

**FIELD HEARING: SCANDIA, MN: SMALL BUSINESSES
AND THEIR LIMITATIONS WITHOUT RELIABLE
ACCESS TO RURAL BROADBAND**

HEARING
BEFORE THE
**SUBCOMMITTEE ON CONTRACTING AND
INFRASTRUCTURE**
OF THE
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Questions for the Record:	
None.	
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None.	
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None.	

SMALL BUSINESSES AND THEIR LIMITATIONS WITHOUT RELIABLE ACCESS TO RURAL BROADBAND

THURSDAY, MAY 30, 2019

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

The Subcommittee met, pursuant to call, at 10:00 a.m., at Bulltear Industries, 24543 Olinda Trail N., Scandia, MN, Hon. Jared Golden presiding.

Present: Representatives Golden, Craig, Stauber, and Hagedorn.

Chairman GOLDEN. The Committee will come to order, and I want to thank everyone for joining us this morning. I especially want to thank the witnesses for being here today.

I would also like to thank Mr. Stauber for welcoming me to Minnesota.

For those of you that don't know, I am Congressman Jared Golden from the State of Maine. I represent Maine's 2nd Congressional District, and I am the Chair of this Subcommittee of the Small Business Committee. Congressman Stauber is the Ranking Member.

In our short time in Congress together, he and I have worked together to get things done for small businesses. We are working on a bill to make sure they have the contracting opportunities that Congress intended, and I look forward to working with him on this important topic which impacts Sandia and towns in my district back home in Maine.

Access to a robust broadband connection is critical for small businesses and the communities they serve. However, 25 million Americans lack access to high-speed Internet. Many of these Americans reside in rural parts of the country where it is more difficult and expensive to build out broadband networks. In fact, 58 percent of rural Americans believe that lack of access to high-speed Internet is a problem in their hometown. In my home district, parts of which are very rural—in fact, it is the second most rural congressional district in the United States—37,000 people do not have access to a wired high-speed Internet connection, and 9,000 do not have a wired connection at all.

This lack of access is particularly damaging to small businesses attempting to enter the market and compete with businesses in more urban areas. Nationwide, 39 percent of homes in rural areas lack access compared to just 4 percent of urban households. With-

out access to reliable Internet, small firms in rural areas miss opportunities to connect with new customers and cannot take advantage of cost-saving tools like digital payment processing and online distribution services. Children in rural areas also need access to high-speed broadband to utilize educational tools so we can usher in the next generation of tech-savvy entrepreneurs.

Rural communities need more resources to close the digital divide, which is why I wrote a letter to the Chairman of the FCC calling for policies that foster innovative technology in places where fiber cannot reach. In Maine, about 5.5 percent of households are connected to a fiber-optic network. A mixed technology model and access to unlicensed spectrum is needed to establish connections in extremely rural parts of our country. Because we know that economic growth—the kind small businesses provide to communities—will help to revitalize rural areas and make them attractive places to live, we need to invest in digital infrastructure, which is why I am happy to raise this issue to ensure that rural broadband is a top priority in any major infrastructure package done by Congress.

I am very proud to serve on the House Rural Broadband Taskforce to advance a transformative agenda to ensure that all Americans have access to high-speed broadband by the year 2025. That is the goal. This work will include ensuring Federal funding goes to the places in our country like Minnesota and Maine, places that need it most, and identifying innovative approaches to accomplishing affordable universal broadband coverage.

And just a quick note, going off-script on that, I will tell you that in Maine, where I come from, just in the last couple of weeks traveling around, you probably heard Congress talk about things like USDA grants and other things that are available to rural areas to help establish broadband service. The problem is sometimes the rules that get set up actually exclude the very people it is meant to help. So I have municipalities come to me all the time and say we would love to get a USDA grant to lay down some fiber and establish broadband for our community, but the FCC says we are not eligible for the grant because the ISP claims that they are already providing the service. But if you live there, if you go there, that is just not really the case. So it is a big issue and one that Congressman Stauber and I have worked on together.

Before I shut myself down here and turn it over to the Ranking Member, I just want to say a word about him, and I will begin by thanking you all here who live in his district for sending him down to Washington. It is certainly sometimes a rather hostile environment. I think you are probably all in agreement that it feels like our politics could be a lot better and that it is a divisive time in our country, and I have found working with Congressman Stauber to be just a gift, and I feel fortunate to be chairing a committee with a Ranking Member like he is, someone who is thoughtful, civil, and he is there focused on actually—well, he is mission oriented. The Marine in me I think would put it that way. He wants to get things done and not play games. It makes the work that we do on the Committee that much easier. I am looking forward to another year-and-a-half working with him.

Thank you again for the invitation. I think this is a great field hearing, a great topic, one that is critically important to your community.

And with that, I will turn the microphone over to the Ranking Member.

Mr. STAUBER. Thank you very much, Chair Golden. I really do appreciate you coming to our great state of Minnesota to chair this Committee hearing today.

I want to thank all of you for coming out to this hearing. For us, this is bringing Washington, D.C. to the local level. That is exactly where it is supposed to be, and I am really appreciative of you all showing up here and really talking about this important issue here, not only in rural Minnesota but rural America.

So these hearings, this is an official record of Congress. It will be put forth, and we want to hear what we hear back and try to legislate for reforms and monies that can help distribute broadband, deploy broadband throughout the country.

So, good morning, and thank all of you for being with us today in beautiful Scandia, Minnesota. I have a lot of people to thank. First and foremost, I want to thank our witnesses. Each of you have sacrificed an incredible amount of your time to be with us today, and I can't acknowledge you enough for sharing your perspectives with us.

I would like to especially recognize Matt, the owner of Bulltear Industries here, as well as your family and your co-workers who are hosting us today.

I would also like to recognize the efforts of Melissa Young and Lauren Fink from the staff of the Chairwoman of the Full Small Business Committee, Ms. Velázquez of New York, for being here with us today to make sure things go smoothly.

Finally, I would like to thank all state and local elected officials for coming out today and for the work you do here in Minnesota in your respective cities, townships, and counties.

I would also like to thank Congresswoman Angie Craig for being here today, taking some time. I know both you and Congressman Hagedorn are very busy today, so coming up and spending some time with us—and we work on the Small Business Committee together. So, Congresswoman Craig, thanks for your time today.

Congressman Hagedorn, I also want to thank you for being here today. We spend some time, quite a bit of time, as you know, on the Small Business Committee working on behalf of Minnesota, in particular rural Minnesotans. So thank you both for being here.

And before I begin, I want to also thank and recognize my colleague from Maine, Chairman Golden. I sincerely thank you for being here and taking the trip to Minnesota to hold this hearing.

Congressman Golden grew up in Leeds, Maine. It is a small rural town in Maine's 2nd Congressional District, and after the September 11th terrorist attacks on our nation, he enlisted in the United States Marine Corps and served four years in the military as an infantryman, deploying to Afghanistan in 2004 and Iraq in 2005 and 2006. Like me, he is in his first term in the House of Representatives, and he represents a very large part of a very rural state. And yet, again like me, he has a passion for working on the

solutions to the problems that plague our nation's job creators, our small businesses.

So don't let everything you see on TV and read in the papers fool you about how broken Washington is. Some things actually work in D.C. At the Small Business Committee, we work together in a very bipartisan way to get things done. So I want to express my gratitude to Jared for being here with us today and thank him for his commitment to working across the aisle for America's small businesses and men and women.

In 2018, 95 percent of Americans owned a cellphone, and 89 percent of Americans used the Internet. It is clear, technology has influenced nearly every aspect of society, from manufacturing to education, access to technology. Small business specifically requires access to reliable and affordable technology to compete in the market. According to a recent study, digitally advanced small businesses were shown to be three times more likely to create jobs and experience revenue growth, four times higher than small businesses who didn't employ the technology. Yet despite such outstanding terms, many small businesses do not take full advantage of the technologies available to them. Often this is due to the owners not realizing the benefits of such tools, or they simply lack access to reliable technology resources as a result of cost or location.

Today, more than 24 million Americans lack access to high-speed Internet, the vast majority of whom live in rural communities. In Minnesota specifically, over 400,000 people do not have access, and those that are lucky enough to have access may only have one provider to choose from. In a world where choices seem abundant, many Minnesotans are left optionless.

When comparing urban and rural broadband deployment, 97.9 percent of urban America has access to both fixed and mobile broadband, while only 68 percent of rural citizens have that same access. We cannot continue to leave our constituents behind just because they chose to live in rural communities. The lack of a solid business for rural broadband deployment remains the central reason for what is often referred to as the digital divide.

Large telecommunications companies have little incentive to invest in broadband infrastructure in areas with low population density. Instead, small telecommunications carriers are far more likely to invest in rural communities, often because they are their communities. Frequently, however, these small firms face numerous challenges in their efforts to increase broadband access.

Without the ability to disseminate the high cost of deployment or leveraged economies of scale, small telecommunications 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 rural areas that recent improvements to these programs have helped, but as always more can be done and will likely be done in an upcoming infrastructure bill.

That is why today's hearing is so important. We need to know what our communities need to serve them better. I am very much looking forward to this discussion, and again I thank you all for being here.

Mr. Chair, I yield back.

Chairman GOLDEN. Thank you, Mr. Stauber.

Actually, I am going to hand it right back to you and let you introduce the witnesses because this is your town, your district I should say.

Mr. STAUBER. Okay, thank you.

Our first witness is Adam Artz. He is the Owner of Realty Executives in Blaine, Minnesota. Originally hailing from Grass Lake, Michigan, he attended Saginaw Valley State University and majored in accounting. He has applied his trade all over the United States, working in North Carolina, Washington State, and New York, before finally seeing the light and moving here to the best state in the nation, Minnesota.

[Applause.]

Mr. STAUBER. He has been selling real estate in Minnesota and Wisconsin since 2000. Realty Executives has 20-plus agents and has approximately \$50 million in yearly sales.

Thank you for being here.

