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FIELD HEARING: MACHIAS, ME: CONNECTING RURAL SMALL BUSINESSES TO BROADBAND: CHALLENGES, SUCCESSES, AND HOW TO DO BETTER

HEARING

BEFORE THE

COMMITTEE ON SMALL BUSINESS
UNITED STATES
HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

HEARING HELD
SEPTEMBER 6, 2019



Small Business Committee Document Number 116–041
Available via the GPO Website: www.govinfo.gov

U.S. GOVERNMENT PUBLISHING OFFICE
37–541 WASHINGTON : 2019

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Questions for the Record:
None.
Answers for the Record:
None.
Additional Material for the Record:
None.

CONNECTING RURAL SMALL BUSINESSES TO BROADBAND: CHALLENGES, SUCCESSES, AND HOW TO DO BETTER

FRIDAY, SEPTEMBER 6, 2019

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SMALL BUSINESS,
SUBCOMMITTEE ON CONTRACTING AND INFRASTRUCTURE
Washington, DC.

The Subcommittee met, pursuant to call, at 3:30 p.m., at University of Maine at Machias, Lecture Hall Science 102, 116 Obrien Ave, Machias, ME, Hon. Jared Golden presiding.

Present: Representatives Golden and Stauber.

Chairman GOLDEN. How many of you have been to a hearing in the state legislature in Augusta? All right. So we are all pretty used to the gavel. All right, good. I am not. I never chaired a committee in the state legislature.

Good afternoon. It is good to see you all here, and thank you for coming. We call the Committee to order. I want to thank you all for coming out, and a special thanks to the witnesses for taking part in this today, I really appreciate it. It is an issue that Congressman Stauber and I think is critically important, and I know you do as well.

I also want to thank Mr. Stauber. He is the Subcommittee's Ranking Member, and he has come to join us today all the way from Minnesota. Pete and I have been working together for eight months now in Congress, running this Subcommittee, the Small Business Committee Subcommittee on Infrastructure and Contracting. He is just a great guy and a real pleasure to work with. I feel lucky and blessed to have someone on the other side of the aisle sitting next to me in the committee room who is serious about serving his community and serious about working together to find solutions.

We held one of these hearings out in Minnesota in his district, talking about broadband in rural communities. I found that Minnesota was a lot like Maine, other than it was very flat. People there had—their accents were funny.

[Laughter.]

He might think that ours are, so we will let him tell you one way or the other. But it has been great working with him to try and get things done for small businesses in America.

For those of you in attendance, I would like to share just a little bit of background on proceedings. It is a formal field hearing of the House Committee on Small Business. Due to this format there is,

unfortunately, not opportunity built in for questions or public comments from the audience during the hearing itself. However, I want to thank you for your attendance. My staff and myself, Congressman Stauber, are going to be sticking around afterwards to field questions and talk to you, and we look forward to that, so thank you for being mindful.

With this field hearing we are bringing Congress to Washington County for I think what might be the first time. I don't think we have had a congressional hearing in Washington County before. Field hearings play an important role in Congress' work. Traveling to Washington, D.C. and testifying before Congress creates numerous barriers in costs and time that can prevent important voices from being heard. Field hearings serve to bring the work of the Committee closer to the people that we represent and offer our communities the opportunity to share their views on the issues that matter. I am proud to bring the Subcommittee here to Machias to hear directly from my constituents.

For many Americans living in rural parts of our country, especially here in Maine, access to high-speed broadband is still not a reality. In our district alone, at least 80,000 people don't have access to a fixed high-speed Internet connection. This is not just a problem in Maine. In fact, 58 percent of Americans living in rural communities believe that lack of access to high-speed Internet is a problem in their hometown, and they are right about that.

These Americans and entrepreneurs need access to affordable broadband services at comparable speeds. Both parties agree that the broadband gap is a problem and there is bipartisan consensus in Congress that we need to tackle this problem. There are many issues in our politics these days that divide Americans where we seem to be moving away from solutions rather than towards them. Broadband just isn't one of those issues, thankfully.

We can make progress on this issue working together, and we plan to seize this opportunity and show the American people that Congress can work together to help improve lives and our communities.

Broadband is such an important issue to tackle. We all know how crucial successful small businesses are to rural communities. They provide good jobs and bring in new people. They revitalize old Main Streets and can lift the entire economy of a rural area. But without access to reliable Internet, small firms just aren't set up for success. They miss opportunities to connect with new customers and take advantage of cost-saving tools like digital payment processing and online distribution services.

On the other hand, small businesses that are digitally connected earn twice as much revenue per employee, experience four times the revenue growth year over year, and are three times more likely to create new jobs.

So it is clear that small businesses in communities in rural areas are being held back by a lack of access to high-speed broadband. Recognizing that rural areas with challenging terrain and low population density are unlikely to attract private investment in broadband infrastructure, the government needs to improve. We need to do what we can to improve this situation by identifying

these areas of need and providing support to make these areas economically feasible for broadband service.

While the policy debate inside the Beltway sometimes gets bogged down in the nitty-gritty details, nearly everyone agrees on this basic problem. So when private investment fails to provide what are essential services that promote economic development, we as policymakers must look at every available option to bridge the digital divide for rural America.

That is why we are stressing the need to coordinate Federal resources and make targeted investments in broadband infrastructure through mechanisms that are accessible for providers large and small, private and public. While Federal agencies like the FCC and USDA have made investments through ongoing support, loans, and grants, much more should be done.

First and foremost, the Federal Government must have accurate data to ensure that funds and resources are efficiently allocated to expand coverage to unserved areas. There are reports and widespread public outcry confirms that the FCC's maps are grossly overstating the number of rural households that have broadband. I think some of you may have experienced this here in Maine. I know it was the case out in Minnesota. But we have had hearings in Congress that show that this is a widespread problem across the country.

We had hearings specifically about broadband mapping and rural broadband access. I have also led a letter, working with Congressman Stauber, to the FCC Chairman, calling on him to improve the Commission's data collection and require carriers to submit more granular, more accurate data about broadband availability.

In response, the FCC has now issued an order requiring new data collection that will capture more accurate data and potentially phase out their Form 477 altogether. You may not know what a Form 477 is, but I think maybe some of the people testifying and other people that work on this issue likely do.

I, along with Ranking Member Stauber, will be keeping a watchful eye on the FCC's progress and continue to push for maps that provide a true and accurate account of broadband service in our country.

Second, as Chairman of this Subcommittee and a member of the Democratic Rural Broadband Task Force, I continue to push legislation that delivers Federal funding for broadband infrastructure investments. In fact, I am currently working on a bill with Ranking Member Stauber to direct more funding to deploy last-mile broadband infrastructure specifically to small businesses in rural communities.

Third, Congress has an important role to play in making sure that existing Federal broadband programs are as effective as possible. Not only should they be targeted to the right areas using accurate information, but they should be designed and run so it is possible for new market entrants to participate and bring innovative ideas to the table. Too often, this is just not the case. I hope to discuss this issue with our witnesses today so that the Subcommittee will have guidance on issues that we can work on to improve.

Members of this Committee have heard from small firms across the country about slow download and upload speeds and unreliable connections. Right here in Maine, we have the second slowest broadband speeds in the country. We also have companies, municipalities, utilities, and other stakeholders doing impressive and innovative work right here in Washington County to bring broadband into their communities, and we need to learn from them. That is why we have asked these folks to be here to testify today. I look forward to the discussion that I think will shed light on ways to improve connectivity in rural communities.

I look forward to hearing from our witnesses, and we will be taking your suggestions back to our colleagues in D.C. as we work towards increasing the level and effectiveness of Federal investment in broadband so that we can bridge this digital divide in rural America.

I thank each of the witnesses for joining us, and I look forward to having a great discussion.

I would now like to yield to the Ranking Member, Mr. Stauber, for any opening statement he would like to make.

Mr. STAUBER. Well, thank you very much, Chairman Golden, for holding this hearing in the beautiful state of Maine, and I appreciate your leadership that you have provided on the Committee. And above that, I appreciate your friendship.

