LEGISLATING TO CONNECT AMERICA: IMPROVING THE NATION'S BROADBAND MAPS

HEARING

BEFORE THE

SUBCOMMITTEE ON COMMUNICATIONS AND
TECHNOLOGY

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COMMERCE
HOUSE OF REPRESENTATIVES

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(III)

C O N T E N T S

[1] Mr. Stegeman's prepared statement and additional material submitted for the record have
been retained in committee files and also are available at https://docs.house.gov/Committee/
Calendar/ByEvent.aspx?EventID=109914.

LEGISLATING TO CONNECT AMERICA: IMPROVING THE NATION'S BROADBAND MAPS

WEDNESDAY, SEPTEMBER 11, 2019

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMUNICATIONS AND TECHNOLOGY,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:29 a.m., in room 2322 Rayburn House Office Building, Hon. Mike Doyle (chairman of the subcommittee) presiding.

Members present: Representatives Doyle, McNerney, Clarke, Loebsack, Veasey, Soto, O'Halleran, Eshoo, Butterfield, Matsui, Welch, Luján, Schrader, Cárdenas, Dingell, Pallone (ex officio), Latta (subcommittee ranking member), Olson, Kinzinger, Bilirakis, Johnson, Long, Flores, Brooks, Walberg, Gianforte, and Walden (ex officio).

Also present: Representatives Rodgers and Griffith.

Staff present: AJ Brown, Counsel; Jeffrey C. Carroll, Staff Director; Evan Gilbert, Deputy Press Secretary; Waverly Gordon, Deputy Chief Counsel; Alex Hoehn-Saric, Chief Counsel, Communications and Consumer Protection; Jerry Leverich, Senior Counsel; Dan Miller, Policy Analyst; Phil Murphy, Policy Coordinator; Joe Orlando, Staff Assistant; Alivia Roberts, Press Assistant; Tim Robinson, Chief Counsel; Adam Buckalew, Minority Director of Coalitions and Deputy Chief Counsel, Health; Michael Engel, Minority Detailee, Communications and Technology; Margaret Tucker Fogarty, Minority Staff Assistant; Theresa Gambo, Minority Financial and Office Administrator; Peter Kielty, Minority General Counsel; Bijan Koohmaraie, Minority Counsel, Consumer Protection and Commerce; Tim Kurth, Minority Deputy Chief Counsel, Communications and Technology; Brannon Rains, Minority Legislative Clerk; Evan Viau, Minority Professional Staff Member, Communications and Technology; and Nate Wilkins, Minority Fellow, Communications and Technology.

Mr. DOYLE. The Subcommittee on Communications and Technology will now come to order. The Chair now recognizes himself for 5 minutes for an opening statement.

OPENING STATEMENT OF HON. MIKE DOYLE, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Before we get started, I just want to take a moment to remember the lives lost 18 years ago on September 11th. Many of us on the committee were there when this happened. I remember having

breakfast in the Capitol when the first plane hit the tower, which I didn't know at the time. And when I got back to my office and saw my staff all watching the television sets is when the second plane hit, and we just knew something terrible had happened.

And it seems like it couldn't have been 18 years ago, but it was, and I just think we want to remember all the sacrifices that got made by our police and firemen, all our first responders that ran towards that building. Many of them aren't with us today from illnesses that they contracted being down there at that site.

And also remember that evening that we all stood on the steps of the Capitol, Democrats and Republicans locking arms and singing "God Bless America," I remember that very vividly too. We probably could use a little bit more of that these days in this country, of coming together as Americans. But I just ask that may we just take a brief couple seconds for a moment of silence just to reflect on 9/11, 18 years ago, and all the people that passed.

[Moment of silence.]

Mr. DOYLE. Thank you. Well, I want to welcome everyone to our first hearing since our August recess. Today, our hearing is focusing on Legislating to Connect America: Improving our Nation's Broadband Maps. This subcommittee will consider five pieces of legislation that I believe can help address serious problems with the way the FCC currently collects broadband deployment data.

This is an often-discussed topic here in Congress, and the lack of clear data has often been a sore spot for many of here on the committee. However, the FCC in coordination with industry stakeholders has been making significant strides to improve the quality of some of these maps, and the bills before the committee today build on those efforts.

Accurate maps of who does and who doesn't have access to broadband are a critical first step in closing the digital divide. We can't hope to solve this problem if we don't know the scope of the problem and where to put our resources.

First, we have H.R. 4229, the Broadband Deployment Accuracy and Technological Availability Act, introduced by Representative Loebsack and Ranking Member Latta. This bill would dramatically improve the FCC broadband maps by requiring the FCC to collect and disseminate far more granular broadband data for both fixed and mobile services. The bill would also allow the FCC to use crowdsource data to help verify and supplement carrier-provided data.

Second, we have H.R. 4128, the Map Improvement Act of 2019, introduced by Representatives Luján, Bilirakis, and myself. It would standardize the methodology used for collecting and verifying coverage data provided by providers. It would also establish a new office within the FCC to serve as a central coordinator for the Commission's mapping efforts.

Third, we have H.R. 4227, the Mapping Accuracy Promotion Services Act, introduced by Representatives McEachin, Long, Loebsack, and Latta. This bill would make it unlawful for a person to submit inaccurate broadband coverage data to the FCC.

Fourth, we have H.R. 2643, the Broadband Mapping After Public Scrutiny Act of 2019, which has been introduced by Ranking Member Latta and my good friend Mr. Welch. This bill would create a

challenge process at the FCC for fixed and mobile broadband coverage data and allow private entities as well as State, local, and Tribal government entities to verify coverage data submitted to the FCC.