Our next witness is Marc Johnson, the Executive Director of East Central Minnesota Educational Cable Cooperative, a telecommunications, technology, and distance learning cooperative of 14 K-12 school districts and Pine Technical and Community College in East Central Minnesota. Marc has worked on rural broadband issues since 2011, when the Kennebec Broadband Initiative began their work. He has worked with Pine, Mille Lacs, and Chisago Counties in recent years, and currently works with Isanti County High-Speed Internet Task Force. Marc has been part of the Minnesota K-12 Connect Forward, working with the group since its launch in 2016. This initiative is a joint partnership between the Minnesota Department of Education, the Department of Employment and Economic Development, and the National Non-Profit Education Superhighway who together are working to ensure that all students in Minnesota have access to the infrastructure and high-speed affordable bandwidth.

Thank you for being here.

Up next is Greg Carlson, the Executive Director of Partnered and Affiliated Boards at Cambridge Presbyterian Homes in Roseville, Minnesota. Presbyterian Homes stands on a rich and dedicated history of service and care for older adults in the Cambridge community. Grace Point Crossings opened in 1962 and affiliated with the Presbyterian Homes and Service in 2006. Presbyterian Homes and Service, or PHS, is a non-profit, faith-based organization providing a broad variety of high-quality housing choices, care, and service options for older adults. PHS serves over 25,000 older adults through 46 PHS-affiliated senior living communities in Wisconsin, Minnesota, and Iowa. PHS has earned the reputation as an innovative leader concerned with promoting independence, vitality, and well-being for those they serve.

Thank you for being here.

And last, our final witness today is our host, Matt Crescenzo, the Owner of Bulltear Industries here in Scandia, Minnesota. Bulltear was founded in 1989 and has been serving the auto parts industry ever since, providing custom-built milled and machine specialty auto parts nationwide. Matt and his wife Krista have three young daughters, and Krista works as a nurse at Gillette's Children's

Hospital in downtown St. Paul. In addition to his work at Bulltear, he trains people of all ages on advanced manufacturing techniques.

Thank you for being here.

And now, Mr. Chair, I will yield back.

Chairman GOLDEN. Thank you very much.

I have to say that back in Washington, on the full Small Business Committee, I didn't really realize just how much Minnesota had infiltrated the Small Business Committee.

[Laughter.]

Chairman GOLDEN. But sitting up here, it is brutally honest that Maine is completely outnumbered on the Committee. But I will say on behalf of my three colleagues, it says a lot if you choose to be on something like the Small Business Committee. It is not the most exciting, it doesn't get the most attention from the press and the media and things of that nature, but it is a great place to try and do some good work for your community, so be sure to thank them for that.

Normally, this is the part where I would talk about all the rules around testimony, mostly about time limits, 5 minutes each and then 5 minutes of questioning for people sitting up here, but I think we are going to do it a little more informal than usual. So we are not going to enforce some kind of clock on you, but I would just say maybe be mindful of the length of your testimony so that there is a good opportunity for some questions and back and forth. That is where I think the real educational part of the hearing will take place.

So, with that, I am going to recognize Mr. Artz for your opening remarks.

STATEMENTS OF ADAM ARTZ, REALTOR, REALTY EXECUTIVES, BLAINE, MN; MARC JOHNSON, DIRECTOR, EAST CENTRAL MINNESOTA EDUCATIONAL CABLE COOPERATIVE, BRAHAM, MN; GREG CARLSON, EXECUTIVE DIRECTOR OF PARTNERED & AFFILIATED BOARDS, CAMBRIDGE PRESBYTERIAN HOMES, ROSEVILLE, MN; MATT CRESCENZO, OWNER, BULLTEAR INDUSTRIES, INC., SCANDIA, MN

STATEMENT OF ADAM ARTZ

Mr. ARTZ. Thank you. Can everyone hear me okay?

Good morning and thank you. Thank you so much for being here today on this important topic. It is my pleasure to share with you my feelings on this topic.

You know, I think too much today people run to the government for everything. Government can't be all things to all people. But there are instances when things fall through the cracks, and that is when I think government can play a role, and I think that is exactly what this is.

Internet is no longer a luxury. It is the foundation for the future growth and success of a community. Or it is a common denominator. Lack of it is a common denominator of failure and decline via the negative impacts that non-good Internet has.

Personally for me, it has impacted my life in a couple of different ways.

Number one, it has impacted my family. I have a couple of daughters that attended North Branch High School. I live in North Branch. I have offices in Blaine and in North Branch. My oldest daughter graduated in 2009. It has been a while, but nothing has changed. And to hear their frustration of getting cut off the Internet or not being able to get on the Internet, not being able to do homework, they can't upload a picture, and hearing their frustrations about that, and even later kids, I have spent some time in the school up there, and nothing has changed. My youngest daughter graduated in 2012; same same, and same same today.

I mean, that is a problem. When they are frustrated, kids are frustrated and it is a source of stress, when there is unnecessary difficulty, it negatively impacts their ability to engage and excel. When that happens, that is a problem. I mean, there couldn't be anything more important than empowering. You can't make anybody win, but as a business person I put my people in a position to win, and I think that is what I think we need to focus on, making sure our kids have that opportunity to win instead of the negative impact of making it hard on them and putting roadblocks in front of them. I think that is an awesome thing for Congress and all of us to focus on. Certainly that can be bipartisan, something that we all care about our kids.

The second way it has impacted me is as a business owner. I own a small real estate company, like I said, in Blaine and in North Branch. I have been in business for a while. It used to be when—I sold my first piece of property in 1985, of all things. It has been a while. But the first question we used to be asked was, "Tell me about the schools."

Today, I bet nine out of ten times it is, "Tell me about the Internet," because in my business we don't house agents anymore. Your phone is your office, and I think that is the same for all of us today. I mean, our phone, our smart phone is our connection to the world, and I think that is true with my real estate business. I just had a situation last fall, a house in my neighborhood in North Branch—great house, \$329,000. Because of the situation, they bought a house in Forest Lake, less of a house for more money because of the Internet. So what that does is it impacts the community, makes it less desirable, less value, and it just hurts it.

I can't upload pics from my house. I am right on the city limits in North Branch, right on Highway 5, if you know North Branch. I am just on the city limits, and I can't upload pictures to the MLS unless I go into my office, which is right in downtown. I mean, the core of downtown is okay, but as you get out, I am maybe two or three miles out of town and I can't upload a picture. Needless to say, you should hear me when I have to drive up to the office at 7:30 to get an initial on a piece of paper. I promised I wouldn't swear, but I promise you I do then when I have to do that, going into town. I mean, that is crazy today.

The majority of all paperwork in our industry today is electronic signature, and stored electronically. When you can't do that, it makes my job really hard and it impacts my business, impacts the community. If two identical homes are available and one doesn't have Internet, that is a huge impact on values of real estate.

I want to stay brief, and I think you get the gist of what I am saying. But, you know, negative impact builds, just like positive. It is a spiral. And we are negatively impacting our communities with lack of good Internet, negatively impact a family, negatively impact a business. Those things add up. I wrote negative impact on family plus negative impact on business equals rural communities in decline, and you see that all the time now in the paper about some small town out in Western Minnesota that is shrinking and turning into a ghost town.

I think one of the things the Internet does do is it makes the community smaller and it makes them part of the community. I just wonder how much of a role that has played in Minnesota, because the housing out in those areas is very affordable. I mean, where you look in the core of the Twin Cities now, housing is really unaffordable to many, many people, and I think a huge help with that is being able to have people out where housing is more affordable.

The old saying "drive until you can buy," well, when that Internet runs out, that becomes not an option, and it is just a recipe for disaster to do that.

Top-notch Internet is a foundation for growth and success, or a huge roadblock, and we all get to choose.

And I am going to leave you with this one last thing.

We have a remote-controlled vehicle on Mars, but I can't get on the Internet in North Branch. I mean, see what I am saying? So I would really appreciate anybody's help in fixing this as soon as possible. And I brought a map of Mars with me, but Miranda wouldn't let me show that to you guys.

[Laughter.]

Mr. ARTZ. So I gave it to her. I will give it to her as a souvenir.

But thanks again so much for being here, and please fix this immediately.

[Applause.]

Chairman GOLDEN. Thank you very much, sir. That was great.

Mr. Johnson, you are up.

STATEMENT OF MARC JOHNSON

Mr. JOHNSON. Thank you, Chair Golden, Representative Stauber, Representative Craig, Representative Hagedorn, members, staff, guests. Thanks for holding this hearing today and for the opportunity to speak before the Committee this morning.

Small businesses are the lifeblood of communities and rural areas in East Central Minnesota, as you have heard, throughout the state and around the nation. Agriculture, tourism, hospitality, manufacturing, healthcare, retail, and other sectors rely on the Internet to communicate with suppliers and customers, to provide their services, and to stay viable. These businesses also need an educated workforce willing to live and raise families in the rural areas.

Without access to affordable high-speed Internet, businesses cannot thrive, families are less likely to locate in the area, and it is difficult to provide a fair and equitable education. Those of us who commit to life in a rural community are sort of forced to get by and make do with what we have.

Northland Automation and Engineering is an engineering and manufacturing company located in rural Kanabec County just a few miles from Mora, Minnesota. The business is located on the farm of the company owner. If he or one of his employees wants to utilize simple video conferencing to meet with a client, perhaps show some parts, talk about customization, they often must make a 30-minute round-trip into town to utilize an available location with high-speed access capable of providing a stable video connection. He gets by, but he comments about the limitations his company has for expansion and taking on new clients due to when he is hampered by poor broadband access.

And there are all kinds of stories like that, similar to this one, and as you just heard from Mr. Artz, people will decide not to locate in areas with poor broadband access and services. If we want a diverse workforce, strong communities, and ample opportunities for everyone to reach their potential, we must move beyond just getting by.

How does education fit into this scenario? We live in a digital world, and education is no different. The Internet is routinely used for research, collaboration, communication, and general learning. We also know that learning does not take place only within the walls of a school building.