One of the things that we did in the 116th Congress was—this nation is divided, and I am an old hockey player, so the hockey analogy is from the greatest hockey coach, Herb Brooks. The name on the front of the jersey means more than the name on the back, and when I go into that Committee hearing, it doesn't say Republican or Democrat. It says USA on it.

We have made a commitment in the 116th Congress that we are going to move America forward together. That is the only way we are going to do it. I have great respect for Jared. His story is unbelievable, and he is a great person. The friendship means more than anything and what we will do today because of your commitment to not only the State of Maine but this country. I am proud to work with you, and I am proud to be here. When you asked, there was no hesitation. I wanted to be a part of this process.

With that being said, rural America matters. Rural Minnesota, rural Maine matters. We have been talking about this for a long time. I don't have a lot of patience with the speed of government. I own a small business myself. For 29 years I have owned a small business, my brothers and I, through the ups and downs, and I think that for me, when I ask the question who is the Federal Government, we are the Federal Government. It is not Jared and I. We are the Federal Government, and we have to listen. We have to make those investments in those rural communities. We have to make sure that rural broadband is brought to the rural communities, not just to the metropolitan areas, because the schoolchildren in rural America, in rural Maine, matter. The hospitals in rural Maine matter. This is part of the bringing the opportunity for the country to really live, move your businesses out to rural Maine and rural America and rural Minnesota, because our quality of life is awesome.

We have enough rural legislators in Congress that we can push this initiative, and I am looking forward to hearing from the experts on the hiccups you are coming across, the roadblocks you are coming across, so we can go into Congress and push that message to be able to effect the deployment across the nation and into rural Maine. In the rural, most eastern part of Maine, it matters. The City of Machias matters.

So I am here to listen, to learn, and, as Jared talked about, we are going to take questions afterwards, and we will stay as long as we need. It is a pleasure to be here, and I want to listen and hear from the experts.

So thank you, Mr. Chair.

Chairman GOLDEN. Thank you. The gentleman yields back.

I will just say that for those of you out there who are watching or are in the crowd, if you are a big Black Bear fan or a hockey fan, you may judge the name on the front of the jersey that Pete used to wear when he came here in 1988 to play against the University of Maine, the Black Bears, in hockey.

[Laughter.]

Mr. STAUBER. I wasn't going to bring that up, Mr. Chairman.

[Laughter.]

Chairman GOLDEN. He is an amazing guy. He was one hell of a hockey player, a law enforcement officer, now a member of Congress. He is married to a woman who served our country for—how many years, Pete?

Mr. STAUBER. Twenty-four.

Chairman GOLDEN. Twenty-four years. That is, to me—that is an American family right there, in a big way. He is all about service, and I love what he has to say about working together to improve our country. Like I said, I feel very lucky and fortunate to have this friendship and to have such a good guy to work with professionally in Congress.

Thanks again for coming.

Mr. STAUBER. You are welcome.

Chairman GOLDEN. With that, I will explain very quickly how this works to the people testifying. I will introduce each of you, and each will be given some time to give an opening statement that summarizes your written testimony. We usually use a timer down in Washington, but we will do this without that kind of formality today.

Next we will have time for questions for myself and Mr. Stauber to each of you.

With that, I would like to introduce our witnesses.

Our first witness, Mr. Mark Ouellette, has a business right here in Machias, Maine. He is the President and CEO of Axiom Technologies, an Internet Service Provider headquartered in Washington County. Mr. Ouellette has held a number of senior leadership positions throughout his career, such as Director of Business Development for the State of Maine. Most recently, he was pivotal to Axiom receiving a Microsoft grant award to provide Internet access to homes in Washington County using TV White Space technology, and securing a USDA grant to support a fiber optic deployment across the three-island community of Cranberry Isles.

Welcome, Mr. Ouellette, and thank you.

Our second witness is Mr. Chris Loughlin, a board member of Downeast Broadband Utility, and he is the Town Manager of Baileyville. Downeast Broadband is in the process of constructing an open-access, dark-fiber network in Calais and Baileyville. He has over 13 years of experience as a town manager, a role that he has taken on for the towns of Machias, Denmark, and Baileyville. He has also worked for 16 years at the Downeast Community Hospital.

Welcome, sir, and thank you.

Our third witness is Ms. Lisa Hanscom, the Co-Manager of Welch Farm and First Selectman from Roque Bluffs. She is a lifelong resident of the town of Roque Bluffs, where she has learned both firsthand and through her interactions with fellow citizens about the business and other challenges created by slow Internet connectivity. She has worked aggressively in the past year-and-a-half to bring high-speed broadband to her community through the town's application in Maine for a $1.3 million proposal to the ReConnect pilot program from USDA.

Welcome, ma'am, and thank you for joining us.

And our final witness is Mr. Timothy McAfee, CEO of Pioneer Broadband in Houlton, Maine. At Pioneer, he has designed and implemented a number of broadband networks, including cross-border links to New Brunswick and fiber-to-the-home builds in multiple county neighborhoods and municipalities. Currently, Pioneer is working with the Downeast Broadband Utility here in Washington County to connect Baileyville to fiber. I would also like to recognize him as a fellow veteran.

Thank you for your service.

He had an entire career as a Navy nuclear reactor operator before returning to Maine to enter the technology field.

Welcome.

I will now turn it over to the panel. We will first recognize Mr. Ouellette.

Thank you, sir.

STATEMENTS OF MARK OUELLETTE, PRESIDENT AND CEO, AXIOM TECHNOLOGIES, LLC; CHRIS LOUGHLIN, BOARD MEMBER, DOWNEAST BROADBAND UTILITY, TOWN MANAGER, BAILEYVILLE, MAINE; LISA HANSCOM, CO-MANAGER, WELCH FARM AND FIRST SELECTMAN; TIMOTHY R. MCAFEE, CEO, PIONEER BROADBAND

STATEMENT OF MARK OUELLETTE

Mr. OUELLETTE. Thank you. Thank you for having me, and thank you for the opportunity to testify, Representative Golden and Representative Stauber.

I had a nice opportunity to chat with Representative Stauber before the Committee hearing and we are just very pleased to have you here and appreciate the opportunity to speak before you both.

My name is Mark Ouellette, and I am the President and CEO of Axiom Technologies. Axiom is a full-service Internet Service Provider based right here in Machias. From our founder's roots and the first wireless Internet connection in Washington County 14-plus years ago, our mission has not changed in our business, and

that is to deliver strategic and customized rural broadband deployment solutions to remote customers and communities across Maine.

Axiom currently serves approximately 1,300 of the most remote customers in Maine, so we are a small business. We also serve several islands on the coast of Maine, and I don't think it is an understatement to say we serve some of the most difficult customers to reach in some of the most challenging and remote terrain in the United States.

Axiom has deep experience with all Internet technology—wireless, including TV White Space, which Representative Golden mentioned, DSL and fiber. We work hard to deliver innovative solutions that work at a cost that makes sense to the subscriber.

Over the years, how people use the Internet, especially in rural Maine, has evolved and become critical to small and home-based businesses, and increasingly to people who can work from anywhere and choose to live in Maine and rural environments because of quality of life. You all already know this: education, telemedicine, teleconferencing, entertainment, and phone service are increasingly reliant on a strong, reliable Internet connection and enable remote, rural customers to connect to the world, create their own economy, and successfully preserve their way of life. Internet connectivity can help save rural communities from dying.

In Maine, numbers are difficult, but as you know—you mentioned the numbers are difficult. They are difficult to understand, but estimates suggest there remain 20,000 unserved homes in Maine, and tens of thousands of underserved homes across Maine. Most of rural Maine struggles to reach the FCC standard of 25/3 megabits per second.

And for Maine's rural businesses, lack of robust connectivity is increasingly impeding growth. Fiber, the gold standard of connectivity, remains difficult for many rural small businesses to access or afford. Many businesses have been disappointed to learn that the cost of a fiber connection is out of their reach, even if they have access to that type of connection, often costing between $2,000 and $10,000, on average, depending on the location of the fiber connection point, and this is just the cost to connect. In addition, the monthly subscriber fees can sometimes run over $100 or more per month, very difficult for small businesses to afford.

Affordability is a significant barrier for small rural businesses to connect and obtain better speeds and reliability. Accessing online, cloud-based services like QuickBooks, Zoom, a teleconferencing technology, with a less-than-optimal connection at the very least has productivity consequences and can prevent the ability of a small business to access these tools at all.