And, finally, we will consider H.R. 3162, the Broadband Data Improvement Act of 2019, introduced by Representative McMorris Rodgers and Representative O'Halleran. This bill would update the FCC's mapping process, establish a public challenge process and require Federal agencies to use the newly created broadband maps to determine the extent and the availability of broadband in the United States.

I look forward to the testimony of our witnesses and the discussion about this important legislation.

[The prepared statement of Mr. Doyle follows:]

PREPARED STATEMENT OF HON. MIKE DOYLE

Good morning.

Before we get started, I'd like to take a moment to remember the lives lost 18 years ago on September 11th, and the extraordinary sacrifices made by the police, firefighters, and EMS techs who responded to those horrific attacks as well as those who have fought to keep us safe and keep fighting for our country every day. We owe all of them a tremendous debt.

With that, I'd like to welcome everyone to our first hearing since the August recess. Today's legislative hearing is titled "Legislating to Connect America: Improving the Nation's Broadband Maps."

The subcommittee will consider 5 pieces of legislation that I believe can help address serious problems with the way the Federal Communications Commission currently collects broadband deployment data.

This is an often-discussed topic here in Congress, and the lack of clear data has often been a sore spot for many of us on the committee. However, the FCC in coordination with industry stakeholders has been making significant strides to improve the quality of some of these maps, and the bills before the committee today build on those efforts.

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I look forward to the testimony of our witnesses and the discussion about these important bills.

I yield the balance of my time to Congressman Loebsack.

Mr. DOYLE. And at this time, I would like to yield the balance of my time to Congressman Loebsack.

Mr. LOEBSACK. Thank you, Chairman Doyle and Chairman Pallone, Ranking Members Walden and Latta, for holding this legislative hearing today. And thank you, Chairman Doyle, for giving me some of your time.

There is a lot of great stuff in the Broadband Development Accuracy and Technological Availability Act or Broadband DATA Act and we will be discussing that shortly. But I would first like to extend an extra special thanks to Ranking Member Latta for working with me to introduce the Broadband DATA Act. I have long been an advocate for better maps and the needs of rural America, and I don't know that I could have had a better ally, quite honestly, than my friend from Ohio. Further, I thank Ranking Member Latta for agreeing to continue working with me on this bill as we look forward to an eventual subcommittee markup. Hopefully that will happen sooner rather than later.

We have had some great conversations with stakeholders, many of whom are represented on the panel today or in the audience, and I believe there is still some potential for some improvements between now and the markup. And just quickly, some of the things that we might continue to work on: creating additional clarity that this bill will keep data publicly available; looking at the addition of an authorization of funding; studying the use of USF funds for administrative costs; exploring a GAO study or ongoing review process for what source of information are informing the fabric; and considering how we ensure we are not burdening small businesses.

I am very proud of the bill that Representative Latta and I introduced and we will be talking about today and I think we have a bill that is ready for markup and passage on the House floor, but there might be some room for improvement and I am willing to work with Congressman Latta going forward. And with that I yield back my time.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes my friend Mr. Latta, the ranking member of the subcommittee, for 5 minutes.

OPENING STATEMENT OF HON. ROBERT E. LATTA, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. LATTA. Well, thank you, Mr. Chairman. If I could offer before my time begins, I would like to thank you for your very sincere words on remembering 9/11. I think everyone in this room can remember where they were that day and the very impact it has had on this Nation. And I totally agree with you that, you know, the country came together that day. I was in the Ohio legislature at the time, but I appreciate your words, and we have to always remember what happened on that day. So thank you.

I would like to welcome you to today's committee legislative hearing on potential solutions to accurately map broadband availability in rural America. I thank our witnesses for joining us and providing their thoughts on this issue. Extending the reach of broadband in rural Ohio and across America is critical to ensure everyone can participate in the digital economy.

Since passage of the 1996 Telecommunications Act, the private sector has invested roughly $1.7 trillion in their broadband networks. We should acknowledge this investment in rural deployment; ensure that government-supported solutions complement private capital instead of competing with it. This is becoming increasingly important with some proposals calling for as much as 150 billion in government funding to publicly own and operate networks nationwide.

Today's legislative hearing features several bills introduced by committee members who deeply understand the lack of connectivity across their districts. Our constituents tell us when they don't have service and it is through their voices that I have heard and work with my colleagues on two of the bipartisan bills that will be discussed today.

The Broadband MAPS Act, which I introduced with my very good friend, the gentleman from Vermont, would help to verify reported data through a public challenge process. And the Broadband DATA Act, which I have developed with my good friend, very good friend, the gentleman from Iowa, would take a comprehensive approach to fixing our Nation's maps. I believe that these bills will help build on the success of our previous partnership to deploy broadband to rural farmlands through the Precision Agriculture Connectivity Act.

As we look to the FCC's next round of Universal Service Funding, it is vital that we work in a bipartisan manner to ensure that there is a verified, accurate, and granular foundation upon which we make these funding decisions. Congress has an important oversight role to play in ensuring that we do not repeat the mistakes of the past. With limited Federal dollars to go around, we simply cannot afford to misidentify areas as served which are truly unserved. Only with accurate and granular data will we begin to close the last frontier of the digital divide.

It is also critical that a robust, user-friendly challenge process is in place to appropriately dispute potential inaccuracies within the coverage maps. We must and have to get the maps right, and in creating a pathway for the FCC to consider additional broadband data will help achieve that goal.

As we move toward committee markups, I anticipate continuing discussions with my friends across the aisle on several outstanding issues such as striking the right balance between protecting competitive, sensitive information while providing transparency to consumers; ensuring that we can leverage data the best we can across the Federal Government and addressing the cost of the fabric and ongoing review of the fabric's reach and effectiveness; and, finally, examining unintended impacts of certain requirements on small businesses.