In education, we cannot just “get by.” It is not okay for us to leave 20 percent or more of our students without the same learning opportunities as the other 80 percent. In the world of digital learning, that is exactly what is happening. In reference to one of the maps that I have included in the packet, according to statistics from the Minnesota Office of Broadband Development, eight of the twelve school districts in the Region 7E economic development area, East Central Minnesota, are below 80 percent for percentage of households served by broadband speeds that fit the FCC definition of broadband, and two of the districts are below 50 percent.

So essentially, in these areas, we are leaving 20 percent to 50 percent of our residents behind, many of whom have children, some of whom are trying to run a farm or a small business from their home, and others who may be accessing online courses or completing assignments from higher education institutions. We have several technical and community colleges in this area who have many students who are not able to get to campus to access the Internet. They need to be able to do their assignments and so on from home. That is difficult when you don’t have good access.

Most of the K-12 school districts in our region, have placed mobile devices in the hands of their students intended to be used both in class and at home, and they are often cited as one of the most impactful technology-related tools for teaching and learning.

Troy Anderson, Principal at Pine City High School, says: “Without a doubt, Chromebooks have been the most impactful for our district. They have started to replace textbooks and are used for communication between students and staff.”

Dr. Ray Queener, Superintendent for Cambridge-Isanti School, adds: “As curriculum continues to migrate to digital and as more and more resources are available digitally, our Chromebook 1:1 initiative has greatly impacted teaching and learning in our district.”

Minnesota has a grassroots project called the Minnesota Partnership for Collaborative Curriculum. I am proud to say that the schools in ECMECC were pioneering members of this collaborative, and it has grown to involve over 225 school districts. The goal of this project is to create a comprehensive collection of digital open resources in the four core subject areas for grades 3-12. These resources are created by educators and centered around Minnesota's content standards and made available to Minnesota schools at no cost. They are designed to be used with the mobile devices that students are using and have the potential to replace the use of expensive textbooks and purchased content.

However, in our region, expensive and slow broadband hampers our ability to fully utilize these resources that our teachers helped create.

Dean Kapsner, Superintendent of Isle Schools, comments on this, saying: "The lack of reliable Internet access affects how we can deliver curriculum and assignments outside the school day and has stalled our efforts to create a viable e-learning plan."

Steve Bistrup, Technology Coordinator in Milaca, agrees, writing: "The lack of rural broadband has played a significant role in limiting our ability to fully transition to digital learning."

As with small businesses trying to thrive in this environment, schools find ways to make do. Long route buses in some of our districts are equipped with onboard Wi-Fi. Schools have purchased mobile hotspots to provide to students without adequate home access. But these solutions only work in areas where there is a reliable cellular connection, which cannot be assumed in many rural parts of our area. In fact, when I drove up, I didn't have a cell connection, or a very minimal one when I got here. We are not very far from a town. Other accommodations include keeping areas of the school open longer, providing printed or other offline materials, extending deadlines, et cetera. All of these accommodations result in some students not receiving the same, or in some cases even similar, educational opportunities.

The Minnesota legislature passed a law in 2017 that allowed schools to use e-learning days in lieu of weather-related school closings, which around here we have quite often. You probably do in Maine, as well. To count as an instructional day, students need to be able to access assignments and resources online, and teachers need to be available online to answer questions. That is written into the law. This winter, some Minnesota districts utilized more than five of these days. In our region, no schools were able to take advantage of this opportunity because they could not count on all students or staff having adequate Internet access.

Superintendent Robert Prater of Hinckley-Finlayson schools indicated: "We do not use e-learning days because broadband is not reliable enough or widespread enough."

Amanda Thompson, Technology Integration Specialist at East Central Schools, agrees, saying: "I have concerns about both students and staff being able to access the Internet from home to fully engage in an e-learning day."

Our students and families are being left behind in the digital age. Craig Schultz, Superintendent of Schools in Mora, asks: "Is it truly a free and appropriate education when there are significant

broadband issues between families just miles apart within a district, let alone across districts in the state?"

We need to resolve this issue or families will move away from rural areas with poor access and inequitable educational opportunities. There will be fewer people to fill the jobs in small businesses that have tried to get by, and our rural communities and way of life will wither away. Like rural electrification and telephone did for rural areas in their times, we need rural broadband to make rural living viable and a choice that people want to seek out rather than flee.

Thank you.

[Applause.]

Chairman GOLDEN. Thank you, sir.

Mr. Carlson?

STATEMENT OF GREG CARLSON

Mr. CARLSON. Representatives, I would thank you for hosting this, and Committee members, thank you for your time here and the opportunity to address this issue. We are going to come at it from a health care perspective.

For most of us, the word "home" holds a special meaning. You may recall the song recorded by Elvis Presley, "Home is Where the Heart Is." Now, I am not going to sing it for you, but he describes home with the following lyrics: "I don't need a mansion on a hill that overlooks the sea, anywhere you're with me is home. Maybe I'm a rolling stone who won't amount to much, but everything that I hold dear is close enough to touch."

And near the end of the movie *The Wizard of Oz*, Dorothy clicked her heels and stated, "There's no place like home." She longed to leave the wonderland of Oz for her simple, dusty old farmhouse in rural Kansas.

As healthcare providers, we are called to help individuals and their families live well in the place they call home, and in our rural county that may be the family farm, or in mid-winter Minnesota it may feel more like an igloo, cold outside but warm inside. The idea of living a long, healthy life at home hits a home run for the people of rural Minnesota.

Imagine for a moment a seamless coordinated care model made possible by new technology resulting in better patient outcomes and a purposeful, cost-effective, self-fulfilling healthcare experience. One way to accomplish this objective is to reduce our reliance on our acute care, rescue-oriented health system while reinvesting those dollars in life enrichment and purposeful living in the place one calls home.

Data provided by Kaiser Health shows that long-term, only about 10 percent of our individual overall health is driven by our health system. Not surprisingly, most of health is driven by where we live, our home environment, our genetics, and our behaviors.

Approximately 40,000 people live in Isanti County. Nearly 60 percent reside outside the city limits of Braham, Cambridge, and the City of Isanti. Most of these rural households have less than adequate Internet, making it difficult to access preventive healthcare services, leaving them susceptible to fragmented, episodic care and poorer health outcomes.

Electronic health records, technology-based patient engagement strategies, health information sharing, and remote monitoring technologies all require high-bandwidth broadband connections. Such telehealth technologies help overcome many of the obstacles to healthcare delivery confronting our rural communities. In particular, we see enormous potential to expand access to certain services and improved patient outcomes, including what we hear a lot about today, mental health and addiction services.

Telemedicine and mobile health are rapidly emerging as cost-effective solutions to overcoming many of the obstacles to healthcare delivery. The proper infrastructure must be in place to allow for these and other technologies to be implemented in the home.

Consider the potential of a simple array of sensors strategically placed throughout a residence of a home-bound adult. Without infringing on their privacy, these sensors link to a computer program and could monitor things such as room temperature and/or whether the refrigerator door has been opened or not, usual patterns of motion, lighting and various home safety devices. Any unusual interruption or change in pattern would alert the designated family member, a friend, a neighbor, or a healthcare person that would be able to respond if appropriate and necessary.

For the Cambridge Medical Center, planning involves leveraging technology for the patient-facing experience and interaction. The objective is to enhance the online experience by expanding the reach of telehealth and mobile health technology with improved access to online scheduling, video visits, medical messaging with patients, and online video education. This, in turn, leads to shorter wait times, screening concerns before an emergency occurs.

Limited access to high-bandwidth broadband connections is a concern for physicians. Specialists are often required to access files or view images initially from home to expedite a medical intervention such as urgent care or emergency care services. Dr. Amy Hauptert, a family practice physician at the Cambridge Medical Center, shared with me that in addition to a full day of meeting with patients, she spends two or more additional hours completing required documentation. As a result, accessing patient medical records at home is essential for her to balance work and family life. Reviewing progress notes, completing insurance forms, scheduling, responding to patient concerns, these issues require physicians to have access to medical records 24/7.

It is no secret that resources are being stretched in healthcare. Labor is tightening, and providers are being asked to do more with less, while assuring patient safety and satisfaction. Healthcare is quickly moving from fee-for-service to a value-based delivery system. Success will require the ability to deploy telehealth, particularly as part of care management programs.

Ensuring communities in rural areas can take full advantage of the benefits of telehealth solutions requires access to reliable and affordable broadband connections. Telehealth offers a wide range of benefits, immediate access to care, reduced cost, and offers more convenient care options and improved care outcomes.

The Isanti County Broadband Task Force and area health care providers appreciate your focus on expanding broadband

connectivity, and we are grateful for the opportunity to share our rural perspective. Thank you.

[Applause.]

Chairman GOLDEN. Thank you, Mr. Carlson.

Mr. Crescenzo, thank you for hosting us here in the shop today, and we look forward to hearing what you have to say.

STATEMENT OF MATT CRESCENZO

Mr. CRESCENZO. Hello, friends and neighbors. My name is Matthew Crescenzo. I am a 44-year-old father of three young girls and a husband to my wife Krista. Krista is a nurse at Gillette Children's Hospital, located in St. Paul, Minnesota, and works in the child brain injury rehab unit. I work in this building designing automated machines like our Star Lab CNC plasma machine. The Star Lab is a CNC machine that uses the fourth state of matter to cut materials along a computer program path. I am the chief engineer of the machine, and together with our partner Hypertherm, we offer an outstanding machine in this market.

I train folks at universities, high schools, businesses, and garages, and I have trained well over 700 times across the USA and have been fortunate enough to train the deaf and have quadriplegic customers who are among the sharpest minds.

The place you are sitting at was only possible through use of the Internet, a unique gift of communication between people. We would be having this meeting near a 100-year-old barn ready to collapse; wouldn't that be exciting?

When I suffered a spinal injury on the job, my world became small. Frustration and desperation were weighing heavily on my heart. I pooled my resources and stretched my mind's capability beyond my expected personal limits. With the help of my good friend David Boucher, who currently works at Toro company and who set up a website for me, I was able to take my ideas and my dreams of machine products, bringing them to the Internet and discovered a vast amount of interest in these parts that I dreamed and engineered. I was able to take my passions to market.