Every person deserves to be connected. Every business needs a level of speed and reliability that allows them to succeed in an increasingly digital economy. In a rural state like Maine, residential connections are often a business connection. You can't lose sight of that. Increasingly, rural Maine is working from home for themselves or remotely for companies from other places, not just in Maine but across the United States.

The digital divide is increasingly giving urban areas better access, reliability, and speeds, while the rural areas continue to lag behind. Government programs like the USDA ReConnect Program

and the Department of Commerce EDA are helpful, but more needs to be done to ensure the vibrancy and productivity of rural America. No Internet Service Provider can affordably serve very rural homes without Federal, state, or local subsidy.

We all want to do it. We all want to serve. We need to have a return on that investment.

There is no doubt in my mind that the lack of good broadband Internet in rural Maine is creating an economic lag on our economy here in Maine.

In summary, I will just make five points.

First, equal access to all. All small businesses are not created equally. A job created or retained in a rural community can have an oversized impact on the economy.

Second, future-proof. Fiber optic systems can deliver a gig—1,000 megabits per second—to each location, and inexpensive new technology is being developed to deliver 10,000 megabits per second to a single location. The government should stop investing in outdated, unscalable technology.

Congress should ensure that connectivity should not be dictated by the location of your home or small business. Rural connectivity is extremely important, and policy decisions in Washington should not exacerbate the urban/rural divide.

Fourth, reliability. Nothing is more frustrating to any of us than when you can't do something on the Internet. We have all experienced that at 4 o'clock, I just need to send this document out, and the little spinning thing starts spinning, and you go, oh my God, can't do this. Reliability is paramount, and I just want you to keep that in mind when you think about speeds and all the other technology involved. Super-reliability really matters. It certainly matters in rural Maine.

Last, bridging the digital divide requires more than a good connection. It requires educating subscribers how to leverage that connection through digital literacy teaching and classes. Axiom's founder has created the National Digital Equity Center, whose mission is to ensure that all citizens have tools to fully participate in the digital economy and society. The Federal Government can play an outsized role in educating citizens and municipalities on how to better leverage a broadband connection, should they be able to get one.

Thank you again for the opportunity. I appreciate the time. And just for the record, I would like to say that Tom Brady is a better quarterback than Aaron Rogers.

[Laughter.]

I will end my testimony there.

[Laughter.]

Chairman GOLDEN. You are very strong——

[Laughter.]

Sir, you are next. We will go right on down the line.

STATEMENT OF CHRIS LOUGHLIN

Mr. LOUGHLIN. My name is Chris Loughlin. I am testifying today on behalf of the Downeast Broadband Utility and have prepared this testimony with the assistance of our organization's President, Danny Sullivan. I also serve as Town Manager of

Baileyville, which is one of the two communities that will be served by the Downeast Broadband Utility open-access dark-fiber network. In fact, Calais and Baileyville got together to form Downeast Broadband Utility.

Since this Committee is focused on infrastructure, we would like to address that first. Infrastructure has been critically ignored for the last 30 years in the multiple broadband debates that have occurred over various government and private agencies. Like building a road or expanding electricity, the foundation needs to be in place first and foremost. Unfortunately, in Maine and throughout the country, this critical basic infrastructure debate has been hijacked by incumbent Internet Service Providers more concerned with short-term profits than long-term public good. Were those dollars their private funds, that would be understandable, but that has not been the case. Millions of public dollars have found their way into private companies promoting their own brand of broadband. Maine and this country are yearning for better broadband. Were that not the case, there would be no need for this hearing.

A few facts need to be understood. The Internet backbone, the very heart of the system, is fiber. What is referred to as the "middle mile" is fiber. Where this country has dropped the ball is what is referred to as the "last mile." Rather than completing the fiber network to the home, we have allowed private companies to set the agenda and use public funds to finish that final mile with DSL, cable, and fixed wireless Internet. These are all copper-based technologies that are inadequate to the task. It seems incredible now to think that we have built world-class fiber backbone networks, only to miss the mark to our homes and businesses because we have allowed private companies to put their profits ahead of the American taxpayer.

The technology is actually pretty straightforward. As previously mentioned, the core of the Internet is fiber. Why isn't the rest of the network the same technology?

Wireless keeps being touted, especially in hilly, mountainous states like Maine. But in reality, this does not work. The ConnectMe organization is an arm of the Maine government and has given $10 million to companies building wireless networks, as well as DSL and cable. Why does this hearing exist if previous efforts were the solution?

A recent Post Road study, in conjunction with the Roosevelt Institute, concluded that in reality the cost of building all-fiber-to-the-home networks is actually more cost-effective than trying to fix this issue with wireless solutions.

This Committee, from its very name, is focused on infrastructure. In our president's conversations with Congressman Golden, he has tried to make it clear the need for all-fiber-to-the-home and business networks, especially when expending public funds. This fiber infrastructure needs to be in place, much the same as electric cables were strung in the '30s to bring electricity. Building an all-fiber network will position Maine and this country first in regard to world-class future-proof broadband.

We urge this Committee not to go down the path of previous committees and allow incumbent companies that promote their own

version of broadband to once again drive the debate and waste public funds.

The solution is simple. Ask any IT person. Build fiber and only fiber networks all the way from the source of the Internet directly to our homes and businesses and the problem is solved. Two-thirds of this fiber network have already been accomplished. The backbone and middle mile are in place. This committee needs to focus on the last mile to our homes and businesses and make sure it is fiber.

We at Downeast Broadband Utility have done just that. The citizens of Calais and Baileyville have decided to secure the funds to build this fiber-to-the-home network. Our network is close to completion, with customers to sign up in the next week. Interest has been overwhelming.

If we can impart only one thought to carry away from this meeting, it is fiber from beginning to end. There is a lot of confusion around this technology, but remember one thing. All technologies, whether it be cell towers, fixed wireless Internet, satellite, 4G, 5G, et cetera, they all have to eventually connect to a fiber connection to get to the Internet. Build the hard-wired fiber networks to all our homes and businesses in Maine, as Calais and Baileyville have, and the problem is solved.

Thank you for the opportunity to testify.

Chairman GOLDEN. Thank you, sir.

Ms. Hanscom, you are recognized.

STATEMENT OF LISA HANSCOM

Ms. HANSCOM. Congressman Golden, Congressman Stauber, my name is Lisa M. Hanscom. I would like to extend my thanks to all of you for the opportunity to speak to you and to share both my and my community's challenges to raise the tide not only for our businesses but for all those who interact with those businesses.

I come to you wearing three separate hats. I am a farmer, a businesswoman, and a selectwoman. I am the owner and a manager of a family farm, a blueberry farm. We are in the midst of our blueberry season, the most frantic time of the year for me. Nevertheless, I felt the need to take this time to come and speak to you on this very important topic.

I also run an Airbnb rental located at the farm, and I use the inadequate Internet that I have to advertise our blueberry products, interact with buyers, and with rental customers.

Our home Internet is limited in both up and download speeds, generally less than 7/1 megabits per second. I am unable to increase the quality and quantity of my businesses because of the poor Internet speeds.

I am also First Selectwoman in Roque Bluffs. I am well acquainted with the struggles of my residents to access good, reliable Internet service. Our community has recently come together to bring broadband to our entire town in locations where our overall Internet quality at present is poor or even inaccessible.

Roque Bluffs is a small community of about 300 people. We are 10 miles from where we are sitting right now, literally at the end of a road. You must choose to drive to Roque Bluffs to get there; we are not on anybody's route. Consequently, most broadband com-

panies are not interested in serving us. Indeed, I have had companies, when I have contacted them in hopes of better service, terminate my call because they did not want to offer me service once they knew of my location. When my Internet service has been slowed, as it always does at night, I have lost connections with my Airbnb customers. This happens on a regular basis. Have I lost those customers? I don't know. But clearly, this quality of communication is not conducive to positive business interactions.

There are many more of me—farmers, fishermen, lobster sellers—who either are paying exorbitant prices for better connectivity or are struggling to make do with this inadequate technology.