I thank the chairman for holding this hearing and I am committed to working with my colleagues on these issues through regular order.

[The prepared statement of Mr. Latta follows:]

PREPARED STATEMENT OF HON. ROBERT E. LATTA

Welcome to today's subcommittee legislative hearing on potential solutions to accurately map broadband availability in rural America. I thank our witnesses for

joining us and providing their thoughts on this issue. Extending the reach of broadband in rural Ohio, and across America, is critical to ensure everyone can participate in the digital economy.

Since passage of the 1996 Telecommunications Act, the private sector has invested roughly $1.7 trillion in their broadband networks. We should acknowledge this investment in rural deployment and ensure that government-supported solutions complement private capital instead of competing with it. This has become increasingly important with some proposals calling for as much as $150 billion in government funding to publicly own and operate networks nationwide.

Today's legislative hearing features several bills introduced by committee members who deeply understand the lack of connectivity across their districts. Our constituents tell us when they don't have service and it's through their voices that I've worked with my colleagues on two bipartisan bills that will be discussed today. The Broadband MAPS Act, which I introduced with Representative Welch, would help to verify reported data through a public challenge process. And, the Broadband DATA Act, which I've developed with Representative Loebsack, would take a comprehensive approach to fixing our Nation's maps. I'm hopeful that this bill will build on the success our of previous partnership to deploy broadband to rural farm lands through the Precision Agriculture Connectivity Act.

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It is also critical that a robust, user-friendly challenge process is in place to appropriately dispute potential inaccuracies within the coverage maps. We must get the maps right and creating a pathway for the Commission to consider additional broadband data will help achieve that goal. As we move toward committee markups, I anticipate continuing discussions with my friends across the aisle on several outstanding issues, such as:

• striking the right balance between protecting competitively sensitive information while providing transparency to consumers;

• ensuring we can leverage data the best we can across the Federal Government;
• addressing the cost of the fabric and the ongoing review of the fabric's reach and effectiveness; and,

• examining unintended impacts of certain requirements on small businesses.

I thank the chairman for holding this hearing, and I'm committed to working with my colleagues on these issues through regular order. I yield the remainder of my time to Mr. Long.

Mr. LATTA. And at this time, I would like to yield the rest of my time to my good friend, the gentleman from Missouri.

Mr. LONG. Thank you for yielding. And I would like to thank the witnesses for being here, and I am happy to see that the subcommittee is prioritizing the need to develop accurate broadband maps.

For rural communities such as Missouri's 7th congressional district, access to broadband is as scarce as hen's teeth. I think we can all agree that mapping and graphically displaying where broadband is and is not available at certain speeds is a critical tool in closing the digital divide. As we move forward, I believe it is important that the broadband mapping update be paired with appropriate enforcement measures to ensure that providers' submissions are complete and accurate, which is why I am working with my colleagues on H.R. 4227 and the MAPS Act.

In closing, I would like to thank Representative Dave Loebsack of Iowa; the telecom ranking member, Bob Latta; and Donald McEachin, Virginia, for their work on both the Broadband DATA Act and MAPS Act, and I am committed to working together toward the subcommittee markup and sticking the landing on this important topic. I yield back.

[The prepared statement of Mr. Long follows:]

PREPARED STATEMENT OF HON. BILLY LONG

I'd like to thank the witnesses for being here, and I'm happy to see the subcommittee is prioritizing the need to develop accurate broadband maps.

For rural communities, such as those in Missouri's 7th Congressional District, access to broadband is scarce. I think we can all agree that mapping—graphically displaying where broadband is and is not available at certain speeds—is a critical tool in closing the digital divide.

As we move forward, I believe it is important that any broadband mapping update be paired with appropriate enforcement measures to ensure that providers' submissions are complete and accurate—which is why I'm working with my colleagues on H.R. 4227, the MAPS Act.

In closing, I'd like to thank Representatives Dave Loebsack (D–IA), Bob Latta (R–OH), and Donald McEachin (D–VA) for their work on both theBroadband DATA Act and the MAPS Act and I am committed to working together towards a subcommittee markup.

Mr. LATTA. Mr. Chairman, I yield back the balance of my time.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Pallone, chairman of the full committee, for 5 minutes for his opening statement.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Chairman Doyle.

This year our committee is focused on improving telecommunications services for consumers. In July, the House overwhelmingly passed the bipartisan Stopping Bad Robocalls Act, and earlier this year the House passed legislation that restores a free and open internet by reinstating net neutrality. And now this subcommittee continues its work on a range of pro-consumer issues including broadband deployment, spectrum policy, supply chain security, and more.

Broadband mapping is a central component in each of these discussions. Without good maps we can't correctly determine how we should target funding for broadband access and adoption in rural and urban areas. Without good maps we don't have enough detail to assess competition or review mergers. And without good maps we don't have a proper view of whether the FCC is appropriately using its authority to benefit consumers.

It is not an exaggeration, in my opinion, to say this FCC's terrible broadband data is its Achilles Heel. And the statistics show just how bad this problem is. Free Press recently discovered that one carrier alone was overstating its deployment by 2.2 million consumers, throwing off the FCC's entire estimate of unserved Americans. And CostQuest discovered as part of its State pilot program that as many as 38 percent of households in the study area might be unserved, but the FCC may count them as served.

I think it is a huge problem. Fortunately, there is bipartisan agreement on this subcommittee that the FCC's bad maps need to be fixed. Last year, Representative Loebsack's Rural Wireless Access Act was signed into law which aimed at fixing the FCC's wireless data. Unfortunately, the FCC hasn't yet taken the action required by law due to the ongoing investigation into carriers inten-

tionally submitting bad data as part of the Mobility Fund II proceeding.