It was the Internet that allowed this to exist out of the idea of offering something awesome for a good price. I could not have done it without the Internet and without my father, Peter Reed Crescenzo, who challenged and supported me, sometimes challenged more than supported.

[Laughter.]

Mr. CRESCENZO. But that is a father's burden. I love and respect my father.

Where this company has come so far today I could not have imagined years ago. We have seemingly unlimited potential for growth here. We are ready to take the next steps, and I am ready to take a paycheck.

We fumble through our day using the local Internet. It is as important now as it was when I started this business. We even have a dedicated line of 10 megabits up and 10 megabits down, which really wouldn't get you a hot dog in the Twin Cities, and that is nearly \$300 a month. That is the very top capability of our monopolized service provider.

We deal with dropped calls when using the Internet and rebooting our modem several times a day. I thought I was alone. For years we were rebooting our modem in the house, in the shop. It wasn't until my friends and neighbors told me they do the same thing.

Our business relies on positive customer experience, not volume, but the network of very happy customers has kept us busy—and boy, are we busy. We are grateful for that.

It is crucial to our success that we can upload training videos, download customer files, and talk on the phone without interruption. The infrastructure is toast out here. We need a way forward.

The technology has moved beyond our rural areas 20 years ago. I have seen businesses close because they cannot have a robust security system tied to the Internet or really cannot develop without access to high-speed Internet.

Businesses are moving out of state not only because of local ordinances but because of the vast desert of little to no-speed Internet that we have here.

Friends and neighbors, we need real help for our community to prosper. I commend you folks before us for shining a bright light on our dimly lit network.

Communication between people is what makes good communities and binds the heart of mankind. The invention of the Internet was brilliant, and I believe it was inevitable.

However, without bolstering our community and supporting ideas like this, we remain in a very dark age.

The industrial revolution is not over. It has changed, and we compete with the world now. In many ways, industries have gotten cleaner, better, and smarter. For example, our partner Hypertherm is a gleaming example of an employee-owned Fortune 500 company that takes green to the next level without sacrificing quality.

But we need faster Internet out here. This business needs to get training videos online, download customer videos, and get our service and support to today's standards. We are struggling daily with this.

In ending, I would like to thank you for coming out to our field of dreams, and I look forward to your comments and questions. Thank you.

[Applause.]

Chairman GOLDEN. Thank you very much for that, sir. And thanks again for having us here.

I can't help but listen to the four of you and think about back home. The similarities are quite striking. So I thought I would just throw out a couple of questions to you to kick it off. There are no right or wrong answers here. We are really here to listen and learn.

Just so you all have a sense of the types of things that we think about on the Small Business Committee, Congressman Stauber and I, it is not just things like having broadband access that we think about. It is also the ways that government sometimes makes decisions that get in the way, makes decisions not really understanding areas like this one.

Back home in Maine, just as an example of that, Madawaska, Maine is a paper mill town up on the northern border, right on the

Canadian border, and up there I was talking to a gentleman running a small business. It wouldn't be there if it wasn't for the paper mill, and he is a big part of their supply chain. But having access to faster Internet is one of the chief challenges that holds him back from growing.

He does a lot of work with the SBA historically, when he needed a loan or something of that nature to make an extension, make a good investment in his business, and lately he stopped working with them because SBA has gone ahead, in their infinite wisdom, and said, well, we are in a digital age now, so we are going to move everything online. He used to fill out all the forms and applications by paper, and he finds it so much slower and frustrating now because his Internet speed is so much slower than advertised, and he finds it frustrating. He will be halfway through the process and all of a sudden the thing stops working and he has to start all over again. It drives him nuts. So now he is going to other lenders instead of using an SBA program that is there to give him a lower interest loan and help a small business grow.

So those are the types of small decisions that we are also, I think, always looking to see how can we make sure that government is making decisions with an eye on you all.

I just wanted to ask you, I know you are not going anywhere because you love this community, but back home in Maine recently I listened to three different towns in western Maine talk about how they are all competing for a manufacturing firm that is looking to move into western Maine, and the source of competition, the final decision is where can they get the fastest Internet. A couple of them are trying to compete for grants to get that last mile because there is some backbone pretty close to where they are but it is not quite coming into their town. These are the types of towns that have lost a lot of manufacturing through the years, so they are desperate to get something back.

I am just curious, you seem to talk a little bit—you are in the weeds compared to me. You talked about 10 up, 10 down, 25 and 10. I don't know what all this stuff means, to be honest with you, but I listen to people like yourself. If you were starting over again, what is the Internet speed that you would be looking for if you were talking to someone about buying some property to build a business?

Mr. CRESCENZO. If we were to look at the broad scope of starting over or building a building, we wouldn't do it with this Internet. It would be the kiss of death for our business model. You really use a lot more bandwidth as you grow. So having the bandwidth available is like having the land available, having the construction company available to build your building, or somebody to do concrete. It is very important, and it is amazing in this day and age that it has become so important. But it has a huge positive impact on our business when things work correctly; and when they don't, we are spending an enormous amount of resources trying to get them to work correctly.

So I would look at that and say where we are at today, we would not start fresh here.

Chairman GOLDEN. So, I am curious. Some people are happy with where their business stands, and it sounds like you have been

very successful, and you have the dream job that you have created here. But if you had access to faster Internet, could you and would you grow and create more jobs in this community?

Mr. CRESCENZO. That has been my goal, to grow in this community and create jobs. So we are working with the county to allow light manufacturing. Where we are at, to be able to expand and be able to move into the greater industrial parks—and I am a big, firm believer in this county. We have a lot of great talent pool to choose from, and we want to support the local businesses here. We are here, our heart is here, my family is here. We want to stay here.

Chairman GOLDEN. Thank you very much.

I wrote a little note here, Mr. Artz and Mr. Johnson, while you were giving us your opening statements: Ask them if there is a workforce shortage in this district. I figured I knew the answer, but he wrote “yes” with two exclamation points, and I am not surprised at all.

I am just curious. Our problem in Maine, Mr. Artz, often is that as we try to address our workforce shortage, and it is often things like lack of broadband that leads a lot of our graduates and young people—they go away for college, and when they start thinking about going back, it is lack of these types of things when they start thinking, oh, maybe I will settle in southern Maine instead of northern Maine, or not even come back to the state at all.

But often we hear a lot of people talk about, well, you know, I found that dream opportunity to come back home to Maine, or someone looking to take a job in Maine, but they had a spouse who also needs an opportunity to work, and the Internet figures in a big way in a lot of cases to the ability to work from home, work remotely, maybe even keep the job they have so that they can move the family and take that other opportunity for their husband or wife.

I just thought I would give you an opportunity to maybe tell us if you have heard those stories as a realtor and what types of missed opportunities. I don’t know if you have any specifics, but we would love to hear them.

Mr. ARTZ. Yes, I do. You know, it is true. Last fall, the City of North Branch was working with the Minnesota design team on some reconfiguring of North Branch and what opportunities, because it faces those challenges you are talking about.

And it was interesting because we went to the school and we asked the kids questions about the future, because one of the questions that was in everyone’s mind was what would keep you here. So one day my 25-year-old daughter and her friends were hanging around and I said, you know, girls, what would keep you? What would keep you in North Branch versus moving to the Twin Cities or somewhere else? And it was interesting because a lot of times you think you might know the answer, and when you ask a kid you get the real answer.

And she said, you know, dad, affordable housing, affordable housing and opportunity, and that is not there without the Internet. They are not going to go anywhere where there isn’t affordable housing. And like you said, the spouse that can’t have an oppor-

tunity in a rural area, it is just a recipe for not being successful and a disaster, and it does directly affect the real estate business.

The blessing of our industry is I do hear a lot of things. You hear the real story. So I do think the communities having good Internet, like everyone is saying, it pulls that community closer. It makes affordable housing more. It makes that community more vibrant, it makes it more desirable because they can buy way more of a house. They become part of the community, which enriches the school. It is a spiral, a domino effect, and a domino effect back.

So, yes, I do hear that a lot, and those are the number-one concerns. But like I said, Internet access, affordable housing, they kind of go hand in hand. So I hope that answers your question.

Mr. STAUBER. Thank you, Chairman Golden.

Mr. Johnson, one of my questions for you is what are some of the biggest differences that you are seeing in schools that are connected versus schools that aren't?

And before you answer that, I would just say that I have four kids. They are using the Internet in the City of Hermantown, where I live. The location where I live, we have high-speed access, and they can do their homework. Just down the road, they don't, and that is frustrating for those parents.

So I will ask you as folks that work with the schools—what is your thought on the question, connected versus not?

Mr. JOHNSON. Sure. Thank you, Representative Stauber. Excellent question.

I think when I talked about being in the digital age and that ability to take that device home, most schools in Minnesota are doing what we call one-to-one initiatives, right? Where they give a device, a Chromebook, a tablet, in some cases it is a laptop, to students, and then they design their learning around that. That becomes their hub for learning, that device, right? And they use technology to access assignments. They use technology to access—in some cases, what you will see in the places where they can truly extend that to the home, there are terms like—you will hear “flipped learning.” That is a term you will hear, and that is a situation where they will change the way classroom instruction is done where an instructor will do a lesson, a lecture, examples and things like that, via video, right? Students will take that home, consume that at home, and allow for the classroom time to be group learning rather than having them have to sit and listen to a lecture and see examples for half an hour, and then have a little bit of time to do their homework, and then they go home where they can't get questions answered.

In an environment where digital learning is really in place, an instructor can provide sort of that initial learning at home where they can consume it, and then they can come back to the classroom and actually interact with the instructor on a more personal basis, get their questions answered and so on.

So I think that is a big difference in what you will see. Those districts that have good-quality access at home, they are able to leverage all of that. Those who don't, you have that 10, 20, 30 percent or more of students where you have to give them alternate instruction, and it is less effective for them, and you have minimized what you can do with the whole group because you are sort of deal-

ing with the lowest common denominator in a sense. Okay, these students who didn't have access, we have to help them, we have to bring them along, less time to spend on those who had access.

