues of access impact our students' families and their ability to collaborate with schools as well. Next month, the middle school will host parent conferences. It is an invaluable opportunity to strengthen relationships with parents and address the needs of our students. We offer two nights of after-school conferences and one day from noon until 8:00 pm. Families compete fiercely for the evening sessions that take place after 5:00 pm.

As with so much of our lives, scheduling is now done online through Skyward, our digital gradebook. Though parents are thrilled to be able to track student scores through an app on their phones, the mobile version has its limits. Viewing a grade is straightforward, scheduling a conference is not.

It is the parents with access to broadband internet and computers who can best navigate scheduling with the program. Common Sense Media reports ([Education Week](#), 15 February 2019) that families making over \$100,000 were two and a half times more likely to have a laptop and broadband access than families making under \$35,000. Within the first hours of the schedule window, my email is filled with notifications that another prime spot has been claimed by the parents of a student already supported by extensive social and cultural capital. The families and students who most need a strong bridge to school are left behind.

Reliable access to digital resources is a systemic issue that shape policy decisions as well as student and family issues. Pennsylvania's Act 64 of 2019 allows public schools to seek permission from the Pennsylvania Department of Education to use a flexible instructional day. The law defines "flexible instructional days" as days during which instruction is provided to students outside of school when buildings are prevented from opening due to hazardous weather, damage to a school building or another temporary circumstance. Passed with the best intentions to offer flexibility and advance students' education in difficult circumstances, the law has the potential to widen the digital divide.

The underlying assumption of Act 64 is that students will be able to access digital platforms, online resources, and collaborative tools from home. Since the most common cause of a flexible instructional day is expected to be snow, it is not reasonable to expect students without connectivity to travel to a WiFi hub. Further, many of my students are not yet ready to be home alone while parents work. Instead, they often stay with caregivers - especially grandparents - who may be less likely to have reliable access, particularly when they might be responsible for several children.

As an educator, I must confront the difference between even an 80% participation rate and universal engagement. Future lessons are derailed if six out of 30 students have not completed prerequisite tasks. Such unequal footing is enough to stop even the best lesson in its tracks.

In anticipation of connectivity concerns, many districts have prepared flexible snow day lessons in advance. For example, they might prepare bags that can be distributed to students before a storm. Yet these types of lessons are often disconnected from the curriculum and involve tasks that are far less engaging, far less interactive, and far more likely to be below-grade-level than equivalent blended learning models. Communities that must rely on this strategy will be setting their students a day behind peers who live in districts with more reliable access.

The lack of reliable access has a direct impact on students, their families, and public policy relevant to schools. I saw the impact in lessons last week, I will experience it during parent conferences next month, and I will need to account for it as our district implements new regulations and legislation in the coming years.

Helping me examine these issues with a wider lens, I serve on the Pennsylvania State Education Association's Council on Instruction and Professional Development. I am also part of the Milken Educator Network and a former officer of the Pennsylvania Teachers' Advisory Committee. These positions have exposed me to the innovative educational advances taking place across the Commonwealth and the country. The future belongs to the educated, and never before has education depended so much on equitable, robust access to digital resources.

This hearing is aptly named. We want all of our students to be able to reap the benefits of our digital age. Digital resources offer powerful opportunities for students and have the potential to open wide the doors to future success. Certainly, I want each young person who walks through my classroom doors to be connected to a better future. Policymakers, such as yourselves, can play a critical role in leveling the field and eliminating the barriers to that future as you consider building on the bipartisan efforts in Congress that have provided resources to our communities.



Statement of the Pennsylvania Farm Bureau

**TO THE
HOUSE COMMITTEE ON SMALL BUSINESS
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
TRADE, AND ENTREPRENEURSHIP**

**REGARDING: HARVESTING THE DIGITAL AGE: CONNECTING OUR
COMMUNITIES FOR A BETTER FUTURE**

October 21, 2019

Presented by Brock Wideman
President, Adams County Farm Bureau

Chairwoman Finkenauer, Ranking Member Joyce, and Members of the Subcommittee:

Thank you for inviting me to speak today on rural broadband and the importance for agriculture. My name is Brock Widerman. I am the President of Adams County Farm Bureau. I have served as President since 2017, and have been a member of our county board since 2012. My wife, Joy, is a partner/owner of JoBo Holstein Farm, a family farm in Gettysburg, Pennsylvania. The family milks approximately 1,000 Holstein and Brown Swiss cows, and raises 925 head of heifers, and grow corns for silage and ryegrass for forage on approximately 1,000 acres. I work on the farm as well, performing field work and mechanical repairs.