So it is clear that despite our past action more work needs to be done, and I thank the many Members who have worked hard to solve this problem.

[The prepared statement of Mr. Pallone follows:]

PREPARED STATEMENT OF HON. FRANK PALLONE, JR.

This year, our committee has focused on improving telecommunications services for consumers. In July, the House overwhelmingly passed the bipartisan Stopping Bad Robocalls Act, and earlier this year the House passed legislation that restores a free and open internet by reinstating net neutrality. And now this subcommittee continues its work on a range of pro-consumer issues including broadband deployment, spectrum policy, supply chain security, and more.

Broadband mapping is a central component in each of those discussions. Without good maps, we cannot correctly determine how we should target funding for broadband access and adoption in rural and urban areas. Without good maps, we don't have enough detail to assess competition or review mergers. And without good maps, we don't have a proper view of whether the Federal Communications Commission (FCC) is appropriately using its authority to benefit consumers.

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And the statistics show just how bad this problem is. Free Press recently discovered that one carrier alone was overstating its deployment by 2.2 million consumers, throwing off the FCC's entire estimate of unserved Americans.

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This is a huge problem. Fortunately, there is bipartisan agreement on this subcommittee that the FCC's bad maps need to be fixed. Last year, Representative Loebsack's Rural Wireless Access Act was signed into law, which aimed at fixing the FCC's wireless data. Unfortunately, the FCC hasn't yet taken the actions required by law due to the ongoing investigation into carriers intentionally submitting bad data as part of the Mobility Fund II proceeding.

It's clear that despite our past action more work needs to be done. I thank the many Members who have worked hard to solve this problem.

Mr. PALLONE. I have 3 minutes. I would like to yield, basically split it if I could, between Representative Luján and Representative O'Halleran. And I yield the minute and a half now to Representative Luján, Mr. Chair.

Mr. LUJÁN. Thank you to the chairman and to the ranking members. When it comes to broadband access, according to the FCC more than 21 million Americans lack access to high-speed, fixed broadband. We know that is because of no connectivity or unaffordability. And as the chairman pointed out, wireless maps are also not accurate. As a matter of fact, in my opinion, they are misleading. Because of the problems with how broadband data is collected and mapped, no one really knows what the number is. The problem most likely is significantly worse.

This is also a life and death issue. Ashlynne Mike was an 11-year-old Navajo girl who was kidnapped, raped, and murdered in 2016. When Ashlynne went missing, the AMBER Alert systems didn't work and there was no connectivity.

Mr. Chairman, we have to act. And I thank Chairman Doyle and Congressman Bilirakis for partnering with me on the Map Improvement Act, and I thank my colleagues for their related efforts, and I yield back.

Mr. PALLONE. I yield the rest of my time to Mr. O'Halleran.

Mr. O'HALLERAN. Thank you, Mr. Chairman. Today this committee takes an important step towards helping rural America connect to the internet. According to the FCC, only 40 percent of rural Arizona is currently connected in the home at FCC standard speeds. And even this data point likely overstates broadband coverage due to the census block reporting regime.

Working together, I know this committee can right this wrong. The legislation before us today including my and Representative Rodgers bipartisan bill, the Broadband Data Improvement Act, takes important steps to improve how the FCC and Federal agencies identify where broadband coverage exists and where it does not. Just last month, the FCC adopted concepts from this bill to move away from census block reporting and instead ask the internet providers to report shapefiles of their current coverage offerings.

There is still more work to be done, and I am pleased to see the bills before us today continue to move us towards making the National Broadband Map as accurate as possible. Mr. Chairman, I am excited to work in a bipartisan manner on this important issue and, collectively, I know we can achieve our mutual goal. And I yield.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Walden, ranking member of the full committee, for 5 minutes for his opening statement.

OPENING STATEMENT OF HON. GREG WALDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WALDEN. Well, good morning, Mr. Chairman, and thank you and thanks to all our witnesses for being here. Some familiar faces back at the table. We appreciate your guidance and counsel on these matters. I want to thank my colleague from California, Ms. Eshoo. We worked a lot on these issues going back over a number of years and thank you for your leadership. And we are still not there, but we are working at it.

It is obviously an issue that I have cared about a lot over the last couple of decades. And some of my friends will remember when the stimulus bill was being voted through this committee, I pled, begged, and even had an amendment to do the mapping before the money went out, and unfortunately we came up a few votes short on that. But maybe today we will begin this process because the money needs to go where it is needed and not overbilled and serve these markets that claim on the maps that are already served, but yet they aren't.

And so, while the incentives have expanded broadband access and made communicating and participating in a 21st century economy easier than ever before, much work remains to connect all Americans to high-speed internet broadband. I want to use an example, Weston, Oregon, which is in Eastern Oregon in my district. The mayor, Jennifer Spurgeon, describes their internet service as being dial-up, just without the modem noise, all right. And she told Chairman Pai that when he was out a year or so ago, and I thought it was a pretty good line.

They frequently experience, obviously, sub-megabit speeds. Sub-megabit. So you can imagine how surprised they were when the

FCC's map said they had 100-megabit service. And so they were a little surprised because, yes, it is dial-up without the modem noise.

As chairman of this committee, we worked in a bipartisan fashion last Congress, many of you will recall, to enact legislation to promote rural broadband and I am hopeful we can build on that same spirit of bipartisanship. We included provisions in the RAY BAUM'S Act to improve the methodology for the collection of mobile service coverage to streamline access to easements and rights-of-way and lease requests for deploying communications equipment on Federal property—just for the record, my district is over 50 percent Federal land, so trying to do anything out there can be very time-consuming, costly, and burdensome—and we wanted to improve efficiency of spectrum allocation.