In Roque Bluffs, we had residents who planned to run their businesses out of their homes but who sold those homes because their Internet service was too slow.

In Roque Bluffs, we have home-bound, elderly patients who cannot connect over the Internet in order to interact with their doctor or nurses.

In Roque Bluffs, we have elementary, high school, and college students who—or their parents—must drive into Machias to accomplish their online homework. We have older continuing education students who cannot complete their online exams because of the inconsistency of their Internet connectivity.

Small rural communities are typically small in population but large in geographical area. For them, the last-mile problem is that a lot of infrastructure needs to be built to adequately serve a small number of customers. This generally means a poor expected return on infrastructure investment. Once the infrastructure exists, the economics of managing that infrastructure and providing service to customers becomes more attractive.

The town of Roque Bluffs, like many small towns in Washington County, is currently served, where it is served at all, by a patchwork of inadequate infrastructure. Service is typically slow, much less than 10 megabits per second, and unreliable. It relies on modest upgrades to outdated technologies. No commercial provider has been willing to make the capital investment necessary to provide modern broadband service throughout the town.

Recognizing this, the town of Roque Bluffs recently took matters into their own hands, working in partnership with Axiom Technologies of Machias and the Island Institute of Rockland. In May, the town passed warrant articles authorizing the installation of a fiber optic network reaching every residence in town. The town will make the infrastructure investment the private sector has been unwilling to make. It will own the infrastructure and will hire Axiom Technologies to light up the fiber and manage the system under contract.

The town voted to fund this investment in its future with tax revenues if necessary, but it also submitted a proposal to the USDA ReConnect pilot program to fund a portion of its construction. The ReConnect program is intended to address the problem of capital investment in rural communities and provides for a number of funding models using a combination of guaranteed low-interest loans and outright grants.

While Roque Bluffs greatly appreciates the opportunity that the ReConnect program provides, the grant application process itself

was clearly not designed with a small, rural community in mind. Installing a broadband system is a complex endeavor. A business model must be developed, and engineering cost and feasibility studies must be performed. Various state and Federal agencies must be consulted for approvals. All of this takes considerable time, money, and expertise. The fundamental problem with the ReConnect program is that a project must be taken to a shovel-ready state before making an application. For a small, rural town run by a part-time board of selectmen, the kind of time, money, and expertise required to complete such a complex proposal process is in short supply.

Roque Bluffs was fortunate in receiving financial and advisory support from the Island Institute to develop our plan. It was fortunate in finding an ISP in nearby Machias which specializes in working with underserved communities. It was fortunate in having residents with expertise in writing large, complex grant proposals. Effective Federal grant programs should not require such good fortune in its applicants simply to make it to the proposal stage.

While the ReConnect announcement of opportunity stressed its support for the kind of public-private partnership we assembled, the program clearly did not anticipate such an applicant. Much of the financial and business plan information requested was not applicable to a public entity supported by tax revenues. A detailed construction plan was required. A costly review by an independent consulting professional engineering firm was also required. The proposal then required detail at the individual utility pole level of that plan. While the system to be installed must provide at least 25 megabits service, the grant will not fund any construction where 10 megabits service currently exists. Part of the problem with all Internet service is that customers rarely receive the advertised speeds. As soon as the town voted to proceed, commercial providers began to install what they claimed was service upgraded to 10 megabits per second, though in practice this seems not to be the case. The town, however, is now burdened by having to document this failure to provide advertised speeds, a difficult and technical double jeopardy.

There are, at the very least, many hundreds of rural communities lacking meaningful broadband availability in the U.S. Only 38 organizations managed to submit applications to the $200 million ReConnect program this year. The unnecessary complexity of that application process is clearly a major impediment to the effective implementation of the program.

I am thrilled that Representative Golden and others have taken the time and made the effort to explore this issue more deeply. We thank you all for your attention and encouragement, and we do need that.

I believe that Representatives Golden and Stauber are making a good first step. However, in my opinion and because of my experiences, I would urge you to seriously consider the problem at a broader scale. During the Great Depression in the 1930s, Franklin Roosevelt proposed legislation to bring electricity to all rural communities across the country. In my community of Roque Bluffs, that connection was not completed until 30 years later, in the 1960s.

Few businesses exist in isolation; they are integral parts of communities. Creating a business-friendly community means keeping young people from moving away, attracting new working-age residents, and creating an educated workforce. This requires broadband not only at work but at home for students and for employees and their families.

The "last mile" problem is not literally one mile, but many. Most small, rural communities lack a broadband network altogether. The problem is not the single mile down the driveway to the road, it is extending the network over many miles to provide service on the road itself. Once the network has been extended, providing service to all customers, not just small businesses, becomes economical.

It will cost $1.3 million to build a fiber optic network throughout our town, about $30,000 per existing small business. That same $30,000 by itself would be very unlikely to enable a broadband connection to any one business in our town, while the network will make Roque Bluffs a far better place to do business.

The essence of the Internet is that it is a network, and networks depend upon economies of scale. The paucity of commercial investment in rural broadband is caused by a lack of scale which cannot be effectively addressed by providing a handful of point-to-point connections. It must be addressed by providing the community as a whole with access to what has become a modern utility.

I hope that we will not have to wait 30 years to lift all of our boats, all of our communities, or to bring this real opportunity to all of those who dream to better themselves and their families.

Thank you again for giving me the chance to speak on this critical issue, and thank you for all the work that you have and will accomplish. God speed.

Chairman GOLDEN. Thank you, ma'am.

STATEMENT OF TIMOTHY R. MCAFEE

Mr. MCAFEE. Thank you for the opportunity to testify on the proposed Small Business Last Mile Act of 2019. My name is Tim McAfee and I am the CEO and Engineer for Pioneer Broadband, a small Internet Service Provider in Aroostook and Washington Counties in the state of Maine.

Connecting small businesses to the Web is extremely important in today's economy. The marketplace has changed. Consumers want products at the touch of a button, and producers want to get their wares to market as soon as possible. As communication technology has evolved over the last 20 years, there are plenty of spots throughout our great state, and country for that matter, that lack sufficient broadband access. Things like telecommuting, telehealth, and digital content creation are becoming more mainstream. We live in a beautiful state, a wholesome place to raise a family.

Our company started out as a wireless company in the early 2000s. We have since migrated all our focus to fiber optic networking. We have done this because the wireless and copper technologies have not kept up with the consumer demand. Our customers want fast, reliable Internet access, whether it is for business or pleasure; that is what our society is demanding. The Internet of Things is growing exponentially. Connected devices are the norm, whether it is a toaster, a car wash, or a vehicle. We have

embraced the technology as users but seem to have overlooked the aspect of infrastructure.

At Pioneer Broadband, we love providing fiber optic service to a small business in a rural setting. We do it whenever we can, but there is true expense to doing so. It costs tens of thousands of dollars per mile to build fiber. We cannot always make a business case to deliver. If the customer cannot afford to pay for it, we will try to find a grant source that fits. The ConnectMe Authority has been instrumental in connecting various communities in our coverage area and we applaud their efforts.

Some existing Federal programs are very difficult to obtain. The intentions are good, but they are not designed for every situation. They do not always make sense either. For example, the USDA Community Connect grant will pay for construction of a network to every home but requires the operator to build and staff a community center with computers and Internet access. Another example is the CAF II program. It is only available to ILECs, the incumbent local exchange carriers, or your telephone company. They are using the CAF funds to install DSL rollouts on their copper infrastructure. That seems like a complete waste of money to me. That money should be put into fiber-to-the-whatever infrastructure. That is what will benefit the consumer.

I appreciate the focus of this Act. It is designed to make it easier for a small, rural business to get connected. It is focused on fiber as a medium. I am, however, concerned about a couple of the following phrases: "duplicate infrastructure" and "functional equivalent." These phrases look like a good way to circumvent the Act's intent.

Again, I thank you for the opportunity to testify, and I look forward to the successful progression of this proposed bill.

Chairman GOLDEN. Well, thank you all very much for the testimony.

This is going to bring us to some back and forth. We are going to do some questions, Pete and I, before we do some closing statements and have some time together as well, as you said, to talk to folks and answer your questions.