And if I can, for a moment—

Mr. STAUBER. Go ahead.

Mr. JOHNSON. Chair Golden, you asked the question about bandwidth and what is necessary. One thing I will point out is the FCC defines 25 meg down and 3 meg up. I think it is that "up" part that is problematic, especially for businesses, for healthcare. That piece is important if you are going to do healthcare monitoring. It is important if you are going to be able to upload your videos and your files and so on. So I will just add that piece to your question about that.

Sorry, Representative Stauber.

Mr. STAUBER. Thank you, Mr. Johnson.

Mr. Carlson, you talked about the healthcare. So I was on the County Board of Commissioners and the Community Health Board, and we talked about the telehealth, how important it is. For instance, you talked about the mental health initiative going across the country. In northern Minnesota, if you don't have the ability to connect, that means that a law enforcement officer who brought the individual in who was a danger to themselves or others would have to travel all the way to downtown Duluth, which takes him or her out of their district, when they could get that high-speed connectivity in their location and the doctor can interact over Skype or over the monitor, which is going to save literally hundreds or even thousands of dollars even for one trip. So I was very well aware of that.

So when you talk about connectivity for the seniors, you talk about mental health. Can you tell us how important it is for those seniors that you are taking care of, living in their home, how important it is to connect to their children, their grandchildren, what that does for their mental health?

Mr. CARLSON. Yes. Thank you. It goes back to an earlier point that I made where Kaiser Health had indicated in their data that it is really just the 10 percent of healthcare that is driven by our health system, and it is the rest of it that involves the quality of life. So that kind of connectivity, a soft kind of a thing, being able to connect with family, grandchildren and so forth, it improves one's well-being, their sense of purpose, improves the quality of life, keeps them more engaged, and the effects from that is really the bulk of what really produces good health.

Mr. STAUBER. And I think that is important to note. We are not talking a lot about that part of the quality of life. I just want to share with you and the audience members that when my wife was deployed, having the ability for my kids to see mom over Skype was huge, and you talk about the mental health, being able to see mom, and this goes across the country. So if we hadn't had that opportunity, it would have been a much more—it was tougher for me, but I am talking when you get back to the seniors, I think it is so important that they connect. When they are able to see their grandkids or siblings or relatives over the Skype or being able to connect with them right away, I think that is so important. That

is part of the healthcare that we don't see because that is the quality of life that is important.

Mr. CARLSON. Representative Stauber?

Mr. STAUBER. Go ahead.

Mr. CARLSON. Just an additional comment to that. In my experience, what I have seen with older adults, they shy away from anything—you know, the technology. But it is that one thing, the idea of connecting with family, that drives them to learn how to use the Internet.

Mr. STAUBER. My parents are in their mid-80s and just starting to send videos to the grandkids now, so they can do it, for sure.

Mr. Crescenzo, one question for you. You made a statement that you would not locate here if you had it to do over again because of the lack of Internet and the quality of the high speed; is that correct?

Mr. CRESCENZO. I feel like it is important to note that at this stage in this business, it is required. When we initially located here, it was to raise kids, it was to do what is affordable. Now we are in a different, bigger ball game, so we need this bandwidth to really flourish with this business. And if we were to do it over again, where we are at now, we couldn't do it here.

Mr. STAUBER. And those of us who represent rural Minnesota, rural America, that hits right to the—that hurts to hear you say that, but that is the truth. And that is exactly why we are here, to make sure that the people that want the quality of life outside in rural Minnesota, rural America, can have that opportunity.

Mr. Artz, you talked about in your real estate business—and this will be my last question. You talked about in your real estate business the ability to—that first question, is it connected to the Internet or not. A house that is worth \$250,000 connected to the Internet or one that is not, how quick of a sale is it to connect? Like right now?

Mr. ARTZ. Yes, it is night and day, and it is really not a matter of value. It is a matter of they don't want the house if they can't connect, because people don't want to go through what he does. I mean, they don't want to deal with that. They see that as not an option for the kids anymore, and themselves. So, yes, absolutely. Two equal houses, the value is night and day difference, and it doesn't mean if it is \$10,000 less they will buy it, because they won't. It is amazing that that has become so prevalent, because when some of us older people grew up, we had books and we never had any of that stuff. I used to carry coins in my car to go to the pay phone, where today it is just a reality of life now.

Mr. STAUBER. Was the pay phone a dime or a quarter?

Mr. ARTZ. Well, a dime.

[Laughter.]

Mr. STAUBER. Me, too.

Mr. ARTZ. But a little later the quarters, yes, so you always carried those.

I mean, I could never imagine the technology that we have today, but this is electricity back in the day that our parents or grandparents were—

Mr. STAUBER. I can tell you every realtor that I talked to would answer that with the same passion you just had. It is the Internet that makes the difference, so I appreciate your comments.

Mr. Chair, I yield back.

Chairman GOLDEN. Thank you, sir.

With that, we will recognize Congresswoman Craig.

Mrs. CRAIG. Thank you so much, Mr. Chairman.

My name is Angie Craig. I represent Minnesota's 2nd Congressional District. That is essentially southeastern Minnesota. About half of my district geographically is actually greater Minnesota. So having grown up in rural Minnesota, or having grown up in rural America, it is so critical that we start to make these investments, and I feel really, really lucky to serve both on the House Committee on Small Business as well as the Transportation and Infrastructure Committee with Congressman Pete Stauber. He and I have been working together on some things we care deeply about, and it is great to be in your congressional district.

I know a little bit about your district, Mr. Artz. As you were saying, you were talking about just two or three miles out of North Branch. We have a cabin about eight miles out of North Branch, and I can't tell you how many times we have had to pack up the cabin early so the boys could get back to Eagan and turn their homework in or get their homework done. So that particularly resonated with me.

My background is I worked in two healthcare manufacturing companies before I represented Minnesota 2, and I now own a little part of a small business just outside of my district. So this is just a critical conversation that we are having, and I know Pete and I have said that any infrastructure package we do has got to prioritize investment in high-speed Internet in rural America because at the end of the day, every American deserves the freedom to have an opportunity to earn a good life where you want to live, and many of these communities are dying because we haven't made that investment.

So thank you for being here, and everything I have heard here is exactly what you would hear if you were down in southeastern Minnesota in my congressional district.

Mr. Carlson and Mr. Johnson, I spent, again, over 20 years working in healthcare, and I want to apologize first because when I leave, when I am done, I have to go back to my district to talk about healthcare on a panel right after this. But you talked about mental health in rural areas, and you also talked about, which I love, moving away from this fee-for-service pay system, and how being able to move to an outcomes-based system depends on the ability to have telemedicine in rural areas.

So, Mr. Johnson and Mr. Carlson, talk a little bit more about each of those topics.

Mr. CARLSON. When I hear the news locally and nationally, the issue of addiction, the opioid crisis and what not, when I speak with law enforcement people and the challenges that they face, whether it is traffic issues or intervention in family issues, whatever the case might be, the need to intervene in a meaningful way is really critical. But many people who are isolated out in the community, they might go in for treatment, and once they finish treat-

ment they are back into that home environment where maybe it is a toxic environment, or whatever the case might be.

I certainly am not an expert on that end, but I do know that the ability to maintain some connection—and I know there is technology that can help with that. There are programs. There are ways of checking in and so forth. But in helping people move further away from their addiction or their mental health issue, that period of time is critical. If it is just simply a discharge from a treatment program and then they are back home or back to wherever their living situation is and there is not the ability to have a robust follow-up kind of a program, the likelihood of a repeat of that kind of behavior is significant, much higher.

Mrs. CRAIG. Thank you. I know in my district, sometimes you have to drive 30 or 40 miles just to get to the closest follow-up or preventive health, and the ability to do that via telemedicine would just be critical.

Mr. Johnson?

Mr. JOHNSON. Sure. Thank you, Representative Craig. In the schools we have mental health issues with our students as well, and of course we lose many students in the United States to suicide and other things related to mental health, so it is a huge issue.

There are a number of things involving telehealth within the mental health community that would help. Some of our counselors and mental health professionals in the schools would or could, because again sometimes you have to share them, small rural districts, you have to share these staff among districts, and then that involves travel time for them to get back and forth, and technology can play a role in that, and high-speed Internet in terms of having a telehealth meeting with those students in a different school building if you are a shared staff person. I think there is a lot of opportunity for that, and there is opportunity to extend that further to the home if at home they have that same access. So I think that is an important thing.

I will go back also to what I said about upload speeds. If you are going to have that kind of connection with somebody at home, you need the upload speed to make that happen, or if you are going to have monitoring, or if you are going to provide services, whether that is mental health or other healthcare services to people at home, you have to have that other side of it. Download is great; upload is what you really need for me to be seen on the other end.

Mrs. CRAIG. Absolutely. What else would, from a small business perspective, help you if we were to invest in around that? I mean, we are talking about transportation and infrastructure as well. Is it just high-speed Internet? Is it highways, roads, bridges? Any thoughts there?

Mr. CRESCENZO. That is a tough one. I really have to consider the brevity of the entire roads, bridges. We are in a rural area, so we are between major lanes of transport, between the Twin Cities and Hudson and access to the great state of Wisconsin. So we look at what would benefit our business. The only thing holding us back here is a go-for-it. We don't need much more than an okay from the county and high-speed Internet, but we may be an exception.

Mrs. CRAIG. Thank you.

Thank you, Mr. Crescenzo, and thank you for sharing your beautiful family with us here today.

Mr. CRESCENZO. Thank you very much.

Mrs. CRAIG. Thank you.

I yield back, Mr. Chair.

Mr. ARTZ. Can I make one last comment on what you said? With the Internet, what I wonder is what is being missed. When we provide that Internet to everyone, I think it is going to unleash the entrepreneurial creative spirit of America that must be massive untapped talent out there.