So as we continue our oversight of RAY BAUM'S Act as well as our efforts to spur broadband deployment in rural America, we must also ensure the Universal Service Program is efficiently and effectively reaching truly unserved parts of America. So I applaud Chairman Pai for his leadership on this front, proposing a Rural Digital Opportunity Fund using cost-efficient reverse auctions to better allocate limited financial support from the Feds.

At the same time, we must ensure that the FCC is relying on accurate and sufficiently granular information when making these decisions. There are areas that we all know are unserved. That is pretty obvious, and then of course we know of the underserved areas.

But what we really need are really good maps that show us for sure. The Senate has already moved a consensus bill through their committee to address this issue, which I believe represents an interesting path. The legislation before us today rightly underscores the importance of this issue and the attention it has earned among members of the committee.

There are a number of issues with which Republicans are committed to working on with our counterparts, such as how we are going to provide funding, how to balance publicly available information, and how to improve data sources, and how we can best leverage the data to the greatest extent possible across the Federal Government. Other Members have also put forward bills to address rural broadband challenges, and these proposals deserve consideration as well and I expect we will hear about some of those other bills today.

So again, Mr. Chairman, thanks for your leadership on this. Thanks for holding this hearing today and we look forward to working in a good bipartisan spirit to connect America and to have maps that show the truth. We are all about facts and truth here, so let's get 'er done. Thank you. I yield back.

[The prepared statement of Mr. Walden follows:]

PREPARED STATEMENT OF HON. GREG WALDEN

Thank you, Mr. Chairman. I want to welcome our witnesses to this hearing on the importance of accurately mapping broadband availability in America.

This is an issue I've been working on for two decades. Many of you will remember that I advocated "mapping before money" for the Obama administration's stimulus act. Unfortunately, I was voted down along party lines, but my warnings and those of my Republican colleagues were borne out, and documented by news outlets, such as Politico in an article entitled "Wired to Fail."

While market incentives have expanded broadband access and made communicating and participating in the 21st century economy easier than ever before, much work remains to connect all Americans to high speed broadband. It's past time to get accurate mapping data.

Take the community of Weston in eastern Oregon as an example. Mayor Jennifer Spurgeon describes their internet service as being dialup, just without the modem noise. They frequently experience sub-megabit speeds. You can imagine they are surprised to learn they have 100-megabit service according to the FCC's map.

Under my chairmanship, this committee worked in a bipartisan fashion last Congress to enact legislation to promote rural broadband, and I'm hopeful we can continue to build on our past success.

We included provisions in RAY BAUM'S Act to improve the methodology for the collection of mobile service coverage; streamline access to easements, rights-of-way, and lease requests for deploying communications equipment on Federal property; and improve the efficiency of spectrum allocation.

As we continue our oversight of RAY BAUM'S Act as well as our efforts to spur broadband deployment in rural America, we must also ensure that the Universal Service program is efficiently and effectively reaching truly unserved areas. I applaud Chairman Pai for his leadership on this front, proposing a Rural Digital Opportunity Fund using cost-efficient reverse auctions to better allocate limited Federal support.

At the same time, we must ensure that the FCC is relying on accurate and sufficiently granular information when making these decisions. There are areas that we all know are unserved, and sufficiently precise data will help better reach these areas. Too often, the areas most in need of Federal broadband support get lost in the rush to dole out government funds, especially when program rules distort eligibility for some areas that are already adequately served. Without the best available data identifying parts of the country that need funds most the vicious cycle of leaving rural Americans behind will continue.

The Senate has already moved a consensus bill through their committee to address this issue, which I believe represents an interesting path. The legislation before us today rightly underscores the importance of this issue and the attention it has earned among members of the committee. There are a number of issues which Republicans are committed to working on with our counterparts—such as how we're going to provide funding, how to balance publicly available information, how to improve data sources, and how we can best leverage the data to the greatest extent possible across the Federal Government.

Other Members have also put forward bills to address rural broadband challenges, and these proposals deserve consideration as well. I expect we'll hear about some of those other bills today.

Thank you again for holding this hearing today, I hope we can continue working on a bipartisan basis through regular order to get the job done.

Mr. DOYLE. I thank the gentleman and he yields back.

The Chair would like remind Members that, pursuant to committee rules, all Members' written opening statements will be made part of the record.

I would now like to introduce our witnesses for today's hearing: Ms. Shirley Bloomfield, chief executive officer, NTCA–The Rural Broadband Association; Mr. James Assey, executive vice president, NCTA–The Internet and Television Association; Mr. Grant Spellmeyer, vice president, Federal Affairs and Public Policy, U.S. Cellular; Ms. Dana Floberg, policy manager, Free Press and Free Press Action; Mr. Jonathan Spalter, president and CEO of the USTelecom Association; and Mr. James Stegeman, president and CEO of CostQuest Associates.

We want to thank all of our witnesses for joining us today. We look forward to your testimony. At this time, the Chair will now recognize each witness for 5 minutes to provide their opening statement.

But before we begin, I would like to explain our lighting system. The light in front of you will initially be green at the start of your opening statement. It will turn yellow when you have 1 minute re-

maining, and please begin to wrap your testimony at that point. The light will turn red when your time expires.

And with that, Ms. Bloomfield, you are now recognized for 5 minutes.