I did want to take a quick moment just to recognize a few people who are here today. We have the district office director for the Small Business Administration, Amy Bassett, who has come here today. I really appreciate your coming to Washington County to be a part of this. She is here to serve small businesses all over the State of Maine, and she really travels the state all over to get out and try to meet people in different regions and make sure that people are aware of the services they provide, which are many. In addition, the legislation that Pete and I are working on would involve the Small Business Administration, so I am glad she is here paying attention to it, because I am hoping that you might find yourself running a great program, bringing broadband to rural communities.

We also have a really wonderful state senator here. Many of you must know her, Marion Moore, sitting right out in front. She represents you all in the state senate. Thanks for coming out.

Bill—is Bill in here? We just met. You are the local selectman?

SPEAKER. Yes.

Chairman GOLDEN. Welcome and thank you very much. I look forward to sitting down to talk with you.

Also, state representative Jenda Chant is here. You are a long way from home. I am so glad you are here. It is good to see you.

All right. Well, my staff had prepared several questions, but listening to the testimony, I think some came to mind.

The first is, you were talking, Mr. Ouellette, about getting fiber connection, perhaps costing a small business somewhere between $2,000 and $10,000, on average, when you have gone and looked at someone who has tried to gain access to broadband service. So thinking about the bill, the Last Mile Act we are working on, I was curious if you thought that was structured appropriately in terms of the size of the grants that are being made available and whether or not in many instances you think it would be enough that businesses might qualify for in order to get the job done, or do you think it needs a higher range?

Mr. OUELLETTE. Thank you for the question. Let me start by saying I think skin in the game really matters, so I do not believe that full subsidy is required, nor should it be the norm. I think that a small business does need to invest in its own future, and there needs to be some payment, some amount of money that the small business needs to come up with. So when you think about your bill, I think the appropriate amount that you talked about in your draft bill makes sense from my perspective, and I don't think they are overly generous, and they are not short either. I think you hit a sweet spot, from my perspective, that makes sense.

The further away you get from fiber or from a main fiber line, the much more expensive it is going to get. So you are still going to miss a bunch of places, especially in really rural Maine where it is difficult to find a fiber connection that you can connect to affordably. And when I say affordably, I mean for under $20,000 affordably. So that really matters. So it is going to be hard to figure out how that works from my perspective, but I think you have taken a good first step and a good reliable step, I think, to support small businesses in rural environments.

And certainly, as I look around this room, there are businesses here who have struggled to try to get connected at a reasonable cost because they know they need better connectivity, and we have given them pricing that has been too expensive, that they couldn't afford. So from a small business standpoint, we have to have a return on investment, and what that looks like in the environment we live in today is either the ISP is saying we need a long-term contract, so you have to sign up for a very long time, sometimes over five years, so that we can subsidize that build for some period of time, or you have a pretty expensive up-front cost that can't be afforded.

So either way it is difficult, and I think your bill speaks to that and makes a lot of sense.

Chairman GOLDEN. Just so everyone knows, the bill that we are discussing would provide grants at $15,000 for projects to a single business, or $35,000 if you were going to serve multiple businesses. I agree that that is also important. Knowing that there are other programs, some of which many of you have actively sought, we hope that those will be able to provide the resources you need

for those longer distances and getting the fiber backbone in, the development so that you could then use a program like this for the last mile for individual businesses.

The reliability piece of the five summary points you wanted to make really jumped out for me. I hear from a lot of businesses as I travel the district that talk about reliability as a deterrent to why they don't bother making some of these investments, because while they are happy to make the investment if they can find a way to pay for it, if it is not reliable and consistent during the work day, then it is just not worth the investment for them. You are in the middle of doing a job, and then all of a sudden, like you said, the spinning wheel appears, it is a big problem when there is a customer who is either there physically or on the other side of that digital divide.

Yes, go ahead, please.

Mr. STAUBER. Thank you, Mr. Chair.

Ms. Hanscom, you talked about the frustrations as a small business owner yourself. I don't want a specific number, but what would the difference be if today you had high-speed reliable broadband? How much more money would your business make? Just an idea.

Ms. HANSCOM. I mean, I think it could more than double, possibly even triple, because the lack of Internet—I mean, it is hard for me to even work on a website without coming to Machias to do all the downloads for pictures and stuff, so my website is in poor shape. With my rental cabins, just keeping in touch with my customers——

Mr. STAUBER. But double or triple?

Ms. HANSCOM. It could—yeah.

Mr. STAUBER. And so we talk about—you know, Jared and I sit on the Small Business Committee. Small businesses, as you know, those of you who are owners of small businesses, you know that you are the engines of our economy. I would say this, Mr. Chair, that we could take the four of you, we could have placed you in our Small Business hearing that I held in Scandia, Minnesota, and it is the same thing.

Chairman GOLDEN. It is very much the same testimony.

Mr. STAUBER. To me, it is very frustrating, and I alluded in my earlier comments that I am not as patient as some people think we should be. You know, we have to work—we talk about the mapping. The Federal Government says our state is 91 percent qualified. It is not. I live just west of the City of Duluth, and there are people on the western edge of my small hometown that can't get the high-speed reliable Internet service. So I think you folks are at the ground level to help us get that mapping right. It is not just the bigger companies. It can't be just the bigger companies. You have to, and you will be, a part of that discussion, because once we get the mapping, then we make that investment.

I was just going to say can you get me my blood pressure medications, because it is the same thing we heard a month-and-a-half ago in Minnesota.

Chairman GOLDEN. Exact same thing. You heard it, too.

Mr. STAUBER. Yes, yes.

Chairman GOLDEN. The discussions about schoolchildren having to be brought to libraries several times over——

Mr. STAUBER. To download.

Chairman GOLDEN.—to finish their homework. Remember the realtor?

Mr. STAUBER. Yes.

Chairman GOLDEN. And you had a small-scale manufacturer who was testifying about how he could double, maybe triple the size of his business.

Mr. STAUBER. We asked the same question, and he said the same thing. And furthermore, he said had he known the importance of that high-speed broadband, reliable, he would not have placed his business in rural Minnesota. I couldn't believe it. That is how important it was. So we are trying to make sure that those people that want to live our quality of life and want to allow their kids to come to our rural schools, that they have the opportunity. So you are exactly right. And then the realtor talked about selling a home. I mean, there are thousands of dollars of difference. I think we have some local elected officials. That is about those local additional taxes as well, the value of the home. It all comes together.

Thank you, Mr. Chair.

Chairman GOLDEN. Mr. Loughlin, you talked about copper-based technologies that are inadequate for the task of providing high-speed Internet, and you also talked about how, in a very hilly, mountainous state like Maine, the reality is wireless is not the best way to go. I thought an important part of your testimony is that a lot of the Federal programs that have been created have been taken advantage of by some of the larger telecoms and others that have been in this business for a long time and are using those Federal dollars to invest in old technologies that aren't the best or most efficient for our communities, and I think you have a strong belief that these programs should be strictly for fiber. But I am not the expert that you and Mr. Sullivan, who I know that you work with, are on this issue, but I wanted to hear more about your thoughts on this, because it struck a chord with me.

I was in the Marines, in the infantry. We also talked about coms in the mountains as a nightmare, and we used to actually have people that would climb up trees in the mountains in Afghanistan with copper to try and improve our ability to communicate, but that certainly was not efficient by any means. We needed some fiber there.

Mr. LOUGHLIN. The wireless I think does have its place in some situations, but I think 95 percent of the solution is bring the broadband as close as you can. Again, even the wireless, if you look at some of the numbers that they generate, yes, you can get wireless service. But guess what? You are going to pay this much to get what you are getting through broadband. So I don't believe it is a viable option for most folks. In fact, Mr. Sullivan for many years had wireless because that is all he had available in Cooper. So, yes, it is not the way to go. Bring the fiber right to the location and you solve that problem. Initially, the expense is huge. But in the long run, it proves itself out.

Chairman GOLDEN. Knowing of your lack of patience, I think the problem with the slow pace of government is while we are rolling out these programs and making these investments at a very slow pace, technology is getting out ahead of us, which isn't the intention of Congress with these programs.