I offer today's testimony on behalf of Pennsylvania Farm Bureau, the state's largest general farm organization. We have 54 county Farm Bureaus, and members stretching across the state, representing a vast array of agricultural operations. Farm Bureau appreciates the opportunity to share our perspective on the necessity of broadband for the agriculture industry. Expanding broadband services to rural areas has been a chief concern of Farm Bureau. In today's testimony, I'll share some perspective on how we use broadband and technology at JoBo, some challenges my fellow farmers have faced, and the overall needs for agriculture.

Agriculture is Changing

Today, broadband is no longer a luxury, it is a necessity. I have spent my entire life in agriculture, growing up on a layer hen operation before joining JoBo Holsteins. During this time, I have seen the growing importance technology has played in agriculture. Now, technology is critical to our everyday lives, and fixed and mobile broadband is absolutely essential to modern agricultural operations. Farmers depend on broadband just as we depend on highways, railways and waterways to ship our food, fuel and fiber not only across the country, but around the world.

Many of the latest yield maximizing farming techniques require broadband connections for data collection and analysis performed both on the farm and in remote data centers. Farmers are embracing technology that allows their farming businesses to be more efficient, economical and environmentally responsible. Today's farmers are using precision agricultural techniques to make decisions that impact the amount of fertilizer they need to purchase and apply to their fields, the amount of water needed to sustain crops, and the amount and type of herbicides or pesticides needed. These are only a few examples of how farmers use broadband connectivity to achieve optimal yield, lower environmental impact and maximize profits.

Farmers rely on broadband access to manage and operate successful businesses, the same as small businesses do in urban and suburban America. Access to broadband is essential for farmers to follow commodity markets, communicate with their customers, gain access to new markets around the world and, increasingly, to ensure regulatory compliance.

Real-World Examples

There are so many opportunities in agriculture to use technology, but for it to be fully utilized, we need broadband access. For those of us who have generally reliable broadband access, it is sometimes easy to forget the role it plays in our everyday lives – because it is just how we do our jobs. We often take this access for granted, but the moment there is a problem, we are reminded just how important it is.

At Jobo, we recently invested in an auto-steer corn planter and GPS spraying technology. Already, these tools are helping us become more efficient with our crop farming and as we fully utilize this technology, we will become even more reliant on broadband access.

Moreover, as our equipment becomes more advanced, repairing equipment becomes increasingly challenging. I can't always run down to the local store for a part. As a result, I often use the internet – particularly my phone – to research how to perform an equipment repair; order parts – or determine which stores may have the needed parts; and for our more high-tech equipment, I may need to utilize tech support (sometimes from vendors overseas). Clicking a few buttons from the convenience of my phone can often streamline a process that once might have involved calling around to multiple stores or driving long distances to locate the parts and information I needed to make a repair.

Additionally, my wife is the herdsman for JoBo, and is responsible for the day-to-day care of the cows. She uses both her phone and the computer for recordkeeping, and is able to look up milk records, past treatment plans, and other statistics that are necessary for cow and overall herd health. Being able to immediately look up information when there is a sick cow, or a concern about milk production, is essential for her job.

And, for a few more examples of the importance of broadband access on our operation:

- My father-in-law utilizes forward contracting for milk and for feed which plays an important role in helping keep our operation profitable and able to employ multiple generations of our family.
- JoBo Farms has a Facebook page to help educate the public about our family farm. As the public becomes further removed from agriculture, it is important that we educate the public, and social media is a efficient way for us to do that.

I've been able to tell you about some of the great things we can do with reliable broadband access, but there's also plenty of examples of the challenges farmers face as well. In fact, here are two stories of Pennsylvania farmers who cannot fully utilize emerging technology because they lack broadband access:

- *Bethany and Adam Coursen* – The Coursens own a dairy farm in Centre County—not too far from State College. A few years ago, the family made a significant investment in the future of their farm by installing a robotic milker. This technology allows a robot to do all the milking related labor on the farm, allowing the Coursens to focus on other farm tasks. In addition, the cows wear a device that collects relevant data that the Coursens can review to see if any of their animals need attention. However, the lack of high-speed internet service at their homes makes it difficult to get needed software upgrades for the equipment. It also prevents technicians from being able to remotely access their system and perform diagnostic repairs. They have been able to devise workarounds, using a cell phone hotspot, but this is in no way how the system was designed. The couple pays around \$250 a month for satellite internet service that can go out when a storm passes overhead.