STATEMENTS OF SHIRLEY BLOOMFIELD, CHIEF EXECUTIVE OFFICER, NTCA 09THE RURAL BROADBAND ASSOCIATION; JAMES M. ASSEY, EXECUTIVE VICE PRESIDENT, NCTA 09THE INTERNET AND TELEVISION ASSOCIATION; GRANT B. SPELLMEYER, VICE PRESIDENT, FEDERAL AFFAIRS AND PUBLIC POLICY, UNITED STATES CELLULAR CORPORATION; DANA J. FLOBERG, POLICY MANAGER, FREE PRESS AND FREE PRESS ACTION FUND; JONATHAN SPALTER, PRESIDENT AND CHIEF EXECUTIVE OFFICER, USTELECOM; AND JAMES W. STEGEMAN, PRESIDENT, COSTQUEST ASSOCIATES

STATEMENT OF SHIRLEY BLOOMFIELD

Ms. BLOOMFIELD. Thank you very much, Chairman Doyle, Ranking Member Latta, Mr. Walden, and members of the subcommittee. It is so terrific that you all are gathered here today coming back from recess to talk about something so important like broadband mapping and the legislation you have that is being considered by the subcommittee. I am Shirley Bloomfield, CEO of NTCA–The Rural Broadband Association. I have 850 community-based providers across the country in 46 States that really serve the most sparsely populated parts of our Nation.

A major challenge associated with making informed policy and investment decisions regarding the deployment of broadband in these rural sparse areas is whether there is or is not service already, which is why the hearing is so important today. But as it stands today as you have noted, the FCC maintains the most accurate maps available for most areas, but these mapping efforts are still frustratingly inconsistent and unreliable.

We find it is not unusual the conditions that are actually on the ground look very different from what appears on a national map. And we know that the current FCC maps miss the mark because they show an entire census area served when even if it is just one location in the block that is served, meaning that the entire census block becomes ineligible for support funding.

This false positive can mean a single customer can result in unserved customers miles away looking served on a map. In other words, perhaps the most important significant problem we have is granularity. Just last month the FCC did adopt an order that will move away from the overly broad use of census blocks for reporting broadband coverage and instead is now going to require providers to submit shapefiles. And that will actually be a good step forward.

At the same time, the FCC agrees with NTCA that we should not stop at shapefiles alone, but we should continue to move forward towards a uniform national dataset on top of which carriers can report broadband availability to ensure that this data can ultimately translate to which locations in our country are served or are not. This movement offers great promise in getting more granular maps, but it is really essential to remember that granularity and accuracy are not the same thing.

In fact, there are a few key steps that must be taken to promote accuracy separate and apart from granularity. First, we have got to standardize reporting. We have got to make sure that everybody reports on an apples-to-apples basis. That is really critical. Specific technical standards should be established and we must ensure that providers are not making unreasonable or unrealistic assumptions about the capacities that they actually have. We simply cannot rely on people reporting advertised speeds across a wide swath of rural America to be considered sufficient.

In addition to tracking speeds, NTCA submits that the FCC should require reports specifically on the latency and the usage limits applicable to broadband services. Latency and usage limits can play a really critical role in the consumer experience, particularly when you are doing something really important like telemedicine or distance learning. And it would be useful and not an incrementally difficult database to gather.

But even if you do standardization up front to improve the mapping inputs, all of that data in question still becomes self-reported. It is self-reported data, so therefore you are going to have to have a back-end validation process as well to ensure that the process actually has integrity. So one of these validation processes could be crowdsourcing, which allows users to actually report what they are experiencing on the ground. The crowdsource data must be implemented thoughtfully so that it provides value and detects noteworthy trends rather than creating confusion or burdens. Think of a heat map and what that data tells you.

Another and perhaps more critical validation that the Commission could utilize would be a robust challenge process anytime that it is preparing to make significant funding or other policy decisions. A challenge process would enable providers and policymakers to do one last sanity check on the accuracy of the map before decisions are actually reached.

A lot of broadband deployment since the most current map which is out there, which is in 2017, and we want to make sure that we are not doing overbuilding using Federal support because that is not the best use of limited resources. Improve the maps on the front end, validate on the back end. American consumers deserve the integrity of that process.

Turning specifically to the role that Congress and this committee can play, the legislation that you have under consideration, we applaud the careful attention that Representative Loebsack and Latta have placed in looking at a couple of things. First, making immediate granularity improvements in the form of shapefiles, very critical. Second, moving towards a more granular location fabric in the future, so we can really get a clearer picture. And third, calling explicitly for standard development and challenge processes to improve the data collection on both the front end and the back end.

So due in large part to the leadership of this committee and the subcommittee, small broadband providers like those in NTCA's membership have really made great strides in reducing the digital divide. But the job is far from done and you know that. We have got to make sure that we can use these maps to really figure out where broadband is lacking and sustain broadband where it actually exists today.

So on behalf of NTCA and all the members that we represent, we thank you sincerely for this hearing.

[The prepared statement of Ms. Bloomfield follows:]

Statement by

Shirley Bloomfield
Chief Executive Officer
NTCA–The Rural Broadband Association
Arlington, VA

Before the

United States House of Representatives
Committee on Energy and Commerce
Subcommittee on Communications and Technology

Legislating to Connect America: Improving the Nation's Broadband Maps

September 11, 2019

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INTRODUCTION AND BACKGROUND

Chairman Doyle, Ranking Member Latta, and members of the Subcommittee, thank you for the opportunity to testify today to discuss broadband mapping legislation being considered by your subcommittee. I am Shirley Bloomfield, Chief Executive Officer of NTCA–The Rural Broadband Association, which represents nearly 850 rural community-based carriers in 46 states that offer advanced communications services throughout the most sparsely-populated areas of the nation.