Ms. Hanscom, your testimony, like Pete was saying, is so eerily similar to what was going on in Minnesota, but this part really jumped out at me, where you talked about in order to be eligible for some of these Federal programs, you have to be building up to 25 megabits per second, but it has to be in an area where you can't get at least 10, and that once your community, following your leadership, decided to vote to say let's go ahead and pursue this as a community, the local commercial providers started advertising that they were offering service at that 10 megabits per second, I can only assume because they had some knowledge that maybe that would make it more difficult for you to get Federal dollars to assist in your project. Is that right?

Ms. HANSCOM. Actually, yes. In fact, they didn't just advertise. They have been knocking on doors. I found that funny because we actually did approach the commercial providers about trying to expand their service further into the town, because out of the 265 homes in Roque Bluffs, only 42 can get what is considered high-speed Internet through Spectrum. So we had actually approached them, and they couldn't do anything for us because the actual response was that it did not make good business practice. They weren't going to get enough on their return. We did the whole procedure and had done all the research and did this application, and as soon as we actually submitted the application, some of the commercial providers started knocking on doors saying we can give you 10/1. So, yes, I was kind of shocked by that practice, actually.

Chairman GOLDEN. I want to share with you, too, that what we have learned through our oversight hearings about the FCC and eligibility for some of these programs is that the FCC will map broadband access according to what a service provider tells them they offer.

Ms. HANSCOM. Yes.

Chairman GOLDEN. Which may actually make a community then ineligible for Federal assistance and Federal dollars to go ahead and expand broadband. So I think it is even worse than what you are describing, because in some ways it might have been meant to make it so that you didn't have anywhere to go but them, and they weren't really interested in offering the service to you in the first place. I think that is the kind of thing that Pete and I can continue to have oversight hearings about, because it is abusive. So, thank you for that, very much.

I want to thank you, Mr. McAfee, for the feedback on the language about duplicative infrastructure and functional equivalent. I am guessing your concern is that some of these larger providers and their general counsel might find ways to use that language against our intent and make it harder.

Mr. MCAFEE. That is my fear.

Chairman GOLDEN. Yes. We will work to correct that, so thank you very much.

Do you have additional questions?

Mr. STAUBER. No. I think, like I said, your testimony is the same as we heard in rural Minnesota. I own a small business. It is important for our community. We are going on 30 years, and it is not easy, especially when you have the ability to have more of a return on your investment. You have invested. You have put your capital and your blood, sweat, and tears in, and then we can't find a way to do this. I mean, to say that you could double or triple your income for you, that is what this country is all about, taking that risk for that reward. That is what capitalism is all about. And we have the ability to help all of us.

But I don't want us to forget. We talked about telehealth and telemedicine. How critical is that for our rural hospitals? It is critically important that we have that connection. I will just relate to the north shore of Duluth, Minnesota, the north shore, the Canadian border. If they don't have telehealth or a good connection, that psychologist in downtown Duluth, the bigger hospital, can't give that emergency evaluation of that patient, and then they have to take the three-and-a-half hour drive. And they are without law enforcement. Law enforcement is my background, so it makes all the sense in the world to make sure that we make sure that our hospitals, and we push for our schoolchildren in rural America. We can't forget that.

We are depending on you to help us out with this legislation, Mr. McAfee, on the language. Thank you. So Jared and I will go back and we will look at that. The experts are in this room.

And I have said this before, Jared, you have heard me say this. Just because we have an election certificate doesn't make us an expert. We need to know where they are. So the testimony, as each and every one of you are talking, literally I was thinking this is what we heard, this is what we heard, and this is what we heard again.

So I think that before you move on I would just like to say, Mr. Chair, that if it is happening in rural Minnesota and rural Maine, it is happening in rural America. I think that some of your points that you have given us are the same, and we are now going to take this and move forward with it. I am counting on it. And, Chairman Golden, Mr. Chair, you will have my full support as we move forward here, because the frustrations you are seeing in the people in the small businesses, we have talked about it enough. Those of us who are small business owners, you have gathered the information, and you jump out and make the decision. I think this is where we in the subcommittees are right now. We have the information. We have to make sure that we invest in this in a very expeditious manner.

Chairman GOLDEN. Pete is an incredible advocate, as you can tell, for rural America, and we have been successful working together already. You passed a bill out of the House, and it was a unanimous vote to support small businesses. So I am very confident that we will be going through the Senate and getting to the President's desk. I was a co-sponsor. But the beautiful thing about the Small Business Committee is I guess you could ask my staff—not my staff, the Chairwoman's staff—whether or not this is the case. But I think all of the legislation coming out of the Committee has been unanimous. That means full support on a fully bipartisan

basis, which is why we have a great track record. When something comes out of the Committee, it is getting through the House and the Senate and it is going to become law. It is really a privilege to be on a committee like that.

Mr. STAUBER. Mr. Chair, could I make one more comment?

Chairman GOLDEN. Of course.

Mr. STAUBER. So, you had talked about electricity to every home. A member of the Federal Reserve out of Minneapolis, Neal Cashcar, he said this, so I am going to attribute this comment to him. He said at some point, government decided that every mailbox mattered. Think about it, every mailbox. Everybody knows that we are working on this, and we are going to make a difference into our rural communities.

Before you make your closing comments, thank you all for being here. Thank you for having me. You live in a beautiful state. I drove up here from Bangor, just beautiful. Rural Maine has it going on, and I will say the same thing for rural Minnesota, we have it going on, the salt of the earth people represented by good folks, and that matters. So it is a pleasure for me to be here.

Thank you, Mr. Chair.

Chairman GOLDEN. Thank you very much.

You know, we could probably go on and on. You have given a lot of feedback in your testimony, and I want you to know I have really paid attention to it, in particular not just about the bill that we are considering but the programs that do already exist. I know that the Small Business Committee staff spends a lot of time thinking about this issue, the ways in which things like the USDA program for broadband, there are just too many barriers and at times a lot of roadblocks, and you all have experienced them. You have spoken about them very eloquently in your testimony, and we will be using that hopefully in the Committee to improve those programs for future years. When they put out the requests for you all to submit on an annual basis, hopefully you will see some improvement in the years going forward on those programs if Pete and I are successful in getting the support we need and pushing forward a new program that is structured specifically for rural communities.

And I mean that in a very serious way. We are drafting this in a way to make sure that it can only go to the most rural of communities in America.

So let me just go ahead and pull up the closing—you have it right there for me. Thank you.

The term "universal service" has been a critical mission of the Federal Government for many years, I think starting with electricity, telephones, and the Internet, and now moving to broadband. That has actually been mandated by law as the role of the Federal Government to accomplish this for Americans without access to these kinds of critical utilities. Building out broadband infrastructure in rural America requires targeted Federal investment. You all have spoken to that, and Congressman Stauber as well.

I want to thank you again for being here today and for your willingness to take part in the hearing. We pulled this together—my staff worked awfully hard to pull this together, as did the Small Business Committee staff, but I know you all put a lot of effort into

this as well, and you are putting a lot of effort into bringing broadband service into our communities, and I thank you for that.

I look forward to working more with you, as always, Pete, to help make our communities in Minnesota and Maine as best as they can be. We know they are already great, but we have to do what we can to make them more affordable and reliable places to live in and do business.

So with that, I would ask unanimous consent that any members, not just Pete and I—I guess this probably applies to all the members of the Committee—that they have 5 legislative days to submit statements and supporting materials for the record.

Without objection, so ordered.

And if there is no other further business to come before the Committee, we are adjourned.

Thank you all very much.

[Applause.]

[Whereupon, at 4:40 p.m., the Subcommittee was adjourned.]

APPENDIX

Thank you for the opportunity to testify.
My name is Mark Ouellette and I am the President and CEO of Axiom Technologies. Axiom is a full-service internet service provider and professional services company based right here in Machias. From our founder's roots and the first wireless internet connection in Washington County 14 plus years ago, our mission has not changed:

To deliver strategic and customized rural broadband deployment solutions to remote customers and communities across Maine.

Axiom currently serves over 1300 homes and small businesses across Washington County, and several islands along the Maine coast. I don't think it is an understatement to say we serve some of the most difficult customers to reach, in some of the most challenging and remote terrain in the United States.

Axiom has deep experience with all internet technology; wireless- including TV White Space, DSL and fiber.
We work hard to deliver innovative solutions that work- at a cost that makes sense to the subscriber.