Mr. STAUBER. I call that unleashing the economic engine of Minnesota's 8th Congressional District.

Chairman GOLDEN. Congressman Hagedorn?

Mr. HAGEDORN. Well, thank you, Mr. Chairman. It is a pleasure to be here. I appreciate you holding this hearing. It is good to see Congresswoman Craig, our colleague from Minnesota; and last but certainly not least, my good friend Pete Stauber. Mr. Ranking Member, thank you for suggesting this venue. It is an honor to serve with all of you in Congress and be working on the Small Business Committee to try to move things along here in rural Minnesota.

I grew up on a grain and livestock farm down in Truman, Minnesota. Actually, the 1st District that I represent is most of southern Minnesota, all the way from South Dakota to Wisconsin, and then Iowa up about 80 miles. The little town that I grew up in used to be a hopping place—three grocery stores, seven gas stations, and on it goes. It is still about 1,000 people, but there is not much of that going on.

Times have changed, and rural America has been squeezed for many decades now, and we have been under pressure, especially hearing about the last six or seven years, low commodity prices in agriculture, high input costs, and you need fewer and fewer people with all our mechanization and technology to work the land. Where I come from, if agriculture suffers, so does our district.

But we also have other interests, small business interests that are very important, medical interests. We have awesome rural hospitals in southern Minnesota, and then there is that clinic you may have heard of, the Mayo Clinic, which is in our district.

And then up here you have interests like mining. I appreciate what the Ranking Member has been doing, and his predecessor for that matter, to bring mining back, have those good-paying jobs, and to create opportunities in rural Minnesota. Pete, you have my support on that, whatever you need to move that forward.

But let's be honest, if we don't have people living in these areas, it doesn't really matter what industries we have, we are still going to suffer. And some of that is quality of life, as you have talked about, to make sure that we can attract people, keep people, want people to be in our rural communities. A lot of that is just infrastructure. Do we have good roads, good bridges? Do we have sewer and water?

A long time ago in the rural areas, they went in with the RA and made sure we had electricity, and this case is no different. This is an infrastructure issue, it is a quality of life issue, and if we don't have it, we are going to suffer. It is going to be very difficult for

our folks to keep those communities sustained and vibrant, which is one of my priorities.

I will ask Mr. Carlson, when we talked a little bit about telemedicine, I think that is an emerging area. The Department of Agriculture has some sort of standard, the 10 megabits per second versus 1, and you are saying you have to have at least 3 in order to do just face-to-face conversations. Is that true?

MR. CARLSON. Well, as it relates to technical questions, I am not the person you want to ask that question. Maybe Mr. Johnson can—

MR. HAGEDORN. Well, is there anyone here who can—the standard that Agriculture has I don't think is going to be conducive. Bill Eckles, who heads up Bevcomm in my home town, a telecommunications company, said 25 and 3, which is what you talked about, seems to make more sense. That is what we should be building towards and spending our money towards. Is that—

MR. JOHNSON. Thanks, Representative Hagedorn, for the question. The previous—like some of the CAF programs, the Connect America Fund programs, where they had a 10 megabit down, 1 megabit up, that 1 doesn't do you much, especially if you are trying to do—well, it won't do a video conversation very well at all. So that productivity piece of the upload speed, 1 is pretty inadequate.

Twenty-five/3 is what the FCC has more defined as broadband, and that is better. I would argue that you need 5 to 10 up when you get into the business world. I would think you would have to have that. Again, that is my opinion, right? I think you have to have that kind of speed, or better. And if you are dealing with very large files, CAD files, things like that, then upload speed even has to go a little bit more.

MR. HAGEDORN. Okay. I bring this up to take a little bit of a sidestep issue, and that is in the area of telemedicine. I am somebody who supports the concept, for instance, that our veterans should be able to choose their own doctors and hospitals, that our veterans should have the choice of the VA system, if that works, but if they fall through the cracks, let them go find their own doctors and hospitals.

But particularly in the area of mental health, when we have so many veterans, unfortunately, committing suicide, we have backlogs at the VA, getting mental health services, it seems like this telemedicine concept would really be helpful there, especially if they could see somebody face to face, talk to a mental health provider, and do that almost instantaneously where the government would back that up. A lot of our veterans live in rural areas, and they don't have access to these types of things now.

So don't you think that would be beneficial, the concept? I am not going to have you support my policy, but the concept of that.

MR. CARLSON. I live in the City of Cambridge. I live a block-and-a-half from the hospital. If I need to make an appointment—if I have any issue that comes up, I need to make an appointment. So I call the medical center, I make an appointment. That way, now I can do it online. But I need to go physically to that location only a block-and-a-half away, when oftentimes through technology I could get some kind of response, whether it is through video conferencing or whatever the case might be.

We have 900 personnel employed at our local medical center. But if you need service, you have to go there. The further you are out into the rural parts of the county, the further you have to travel, and the more work it takes to get there. So whether you are a veteran or anybody else that needs any services, you go to that location.

I think that through telehealth, the opportunity is there to really turn that over. You talked about how it has flipped in education, and I think this is the same kind of thing. We need to flip that paradigm so that services are made available to people where they are at, versus having to come to this place, which honestly is not open 24 hours a day other than maybe the emergency room, and that is going to be more costly. So oftentimes I think there is opportunity to save a lot of dollars, too.

Mr. HAGEDORN. In this case you might have access 24 hours a day. You could have people sitting on the other side of a computer or phone or whatever to do these things.

I would just like to thank the witnesses for your testimony, everyone for being here, for holding the hearing. I see good friends like Senator Koran here, and I think we from Minnesota are prepared to work with our governor, our state legislature, in order to help this in any way possible.

My parting statement is that rural America has been overlooked for far too long, and we are working real hard to turn that around, and I am pleased to work with my colleagues on a bipartisan basis to make that happen. Thank you very much.

Chairman GOLDEN. I want to thank you all once again. I think this has been a pretty productive conversation overall. We take a lot of notes, and really I think a big part of the job is getting out into your communities and listening, bringing the feedback back home, back down to Washington I should say.

In case you can't tell, I am a little bit obsessed with this idea of the FCC mapping of this issue and how it really doesn't get it. It drives me insane. Even when we talk about 25 down, 3 up, you have this drilled into my head now, what I hear a lot of people talk about, and I am sure that this is the case in this community as well, is yeah, sure, we have that, we have 25 down, 3 up, if you want to wait until 11:00 p.m. at night or something along those lines, right? But then once everyone in the community figures that out, all of a sudden that is a problem too.

That is just not good for business right there. You don't want to have to be coming into the shop at 11:00 p.m. at night. You need it when you need it.

A big part of you all to understand, I think these days members of Congress are always encouraged to try and do the thing that gets the headlines, and that is usually introducing legislation, passing bills, getting press. But a good boss of mine, Senator Susan Collins from Maine, who I worked for years ago, taught me that a big part of the job is oversight. It is not as attractive and exciting, but that is where the real work gets done. If you all have ever seen that picture of an iceberg, just the tip of it, and then underneath it is just this massive thing, I think that is really what the job is.

So I know that we are all going to—I think actually you may have signed a letter as well, sir, and Angie Craig, the Small Busi-

ness Committee to the FCC to keep pushing them to get more accurate mapping. It is probably unrealistic to expect that bureaucracy to be able to get into every community to do it themselves, so maybe there is some solution at the local level where we do the mapping and pass it on to them. But it has a big impact, I think, on our ability to get broadband out into rural communities.

But just very quickly in closing I would say I think we have come upon a time where we see the current trend is people flowing into more urban areas, and every now and then I think, whether it is electricity or now broadband, there is a technology gap that develops that will push that kind of a trend. But if all things were equal, rural America offers a better standard of living in the opinion of a lot of folks, and when we equalize things then it will correct itself and all of a sudden we will see people flowing or wanting to flow back out into rural areas, and I suppose the question is do we want to? Just kidding. We always welcome new people.

So thank you for welcoming me here to your community for this hearing. If you want to have a closing statement, we are doing it a little different. Normally we would just say, all right, we are done, and we will submit closing statements for the record. But I am in your community, and if you want to wrap it up, then I will leave it to you, sir.

Mr. STAUBER. Thank you, Mr. Chair. Before you gavel us down, I would like to make a closing statement.

To the witnesses, thank you for being here and sharing your expertise. It helps us make decisions. For me, making sure, as Congressman Hagedorn talked about, making sure that rural America matters. You talk about the rural schools, they matter. Your businesses matter.

I have been pushing not only the Transportation and Infrastructure Committee but the Small Business Committee to make sure that living in rural America has a great upside. You talk about the standard of living, we need to make sure that those little footsteps that you heard a couple of minutes ago, those children with sandals, that if they want to stay right here in this community, they can stay here and live, work, play, recreate, raise a family in rural America, rural Minnesota.

So this whole conversation we are having today is extremely important, that we can bring it back to the other committee members.

I will say this, that the elephant in the room is, of course, the money, right? But I want to end with this: At some point in this nation's history, our government decided that everybody would receive United States mail. At some point, every mailbox mattered. Think about that. Think about that for a minute.

We have to make the investment. We have to make the investment, and is it going to be to the price point that we can attain? The answer is yes. When we put our minds together in the Federal Government and local, make it local, we can do a lot of great things. As Senator Koran told me—we spoke about it before the meeting—we can work to make this investment. I want the states and the local communities to have the input. I don't want the input and the forcing from Washington. I want to make sure that we in the Small Business Committee and the Subcommittee work to invest, put forth that money, and the experts in the field can deploy

it. The experts in the legislative process in St. Paul can make the difference.

With that, thank you again to the witnesses. Thank you to the audience members. We so much appreciate you being here. Congressman Hagedorn, thanks for your time. Chairman Golden, I really appreciate you coming to the great state of Minnesota, and I yield back.

Chairman GOLDEN. Thank you very much.

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

Without objection, so ordered.

There being no further business to come before the Committee, we are adjourned.

Thank you very much.

VOICE. Can I just make a statement?

Chairman GOLDEN. Sure, why not?