Small, hometown-based rural telecom providers like those in NTCA's membership connect rural Americans with the world – making every effort to deploy advanced networks that respond to consumer and business demands for cutting-edge, innovative services. These cooperatives and small, locally-owned companies serve the most rural parts of the United States, reaching areas that contain less than five percent of the U.S. population, but which are spread across approximately 35 percent of the U.S. landmass. These companies serve areas where the average density is about seven customers per square mile; to put this in context, this is roughly the average density for the entire state of Montana. The distances to cover and the low population densities present unique challenges, and underscore the critical importance of these small telecom providers that connect rural Americans with the world.

Even in the face of such challenges, however, these small, hometown businesses make every effort to deploy advanced networks that respond to consumer and business demands for cutting-edge services that position rural communities for success in a rapidly-changing world. Fixed and mobile broadband, video, and voice are among the many services that rural Americans can access thanks to our industry's commitment to serving sparsely populated areas. The rural telecom industry has always been innovative – leading the way in converting to digital switched systems, deploying creative technological solutions to their hardest to reach customers, enabling distance learning and tele-health applications, and ultimately deploying future-proof fiber-based systems.

But there is more to do. The job is far from done. Even as we have successes to celebrate and roadmaps to look to for proven track records of success, we as a nation have much more to do both to reach unserved areas and to sustain robust and affordable rural broadband where it is available today. And, of course, a major challenge associated with supporting and making informed policy decisions regarding the deployment of broadband in rural America is determining with much greater accuracy where there is and is not service – which is why today's hearing is so important.

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"GETTING MORE GRANULAR" IS A GREAT START

More accurate identification of broadband availability is important for many different reasons. For consumers in rural areas, an accurate depiction of where broadband does or does not exist can be critical in making decisions about where to plant roots. For businesses, knowing where robust broadband is has become an increasingly important part of investment and relocation decision-making. For service providers, what the maps show in terms of broadband access can affect whether much-needed federal or state funding is available to support deployment of networks in areas where the business case otherwise does not exist. And, for policymakers, a better understanding of where broadband is or is not available is critical in making informed judgments about policy and the targeting of support.

As it stands today, the Federal Communications Commission (FCC) maintains the most accurate maps available for most areas. At the same time, broadband users, our members, other service providers, members of Congress, and even the FCC itself have all found the results of these mapping efforts frustratingly inconsistent and unreliable. In fact, we find it is not unusual for "conditions on the ground" to look very different from those depicted on national maps.

It has been well recognized for some time that the current FCC maps miss the mark because they show an entire census block as served when even just one location in that block is served – meaning that a census block becomes ineligible for support funding. In other words, perhaps the most significant problem to date has been *granularity*. This problem, unfortunately, has been persistent and frustrating for all involved. It creates "false positives" in the form of claimed coverage where none exists, especially in rural areas where large census blocks can mean a single customer served can result in unserved customers miles away looking "served" on maps.

This is more than an academic concern, because federal policy and funding decisions often turn on what the maps say in terms of availability – if an area shows as served, this can result in the denial or withdrawal of much-needed universal service support or other funding required to make the business case for investment and ongoing operation of broadband-capable networks by private operators. Of course, it is ultimately the consumers who suffer when this happens, as some may never see broadband as a result (because they already look served) or they could even lose access to broadband they have now (because support is eliminated in areas where it is needed).

Fortunately, the FCC has recently taken steps to remedy this granularity concern. Specifically, just last month the FCC adopted an order that will move away from the overly broad use of census blocks for reporting broadband coverage, and instead now will require providers to submit "shapefiles" showing where they offer broadband. To simplify, polygons essentially will enable providers to "draw lines" specifically around the areas they serve on a map, which will allow the maps to reflect actual coverage rather than sweeping entire census blocks in as "served" just because one corner of that block (or even just one house in that block) is served.

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And the FCC seems unlikely to stop there in the drive to establish more granular broadband coverage maps. In its recent order, the FCC agreed with the assessment of USTelecom and NTCA that the agency "should not adopt an 'either/or' approach to improvements in data collection, but should both adopt shapefiles as a reporting methodology and move forward towards a uniform national dataset on top of which carriers can report broadband availability (via shapefile or other potential methods)." The FCC is therefore now seeking comment on the development and implementation of a location information into the data collection, including the use of a "location fabric" that will help to make sure the shapefiles (or other means of more granular reporting) actually translate to individual locations – and ultimately an actual identification of which locations in the United States are served or not.

BUT "GETTING MORE GRANULAR" IS HARDLY ENOUGH – THAT IS ONLY THE BEGINNING

Certainly, the fact that existing maps are based upon overly broad census block-based reporting has been a primary driver of concern and inaccuracy – and the steps that the FCC has taken and the further steps that the FCC is now considering should help to address, if not eliminate this concern about granularity. But what can often get lost in the grand debate over granularity is that ***granularity and accuracy are not the same thing***. "Getting more granular" can help with accuracy, but it does not ensure it. Thus, more must be done to achieve *accuracy* beyond efforts to demand more granular service availability reporting. Here too, fortunately, the FCC has taken several steps and is looking at several more to tackle the problem more comprehensively.

With this as backdrop – what is the FCC doing, and what else should be done, to make the maps more accurate beyond making them more granular? There are a few key measures that must be adopted and implemented to achieve reliable and accurate maps.

1. *Standardization Is Critical to Get an Accurate, Apples-to-Apples Depiction of Broadband Availability*

As the FCC recognized in its recent order, standardization of reporting is critical. For far too long, under the existing self-reporting regime, there has been little to no direction on what providers can report for broadband coverage. Instead, all that has been required is that providers report what they advertise as available in an area. This means, for example, if a provider merely advertises a certain speed across a wide swath of rural areas – *even if it has not tested its capability to reach specific locations or to serve all of the locations in that area* – that alone is technically sufficient to justify a report of availability today. Put another way, all that really matters for purposes of current reporting is that a provider's marketing department believes service could be provisioned to a single customer within a given area. Fortunately, the FCC has recognized the problems this can create, and is now seeking comment on the development of specific technical standards to which all providers must adhere in reporting what areas they could serve within a certain installation time frame in the ordinary course of business. This step, if implemented properly, will be a significant step forward and should produce much more reliable and consistent maps reflecting more realistic claims of coverage that can be evaluated on an "apples-to-apples" basis.