Over the years, how people use the internet, especially in rural Maine has evolved and become critical to small and home-based businesses, and increasingly to people who can work from anywhere and choose to live in rural Maine for the quality of life. Education, telemedicine, teleconferencing, entertainment, and phone service are increasingly reliant on a strong, reliable internet connection and enable remote, rural customers to connect to the world, create their own economy and successfully preserve their way of life. Internet connectivity can help save rural commutes from dying.

In Maine, numbers are difficult, but estimates suggest there remains 20,000 unserved homes and 10s of thousands of underserved homes. Most of rural Maine struggles to reach the FCC standard of 25/3Mpbs.

And for Maine's rural businesses, lack of robust connectivity is increasingly impeding growth. Fiber- the gold standard of connectivity- remains difficult for many rural small businesses to access or afford, Many businesses have been disappointed to learn that the cost of a fiber connection is out of reach, even if they have access to that type of connection- often costing between $2,000 and $10,000 depending on the location of the fiber connection point- and this is the cost before the monthly subscriber fees, which often run over $100/month. Affordability is a significant barrier for small rural businesses to connect and obtain better speeds and reliability. Accessing on-line, cloud-based tools like QuickBooks or Zoom, with a less than optimal connection at the very least has productivity consequences and can prevent the ability of a small business to access these tools at all.

Every person deserves to be connected. Every business needs a level of speed and reliability that allows them to succeed in an increasingly digital economy.

In a rural state like Maine, residential connections are often a business connection, increasingly rural Maine is working from home for themselves or remotely for companies located across the United States.

The Digital Divide is increasing- giving urban areas better access, reliability and speeds, while the rural areas continue to lag behind. Government programs like the USDA Reconnect Program and the Department of Commerce, EDA are helpful, but more needs to be done to ensure the vibrancy and productivity of rural America. No internet service provider can affordably serve rural homes- without federal, state or local subsidy.

There is no doubt in my mind that the lack of good Broadband internet in rural Maine is creating an economic lag on the economy.

In summary I'll make 5 points:

1. Equal access to all- All small businesses are not created equally- a job created or retained in a rural community can have an oversized impact
2. Futureproof- fiber optic systems can deliver a Gig (1000Mbps) to each location and inexpensive new technology is being developed to deliver 10,000Mbps to a single location- the government should stop investing in outdated and unscalable technology
3. Congress should ensure that connectivity should not be dictated by the location of your home or small business- rural connectivity is extremely important and policy decisions in Washington, should not exacerbate the urban/rural divide
4. Reliability- nothing is more frustrating to any of us then when the internet is not working- as the committee considers investments- please strongly consider the reliability of various technologies- there is broad agreement that fiber delivers the best reliability
5. Last, bridging the Digital Divide requires more than a good connection- it requires educating subscribers how to leverage their connection through Digital Literacy teaching and classes, Axiom's founder has created the National Digital Equity Center whose mission is ensure that all citizens have the tools to fully participate in the Digital economy and society- the federal government can play an outsized role in educating citizens and municipalities on how to better leverage a Broadband connection

Thank you again for the opportunity.

Mark Ouellette
mark@connectwithaxiom.com

Committee on Small Business Subcommittee on Contracting and Infrastructure

Committee Members:

My name is Chris Loughlin. I am testifying today on behalf of the Downeast Broadband Utility and have prepared this testimony with the assistance of our organization's President, Dan Sullivan. I also serve as Town Manager for Baileyville, which is one of two communities that will be served by the Downeast Broadband Utility open-access dark fiber network.

Since this committee is focused on infrastructure, we would like to address that first. Infrastructure has been critically ignored for over 30 years in the multiple broadband debates that have occurred over various government and private agencies. Like building a road, or expanding electricity the foundation needs to be in place first and foremost. Unfortunately, in Maine and throughout the country this critical basic infrastructure debate has been hijacked by incumbent Internet Service Providers more concerned with short term profit than long term public good. Were those dollars their private funds that would be understandable but that has not been the case. Millions of public dollars have found their way into private companies promoting their own brand of broadband. Maine and this country are yearning for better broadband. Were that not the case there would be no need for this hearing.

Education:

A few broadband facts need to be understood:

1. The Internet backbone (the very heart of the system) is fiber. What is referred to as the "middle mile" is fiber. Where this country has dropped the ball is what is referred to as the "last mile". Rather than completing the fiber network to the home we have allowed private companies to set the agenda and use public funds to finish that final mile with DSL, Cable and fixed wireless Internet. These are all copper based technologies that are inadequate to the task. It seems incredible now to think that we have built world class fiber backbone networks only to miss the mark to our homes and businesses because we have allowed private companies to put their profits ahead of the American taxpayer.

2. The technology is actually pretty straight forward. As previously mentioned, the core of the Internet is fiber. Why isn't the rest of the network of the same technology?

3. Wireless keeps being touted, especially in hilly mountainous states like Maine but in reality, this does not work. The ConnectME organization an arm of Maine government has given over 10 million dollars to companies building these wireless networks as well as DSL and cable. Why does this hearing exist if these previous efforts were the solution?

4. A recent Post Road study in conjunction with the Roosevelt Institute concluded that in reality the cost of building all fiber to the home networks is actually more cost effective than trying to fix this issue with wireless solutions.

This committee from its very name is focused on "infrastructure". In our president's conversations with Congressman Golden he tried to make clear the need for all fiber to the home and business networks, especially when expending public funds. This fiber infrastructure needs to be in place much the same as electric cables were strung in the 30's to bring electricity. Building all-fiber networks will position Maine (and this country) first in regard to world class future proof broadband.

We urge this committee not to go down the path of previous committees and allow incumbent companies that promote their own version of broadband to once again drive the debate and waste public funds.

The solution is simple. Ask any IT person. Build fiber and only fiber networks all the way from the source of the Internet directly to our homes and businesses and the problem is solved. Two thirds of this fiber network have already been accomplished. Backbone and middle mile are in place. This committee needs to focus on the last mile to our homes and businesses and make sure it is fiber.

We at Downeast Broadband Utility have done just that. The citizens of Calais and Baileyville have decided to secure the funds to build this fiber to the home network. Our network is close to completion with customers to sign up in the next week. Interest has been overwhelming.

If we can impart only one thought to carry away from this meeting it is, fiber from beginning to end. There is a lot of confusion around this technology but remember one thing. All technologies, whether it be cell towers, fixed wireless Internet, satellite, 4G, 5G etc., they all have to eventually connect to a fiber connection to get to the Internet. Build the hard-wired fiber networks to all our homes and businesses in Maine as Calais and Baileyville have and the problem is solved.

Thank you for the opportunity to testify.

Lisa M. Hanscom

Personal Experience

Congressman Golden, Congressman Stauber, and Committee Members:

My name is Lisa M. Hanscom. I would like to extend my thanks to all of you for this opportunity to speak to you and to share both my and my community's challenges to "raise the tide" not only for our businesses but for all who interact with those businesses. I come to you wearing 3 separate hats; I'm a farmer, a businesswoman, and a Selectman.

I am a owner and manager of a family-run blueberry farm. We are in the midst of our harvest – the most frantic time of the year -- nevertheless I felt the need to take this time to come and speak to you on this very important topic. I also run a pair of Air B & B rentals located at the farm. I use the inadequate internet to advertise our blueberry products, interact with buyers and with rental customers.

Our home internet is limited in both up & download speeds, generally less than 7/1 Mbps. I am unable to increase the quality and quantity of my businesses specifically because of the poor internet speeds.

I am also First Selectman in Roque Bluffs. I am well acquainted with the struggles of my residents to access good, reliable internet service. Our community has recently come together to bring broadband to our entire town in locations where our overall internet quality at present is poor or even inaccessible.

Roque Bluffs is a small community of 300 people. We are 10 miles distant from where we sit today – literally at the end of the road. You must choose to drive to Roque Bluffs to get there; we are not on anyone's route. Consequently, most broadband companies are not interested in serving us. Indeed, I have had companies, when I have contacted them in hopes of better service, terminate my call because they did not want to offer me service once they knew of my location. When my internet service has slowed, as it inevitably does at night, I have lost connections with my Air B&B customers. This happens on a regular basis. Have I lost those customers? I don't know. But clearly this quality of communication is not conducive to positive business interactions.