VOICE. [Inaudible.]

Chairman GOLDEN. Thank you. Well said.

[Applause.]

Chairman GOLDEN. Thank you, everyone. I appreciate your attendance.

[Whereupon, at 11:31 a.m., the Subcommittee was adjourned.]

APPENDIX

Adam Artz Outline

Effects on Family; Daughters in School in North Branch
Can't upload easily
Slow speeds that drops info
Cuts off from net

Just makes process hard and frustrating and a source of stress

Impacts business; Owner of Real Estate Brokerage, offices in Blaine & North Branch

In business over 20 years

First question used to be Schools now it's "What type of Internet is available ?"

Can't upload Pics to the MLS from my home office that's within city limits

The Majority of all Paperwork is sent, signed and stored electronically and that's next to impossible with current internet at my home.

Almost always have to go into office to do anything more than a very basic service.

If 2 identical homes available which would you choose. Makes communities with better internet more desirable/valuable.

Summery.

Good internet is no longer a luxury

Top notch internet is a foundation of future growth

Mars

Mr. Marc Johnson
Executive Director
East Central Minnesota Educational Cable Cooperative (ECMECC)
Braham, MN

May 30, 2019

Chair Golden, Rep. Stauber, members, staff, guests:

Small businesses are the lifeblood of communities and rural areas in East Central MN, throughout the state and around the nation. Agriculture, tourism, hospitality, manufacturing, healthcare, retail and other sectors rely on the Internet to communicate with suppliers and customers, to provide their services and to stay viable. These businesses also need an educated workforce willing to live and raise families in rural areas.

Without access to affordable high speed Internet, businesses cannot thrive, families are less likely to locate in the area and it is difficult to provide a fair and equitable education. Those of us who commit to life in a rural community are forced to get by and make due with what we have.

Northland Automation and Engineering is an engineering and manufacturing company located in rural Kanabec County just a few miles from Mora, MN. The business is located on the farm of the company owner. If he or one of his employees wants to utilize simple video conferencing to talk with a client about custom parts and show them examples, they often must make a 30 minute round-trip into town to utilize an available location with high speed access capable of providing a stable video connection. He gets by, but comments about the limitations his company has for expansion and taking on additional clients when he is hampered by poor broadband access.

There are many stories available similar to this one and real estate agents in the area can verify that people will decide not to relocate to areas with poor broadband service. If we want a diverse workforce, strong communities and ample opportunities for everyone to reach their potential, we must move beyond just getting by.

How does education fit into this scenario? We live in a digital world and education is no different. The Internet is routinely used for research, collaboration, communication and general learning. We also know that learning does not take place only within the walls of a school building.

In education, we cannot just "get by." It is not OK for us to leave 20% or more of our students without the same learning opportunities as the other 80%. In the world of digital learning, that is exactly what is happening. In referencing one of the maps included in the packet, according to statistics from the MN Office of Broadband Development, 8 of the 12 school districts in the Region 7E economic development area are below 80% for percentage of households served by broadband speeds that fit the FCC definition of broadband and two are below 50% served.

Essentially, in these areas, we are leaving 20% to 50% of our residents behind. Many of which have children, some of whom are trying to run a farm or a small business from home and others who may be accessing online courses or completing assignments from higher education institutions. The technical and community colleges in our region have high numbers of working adult students who are not able to be on campus to complete assignments and/or who need to access online course content. These students are vital to development of our local workforce.

Most of the districts in our region have placed mobile devices in the hands of their students intended to be used both in class and at home and they are often cited as one of the most impactful technology related tools for teaching and learning. For example,

Troy Anderson, Principal at Pine City HS says, "Without a doubt, chromebooks have been the most impactful for our district. They have started to replace textbooks and are used for communication between students and staff."

Dr. Ray Queener, Superintendent for Cambridge-Isanti school adds - "As curriculum continues to migrate to digital and as more and more resources are available digitally, our chromebook 1:1 initiative has greatly impacted teaching and learning in our district."

Minnesota has a grassroots project called the Minnesota Partnership for Collaborative Curriculum. I'm proud to say that the schools in ECMECC were pioneering members of this collaborative that has grown to involve over 225 school districts. The goal of this project is to create a comprehensive collection of digital open education resources in the four core subject areas for grades 3-12. These resources are created by educators and centered around Minnesota's content standards and made available to Minnesota schools at no cost. They are designed to be used with the mobile devices that students are using and have the potential to replace the use of expensive textbooks and purchased content.

However, in our region, expensive and slow broadband hampers our ability to fully utilize these resources that our teachers helped create.

Dean Kapsner, Superintendent of Isle schools comments on this saying, "The lack of reliable Internet access affects how we can deliver curriculum and assignments outside the school day and has stalled our efforts to create a viable e-learning plan."

Steve Bistrup, Technology Coordinator in Milaca agrees, writing, "The lack of rural broadband has played a significant role in limiting our ability to fully transition to digital learning."

As with small businesses trying to thrive in this environment, schools find ways to make due. Long route busses in some of our districts are equipped with onboard wifi. Schools have purchased mobile hotspots to provide to students without adequate home access. But these solutions only work in areas where there is a reliable cellular connection, which cannot be assumed in many rural parts of our area. Other accommodations include keeping areas of the school open longer, providing printed or other offline materials, extending deadlines to turn in

homework and placing students in study halls rather than other classes. All of these accommodations result in some students not receiving the same, or in some cases even similar educational opportunities.

The Minnesota legislature passed a law in 2017 that allowed schools to use e-learning days in lieu of weather related school closings. To count as an instructional day, students need to be able to access assignments and resources online and teachers need to be available online to answer questions. This winter, some Minnesota districts utilized more than five of these days. In our region, no schools were able to take advantage of this opportunity because they could not count on all students or staff having adequate Internet access.

Superintendent Robert Prater of Hinckley-Finlayson schools indicated that - "We do not use e-learning days because broadband is not reliable enough or widespread enough for us to use e-learning."

Amanda Thompson, Technology Integration Specialist at East Central schools agrees saying, "I have concerns about both students and staff being able to access the Internet from home to fully engage in an e-learning day."

Our students and families are being left behind in the digital age. Craig Schultz, Superintendent of schools in Mora asks, "Is it truly a free and appropriate education when there are significant broadband access issues between families just miles apart in a district let alone between districts around the state?" We need to solve this issue or families will move away from rural areas with poor access and inequitable educational opportunities. There will be fewer people to fill jobs in the small businesses that have tried to get by and our rural communities and way of life will wither away. Like rural electrification and telephone did for rural areas in their times, we need rural broadband to make rural living viable and a choice that people want to seek out rather than flee.

Supplemental Information

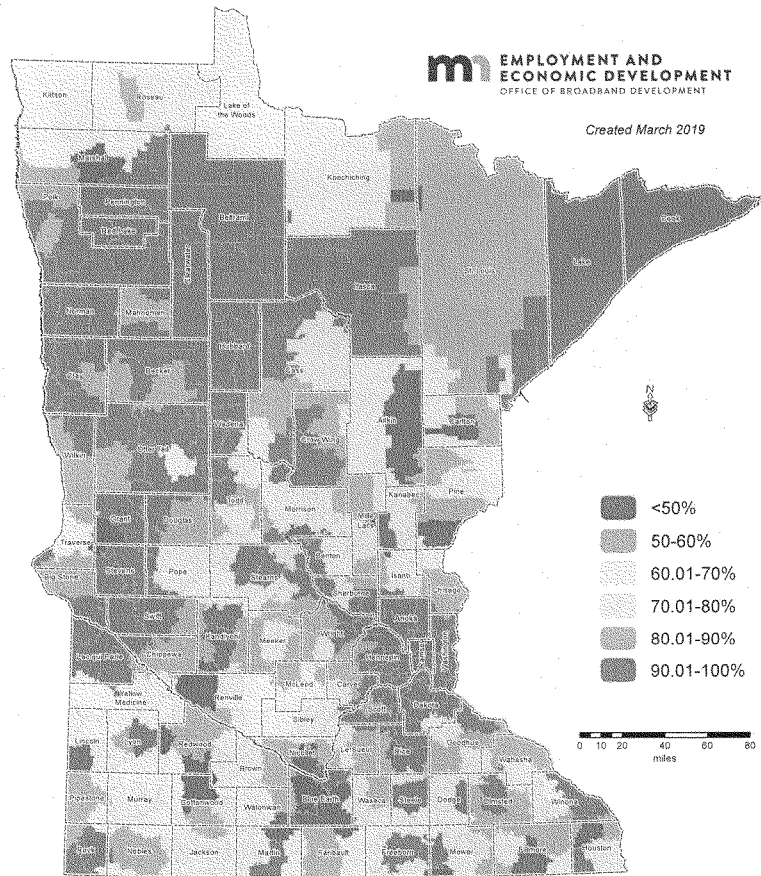
The two attached maps are provided by the Minnesota Office of Broadband Development and the Minnesota Department of Employment and Economic Development. The Region 7E economic development region includes the counties of Mille Lacs, Kanabec, Pine, Isanti and Chisago which you will see in the center, right portion of the maps. These counties remain as some of the most underserved regions in the State of Minnesota with respect to broadband service that meets the FCC definition of broadband. (speeds of 25 Mbps download and 3 Mbps upload)

The first map shows the percentage of households served by wireline broadband service that meets FCC definitions by county and the second map overlays Minnesota school district boundaries and breaks down the number of households served according to school district.

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2019 Broadband Availability in the State of Minnesota

Percentage of Households Served by Wireline
Broadband Service by School District
At Least 25 Mbps Download/3 Mbps Upload Speeds
Statewide Availability: 92.70%, Rural: 83.71%



This map was prepared by Connected Nation under contract with the Minnesota Department of Employment and Economic Development. The map represents areas of broadband service availability based on provider data submitted to and analyzed by Connected Nation and modified based on validation tools. This data is current as of December 31, 2018.

Additional maps and data are available at
<http://mn.gov/deed/programs-services/broadband/maps>

Upon request, this information can be made available in alternate formats for people with disabilities by contacting the DEED Office of Broadband Development at 651-259-7610.