- *Timi and Keith Bauscher* – The Bauschers live in northern Berks County. Their farm is within reasonable driving distance of Interstate 78 and the encroaching development from Lehigh County. The Bauschers have several on-farm businesses that require reliable internet service, including a farm market. Along with needing good internet service for their social media and e-mail marketing, the Bauschers use a program to take credit card data from customers for sales. Using their current internet service at the farm would be too slow for credit card sales. Each transaction would take several minutes, which is not customer friendly. Nor is it realistic to require cash only sales in a world that has largely moved to credit card transactions. Instead, the Bauschers uses a service that stores all of their credit card transactions. At the end of the day, they take the device into their house and use the internet to process all transactions, which can take upwards of 30 minutes or more. They keep their fingers crossed that no credit card transactions are declined. But the risk is worth the potential loss of business that would come from not offering credit card sales.

Aside from on-farm necessity, rural broadband is also essential to the quality of life for rural Americans. High-speed internet access allows individuals to reach health care and educational services, government agencies, and new business opportunities. My three children are 13, 15, and 16 and recently the two oldest received iPads from the school. They are expected to do homework and assignments via their iPad. We are lucky to have reliable internet at our house, but for students who do not, the school suggested that students use the public library to complete assignments. I thought about what it would mean if I had to take my children to the library to complete school assignments every day – or even several days a week – and I just can't imagine doing that, while fitting in all the other day-to-day tasks and events for our family.

Yet, for many who lack reliable broadband, that is exactly what they face – traveling to get free Wi-Fi, so that they can complete a task. David Bentrem, whose farm is in Washington County, PA, doesn't have broadband – or even internet – on his farm, only a mobile hotspot, which typically wasn't fast enough for any major tasks. He has gone to the local McDonalds to back up his phone, on which he keeps a lot of his farm data. His daughter has used the McDonalds do homework or research for school as well. In today's digital age, families shouldn't have to go to libraries – or fast food restaurants – to do simple, yet essential tasks, that many of us take for granted.

Challenges and Opportunities

You might think these are isolated examples, but according to USDA's "Farm Computer Usage and Ownership, 2017", 29 percent of U.S. farms have no access to the internet, while according to the FCC¹, 26.4 percent of rural Americans lack access to broadband. In Pennsylvania, roughly 18 percent of rural Pennsylvanians lack access to internet service, or only have low-speed options. Research performed by the Center for Rural Pennsylvania² found that

¹ FCC Broadband Progress Report: <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>, 2019.

² Center for Rural Pennsylvania's study: "Rural Broadband Availability and Access in Rural Pennsylvania": https://www.rural.palegislature.us/publications_broadband.html

median broadband speeds across most areas of the state do not meet the FCC's criteria to qualify as broadband. In fact, research showed that there were no counties in Pennsylvania where at least 50 percent of the populace received broadband connectivity, however, FCC's official broadband maps show 100 percent broadband availability across the state.

Put simply, this study has shown that actual on-the-ground upload and download speeds lag behind the advertised speeds by service providers, and also highlights that the current federally-available maps and data used to show broadband coverage is flawed. Without an accurate picture of broadband coverage, we will not be able to adequately direct federal funds for broadband buildout, or even know where the problems are by looking at a map.

The need for reliable broadband access is critical for rural America – and agriculture. Given the recent financial challenges of the farm economy, it is more important than ever to make sure we are utilizing all the tools available to agriculture. According to USDA's "A Case for Rural Broadband",³ if access to broadband and adoption of digital agricultural technologies matched producer demand, U.S. agriculture would realize benefits amounting to nearly 18 percent of total U.S. market production, or \$64.5 billion annually, based upon 2017 levels.

Farm Bureau Policy

Rural Broadband is a strategic priority for Farm Bureau in 2019. Our policy supports using the Universal Service Fund (USF) to provide affordable communication services for rural areas and to ensure rural telecommunication technology is equitable to the infrastructure in urban and suburban areas. Farm Bureau also supports using a combination of tax incentives, grants and/or regulation to increase the use of broadband access in rural areas. Using USF funding to improve rural access to modern, affordable broadband services is critical for the economic sustainability of rural Americans.

Moreover, Farm Bureau supports, H.R. 3162, *the Broadband Data Improvement Act*, This bipartisan bill would improve the accuracy of broadband coverage maps and better direct federal funds for broadband buildout. This bill corrects the current method of gathering broadband coverage data by requiring broadband providers to report data that is significantly more accurate, granular and transparent. More granular and accurate maps are critical to successfully target and distribute federal broadband program.

Conclusion

Farm Bureau appreciates the Subcommittee's interest and attention in rural broadband, and I hope my testimony helped to shed more light on the challenges and opportunities agriculture faces with this issue. Rural broadband is an essential part of agriculture, and Farm Bureau looks forward to working with you to make sure all of agriculture has access to reliable fixed and mobile broadband.

Thank you for the opportunity to testify today.

³ USDA: A Case for Rural Broadband: <https://www.usda.gov/sites/default/files/documents/case-for-rural-broadband.pdf>