There are many more of me – farmers, fisherman, lobster sellers -- who either are paying exorbitant prices for better connectivity or are struggling to make this inadequate technology work for them.

In Roque Bluffs, we had residents who planned to run their businesses out of their homes but who sold those homes because their internet service was so slow.

In Roque Bluffs, we have home-bound, elderly patients who cannot connect over the internet in order to interact with their doctor or nurse.

In Roque Bluffs, we have elementary, high school, and college students who (or their parents) must drive into Machias to accomplish their online homework. We have older continuing education students who cannot complete their online exams because of the inconsistency of their internet connectivity.

Feedback on Existing Programs

Small rural communities are typically small in population but large in geographical area. For them, the last mile problem is that a lot of infrastructure needs to be built to adequately serve a small number of customers. This generally means a poor expected return on infrastructure investment. Once the infrastructure exists, the economics of managing that infrastructure and providing service to customers becomes more attractive.

The town of Roque Bluffs, like many small towns in Washington County, is currently served, where it is served at all, by a patchwork of inadequate infrastructure. Service is typically slow (much less than 10 Mbps) and unreliable; it relies on modest upgrades to outdated technologies. No commercial provider has been willing to make the capital investment necessary to provide modern broadband service throughout the town.

Recognizing this, the town of Roque Bluffs recently took matters into its own hands, working in partnership with Axiom Technologies of Machias and the Island Institute of Rockland. In May, the town passed warrant articles authorizing the installation of a fiber optic network reaching every residence in town. The town will thus make the infrastructure investment the private sector has been unwilling to make. It will own the infrastructure and will hire Axiom Technologies to light up the fiber and manage the system under contract.

The town voted to fund this investment in its future with tax revenues if necessary, but it also submitted a proposal to the USDA ReConnect pilot program to fund a portion of its construction. The ReConnect program is specifically intended to address the problem of capital investment in rural communities, and provides for a number of funding models using a combination of guaranteed low-interest loans and outright grants.

While Roque Bluffs greatly appreciates the opportunity the ReConnect program provides, the grant application process itself was clearly not designed with a small, rural community in mind. Installing a broadband system is a complex endeavor. A business model must be developed, and engineering cost and feasibility studies must be performed. Various state and federal agencies must be consulted for approvals. All of this takes considerable time, money, and expertise. The fundamental problem with the ReConnect program is that a project must be taken to a "shovel-ready" state before making an application. For a small, rural town run by a part-time board of selectmen, that kind of time, money, and expertise required to complete such a complex proposal process is in short supply.

Roque Bluffs was fortunate in receiving financial and advisory support from the Island Institute to develop our plan. It was fortunate in finding an ISP in nearby Machias which specializes in working with underserved communities. It was fortunate in having residents with expertise in writing large, complex grant proposals. A effective federal grant program should not require such good fortune in its applicants simply to make it to the proposal stage.

While the ReConnect announcement of opportunity stressed its support for the kind of public-private partnership we assembled, the program clearly did not anticipate such an applicant. Much of the financial and business plan information requested was not applicable to a public entity supported by tax revenues. A detailed construction plan was required. A costly review by an independent consulting professional engineering firm was also required. The proposal then required detail at the individual utility pole level of that plan. While the system to be installed must provide at least 25 Mbps service, the grant will not fund construction where 10 Mbps service currently exists. Part of the problem with all internet service is that customers rarely receive the advertised speeds. As soon as the town voted to proceed, commercial providers began to install what they claimed was service upgraded to 10 Mpbs, though in practice this seems not to be the case. The town, however, is now burdened by having to document this failure to provide advertised speeds, a difficult and technical double jeopardy.

There are, at the very least, many hundreds of rural communities lacking meaningful broadband availability in the US. Only 38 organizations managed to submit applications to the $200M ReConnect program this year. The unnecessary complexity of that application process is clearly a major impediment to the effective implementation of the program.

Feedback on the Proposed Legislation

I am thrilled that Representative Golden and others have taken the time and made the effort to explore this issue more deeply. We thank you all for your attention and encouragement. And we do need that!

I believe that Representatives Golden and Stauber are making a good first step. However, in my opinion and because of my experiences, I would urge you to seriously consider the problem at the broader scale. During the Great Depression in the 1930s, Franklin Roosevelt proposed legislation to bring electricity to all rural communities across the country. In my community of Roque Bluffs, that connection was not completed until thirty years later in the 1960s.

Few businesses exist in isolation; they are integral parts of communities. Creating a business-friendly community means keeping young people from moving away, attracting new working-age residents, and creating an educated workforce. This requires broadband not only at work but at home for students and for employees and their families.

The "last mile" problem is not literally one mile, but many. Most small, rural communities lack a broadband network altogether. The problem is not the single mile down the driveway to the road, it is extending the network over many miles to provide service on the road itself. Once the network has been extended, providing service to all customers, not just small businesses, becomes economical.

It will cost $1.3 million to build a fiber optic network throughout our town, about $30,000 per existing small business. The same $30,000 by itself would be very unlikely to enable a broadband connection to any one business in our town, while the network will make Roque Bluffs a far better place to do business.

The essence of the internet is that it is a network, and networks depend upon economies of scale. The paucity of commercial investment in rural broadband is caused by a lack of scale which cannot be effectively addressed by providing a handful of point-to-point connections. It must be addressed by providing the community as a whole with access to what has become a modern utility.

I hope that we will not have to wait 30 years to lift all of our boats, all of our communities, or to bring this real opportunity to all of those who dream to better themselves and their families. Thank you, again, for giving me the chance to speak on this critical issue and thank you for all the work that you have and will accomplish. God speed!



September 3, 2019

Thank you for the opportunity to testify on the proposed "Small Business Last Mile Act of 2019". My name is Tim McAfee and I am the CEO and Engineer for Pioneer Broadband, a small Internet Service Provider in Aroostook and Washington Counties in the state of Maine.

Connecting small businesses to the web is extremely important in today's economy. The marketplace has changed. Consumers want products at the touch of a button, and producers want to get their wares to market as soon as possible. As communication technology has evolved over the last 20 years, there are plenty of spots throughout our great state, and country for that matter, that lack sufficient broadband access. Things like telecommuting, telehealth, and digital content creation are becoming more mainstream. We live in a beautiful state; a wholesome place to raise a family.

Our company started out as a wireless company in the early 2000s. We have since migrated our focus to all fiber optic networking. We have done this because the wireless and copper technologies have not kept up with the consumer demand. Our customers want fast, reliable Internet access. Whether it is for business or pleasure, that is what our society is demanding. The Internet of Things is growing exponentially. Connected devices are the norm, whether it is a toaster, a car wash, or a vehicle. We have embraced the technology as users but have overlooked the aspect of infrastructure.

At Pioneer Broadband, we love providing fiber optic service to a small businesses in a rural setting. We will do it whenever we can, but there is true expense to doing so. It costs tens of thousands of dollars per mile to build fiber. We cannot always make a business case to deliver. If the customer cannot afford to pay for the build, we will try to find a grant source that fits. The ConnectME Authority has been instrumental in connecting various communities in our coverage area and we applaud their efforts.

Existing federal grant programs are very difficult to obtain. The intentions are good, but they are not designed for every situation. They do not always make sense either. For example, the USDA Community Connect Grant will pay for construction of a network to every home but requires the operator to build and staff a community center with computers and Internet access. Another example is the CAF II program. It is only available to ILECs. They are using the CAF funds to install DSL rollouts on their copper infrastructure. That seems like a complete waste of money to me. That money should be put into FTTx infrastructure. That is what will benefit the consumer.

I appreciate the focus of this Act. It is designed to make it easier for a small, rural business, to get connected. It is focused on fiber as a medium. I am, however, concerned about the meanings

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of the following phrases: "duplicate infrastructure" and "functional equivalent". These phrases look like good ways to attempt circumvention of the Act's intent.

Again, I thank you for the opportunity to testify and look forward to the successful progression of this proposed bill.

Respectfully submitted,



Timothy R. McAfee

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