Submit questions or recommended changes to:
DEED.broadband@state.mn.us

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Statement of Greg Carlson
Isanti County Broadband Task Force
for
Congressman Pete Stauber
and
Congressman Jared Golden

Small Business and Their Limitations without
Reliable Access to Rural Broadband
May 30, 2019

On behalf of the Isanti County Broadband Task Force, Cambridge Medical Center, Presbyterian Homes & Services, other health care organizations, and our clinician partners including _____ physicians, _____ nurses and other caregivers, we appreciate the opportunity to provide comments on the benefits of broadband, especially increasing access in rural areas.

BACKGROUND

The lack of adequate broadband has become a crisis in rural areas. Routine activities of both residents and business now often require Internet access. Work from home and business from home activities are increasing as are technology-based health care making business class broadband availability in rural neighborhoods an economic development and safety issue.

The Minnesota Broadband Task Force (charged with developing, implementing and promoting state policy, planning and initiatives to achieve state broadband needs and goals) established minimum speed standards. By 2022, the minimum download speed in the state should be 25Mbps (down)/3Mbps (up) and by 2026, all Minnesota homes and businesses should have access to at least one provider of 100Mbps (down)/20Mbps (up) service. **The upload speed is typically the measure of greatest interest to health care, because they are frequently involved in uploading large files. An upload speed of 5 Mbps is considered the minimum for effective health care communication.**

In response to these and other concerns, the Isanti County Economic Development Authority (EDA) established a Broadband Task Force to learn more about broadband access in Isanti County and identify possible solutions. The first meeting was held in November of 2016.

Membership varied during the period 2016-2019. Members consistent throughout were: Commissioners Greg Anderson and Terry Turnquist, County Administrator Kevin VanHooser, EDA consultant Janna King, and Marc Johnson, executive director of the East Central Minnesota Educational Cable Cooperative. Others who participated on a regular basis, but not for the entire period 2016-2019 include: Bill Coleman, with Community Technology Advisors (Blandin Foundation Resource); Greg

Carlson, Presbyterian Homes & Services; Gary Shaw, Cambridge Medical Center (Allina); Jay Manke, Mary Lodin and Ryan Hagfors with Genesis Wireless; Dave Williams, owner of Rev Net Data; and Travis Martilla, who is responsible for information technology at Isanti County.

In the spring of 2017 the County issued a Request for Proposals and in April 2017, the County Board approved a contract with Design Nine, a broadband planning firm. Their research focused on the quality of service throughout the county, including business and industrial parks. In addition, resident and business survey's, mapping, and analysis provided a better understand what type of technology would best serve the county:

- A wireless system with a series of towers, or
- A "fiber-to-the-premises" system, or
- A system with a combination of fiber-to-the-premises and wireless.

Though wireless may provide improvement in speed in the short term, it's unlikely to enable the county to achieve the broadband speed goal of 100/20 by 2026. In addition, interviews with healthcare providers revealed a concern for infrastructure sufficient to support emerging technology, particularly in underserved rural areas of the county. Healthcare professionals expect more services to become available on-line to reduce costs and improve patient outcomes, including monitoring the health and safety of elderly and others recently released from the hospital; providing services to people in their homes as long as possible can save money for families and other payers.

Approximately 40,000 people live in Isanti County, nearly 60% reside outside the city limits of the three communities of Braham (1,789), Cambridge (8,803) and Isanti (5,721), and most have less than adequate access to broadband services. Lack of access makes it difficult for rural residents to get preventive health care services, leaving them susceptible to fragmented, episodic care and poorer health outcomes.

BROADBAND-ENABLED TELEHEALTH SERVICES IMPROVE HEALTH OUTCOMES FOR UNDERSERVED RURAL AREAS

Access to reliable and affordable broadband is essential to the delivery of modern health care. Electronic health records, technology-based patient engagement strategies, health information sharing for coordinated care, and remote-monitoring technologies all require high-bandwidth broadband connections. Such telehealth technologies can help overcome many of the obstacles to health care delivery that particularly confront rural communities. **Telehealth offers enormous potential to improve access to certain services and improve patient outcomes through use of new technologies, such as remote patient monitoring (RPM) and access to specialty services, including mental health and addiction services.**

Telehealth is much more than virtual health visits; the term also encompasses remote patient monitoring connecting patients to vital health care services through videoconferencing, activity and daily living monitoring, medication management, electronic consults, wireless communications and safety technology. Electronic health records enable efficient exchange of patient and treatment

information by allowing providers to access digital copies of patients' information, improving the continuity of care and reducing redundancies in treatment. Remote patient monitoring uses electronic communication to collect and transmit personal and medical data to remote health care providers, allowing providers to monitor a patient's health in real time after the patient has left the medical center.

Many older adults report feeling lonely or isolated, healthcare providers work collaboratively to incorporate social connectedness into programs for these patients. If patients are not socially connected, they will not age optimally. New and innovative mobile health applications enable better patient-provider communications, encourage better patient self-management and health literacy, and promote positive changes in health and lifestyle. Telemedicine and mHealth (mobile health) are rapidly emerging as cost-effective solutions to overcoming many of the obstacles to health care delivery faced in rural communities.

The proper infrastructure must be in place to allow for these and other technologies to be implemented in the home. However, residents in rural areas often do not have the financial means to have broadband service, which these technologies rely on.

CAMBRIDGE MEDICAL CENTER and the PROVIDER COMMUNITY

Models of care that help the transition from the hospital to the home are important, and the key team member might be a healthcare professional other than a doctor. Technologies are key enablers of strategic partnerships between long term care settings and the medical center and help to carry out integrated and person-centered care and services that support the health and wellness of patients across the continuum. With such connectivity, a broad array of services are available to support health and wellness, reduce loneliness and isolation, increase quality of life and, ultimately, enhance independence among older adults living independently.

For the Cambridge Medical Center, this involves leveraging technology for the patient facing experience and interaction with the provider community. The objective of current planning is to enhance the patients online experience by expanding the reach of telehealth and mHealth (mobile health) technology with improved access to

- online scheduling,
- video visits,
- medical messaging with patients,
- Urgent Care and Emergency Department wait times,
- online video education,
- MyAccount/MyChart (Patients online Health Account),
- applications on phones or pc's which all essentially require high speed internet.

CONCLUSION

The health care field is quickly moving from fee-for-service to a value-based delivery system. Success in new payment models, such as bundling, accountable care organizations and new physician payment models will require flexibility to deploy telehealth, particularly as part of care management programs.

Ensuring communities in rural areas can take full advantage of the benefits of telehealth solutions requires access to reliable and affordable broadband connections. Telehealth is changing health care delivery. Through videoconferencing, remote monitoring, electronic consultations and wireless communications, telehealth expands patient access to care while improving patient outcomes and satisfaction. Telehealth offers a wide-range of benefits, such as immediate access to care, less expensive and more convenient care options and improved care outcomes. The Isanti County Broadband Task Force and area health care providers appreciate the focus on the importance of expanding broadband connectivity and grateful for the opportunity to share our rural perspective.

END OF STATEMENT

“Small Businesses and Their Limitations Without Reliable Access to Rural Broadband.”

Testimony of Mr. Matt Crescenzo

May 30, 2019

Hello Friends and Neighbors my name is Matthew Crescenzo. I am a 44 year old father of 3 young girls and a husband to my wife Krista. Krista is a nurse at Gillete Childrens hospital located in St. Paul Minnesota and works in the child brain injury rehab unit. I work in this building designing automated machines like our Star Lab CNC plasma machine. I also train folks at schools, businesses, garages. I have trained well over 700 times across the USA and have been fortunate to train deaf and quadrapalegic customers...who are some of the sharpest minds you will find. The place you are sitting at or standing on was only possible through use of the internet. A unique gift of communication between people. We would be having this great meeting near and in an 100 year old barn ready to collapse...now wouldnt that be exciting. When I suffered a spinal cord injury on the job my world became small. Frustration and desperation were my weighing heavily on my heart. I pooled resources and stretched my minds capability beyond my expected pesonal limits. With the help of my good friend David Boucher who currently works for Toro company and who set up a website for me, I was able to take my ideas and machine products, bringing them to the internet and discover a vast amount of interest in these parts that I dreamed and engineered. I was able to take my passions to market. It was the internet that allowed all this to exist out of the idea of offering something awesome for a good price. I could not have done it without the internet and without my Father Peter Reed Crescenzo who challenged and supported me ...sometimes challenged more than supported. But that is often a Fathers burden...I love and respect my Father. Where we are sitting today I could not have imagined years ago. We have seemingly unlimited potential for growth here. I have sacrificed my wage to build this business for years and years. We are ready to take the next steps and I am ready to take a pay check. Ha. We fumble through our day using the local internet. It is as important now as it was when I started this business. We even have a dedicated line of 10 megs up and 10 megs down which wouldnt get you a hotdog in the twin cities and it runs us \$277 a month. We deal with dropped calls when using internet to rebooting our modem several times a day. I thought I was alone. For years we were rebooting our modem in the house in the shop. It wasnt until my friends and neighbors told me they do the same thing. Our business relies on customer experience not volume but the network of very happy customers to keep us busy and boy are we busy. It is crucial to our success that we can upload training videos, download customer files and talk on the phone without interruption. The infrastructure is toast out here. The technology has moved beyond our rural areas 20 years ago. I have seen businesses close because they cannot have a robust security system tied to the internet or really cannot develop without access to high speed internet, businesses moving out of state not only because of local ordinances but because of the vast desert of little to no speed internet we have here. Friends and neighbors we need real help for our community to prosper. I commend these folks before us for shining a bright light on our dimly lit network. Communication between people is what makes good communities and binds the heart of mankind. The invention of the internet was brilliant.... and I believe... inevitable. However without bolstering our community and supporting ideas like

this we remaining in a dark age. The industrial revolution is not over... it has changed. In many ways it has gotten cleaner, better and smarter.