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But even if the "front-end" process of reporting is improved through both greater granularity and concrete technical standards that all providers must use in developing their coverage claims, the fact is that all of the data in question will remain self-reported. Errors in filing, misapplication of the technical standards, or sheer neglect or lack of thoughtful process by a provider could all still lead to inaccuracies in the self-reported data. There will also be timing concerns – as a matter of sheer process, it will take months following reports for the FCC and the Universal Service Administrative Company (or whomever ends up administering the data collection for the FCC) to work through the data and post updated maps. Back-end validation is necessary to address this concern as well.

With these concerns in mind, these are the additional measures that should be taken to ensure the accuracy of the data collection and the resulting maps:

> 2. *Use Crowdsourcing in a Smart Way to "Sanity Check" Self-Reported Data*

For the reasons described earlier, it is not enough to engage in "front-end" measures such as more granular reporting and prescription of technical standards. Because of the self-reported nature of the data and timing considerations, there must be "back-end" validation procedures. One of these validation processes can be "crowdsourcing" – leveraging the ability of users to report that what they see on broadband coverage maps do not reflect their experience on the ground. The FCC has indicated its intent to make use of crowdsourced data and is now seeking comment on precisely how to do so.

Crowdsourcing can provide useful information in identifying problems in reported coverage, but it must be implemented thoughtfully to avoid overwhelming the system for the Commission and providers alike. If the Commission and each provider must respond on a "one-off" basis to each and every consumer question with respect to coverage, this would present a tremendous burden that may yield very little actionable information in return. Indeed, given that consumer speed tests and the like can be influenced by a variety of factors ranging from age of devices, location of equipment, and interoperability, crowdsourced information should be seen as informative but not conclusive. Crowdsourced data should therefore be a tool to detect trends in reporting problems – for example, such data could be used to see that a number of consumers in a given area are expressing concern about a given provider's purported coverage, which could then prompt an inquiry into whether the coverage claims are accurate.

> 3. *Pursue a Robust Challenge Process Before Using Data to Make Funding or Other Policy Decisions*

There is one other "back-end" validation procedure that will be critical to making sure broadband coverage information is both granular and accurate. Specifically, the Commission should utilize a "challenge process" any time that it is preparing to make significant funding or other policy decisions based upon the then-current maps. A challenge process would enable providers and policymakers to do one last "sanity check" on the accuracy of the maps before decisions are

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reached and help to correct and fill any remaining errors even after all of the other steps are taken. There are several reasons the idea of a challenge process is so important.

First, accurate mapping data can simply "make or break" the ability to deliver and sustain service in rural America – bad mapping data risks leaving rural consumers stranded without broadband. Without the ability to challenge the self-reported data that will translate into the FCC's maps, much-needed support through the FCC's USF program could be being denied or withdrawn in areas where that support is in fact very much needed – which then translates into rural consumers not getting served, which is the most important part of this problem. While improving the maps on the front end is undoubtedly important and has attracted most of the attention, without any ability to validate or correct on the back end the self-reported data that gets populated into these maps and used by agencies to decide where funding should go, the end user is ultimately the one who suffers. Thus, even as there is a push to improve the standards and granularity of how providers report, it is equally important not to forget the importance of making sure that there is some opportunity to "sanity check" the accuracy of the data being self-reported by providers before significant decisions are made.

Second, timing considerations warrant the use of a challenge process before the maps are used to decide where funding should or should not go. For example, as of September 2019, the most current data publicly available for broadband coverage is from reports reflecting services as of December 2017. Thus, the current maps do not reflect buildouts completed since that time or right now in progress, including those that may be occurring pursuant to governmental initiatives like the FCC's own Universal Service Fund or United States Department of Agriculture Rural Utilities Service lending/grant programs. This means that, without some check, there is a risk of "false negatives" appearing in the maps, with areas that look unserved actually having become served in the intervening period. If these false negatives are permitted to persist, there is then the risk of overbuilding of existing networks as future funding decisions are made – including the potential for multiple governmental programs to fund duplicative and competing networks to be built through two different programs. A challenge process is needed to help to mitigate, if not eliminate, such concerns.

LATENCY AND USAGE LIMITS ARE IMPORTANT PERFORMANCE CHARACTERISTICS TO TRACK

Today's broadband maps show speeds advertised by providers to any consumer within a given census block. Speed is certainly one important metric in determining broadband availability, but it is not the only one. Latency and usage allowances are also important factors to consider in taking stock of how consumers can use broadband; the FCC has recognized this before, making both of these performance requirements in its USF programs.

To be clear, a balance must be struck between reports that are burdensome and unwieldy and those that contain sufficient information to make a meaningful determination about broadband availability. NTCA submits that, in addition to speed, the FCC should require providers to report specifically on the latency and usage limits applicable to their broadband services, subject to the same kinds of technical standard specification that would apply to reporting on speed so that

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these accurately capture the user experience in the area where coverage is claimed. Policymakers rightly tend to cite distance learning, overcoming the "homework gap," and enabling connected care and telehealth as public policy reasons why broadband access is so important. Latency and usage limits can play a critical role in the consumer experience with these applications and many more, and it would therefore be useful and appropriate – and not represent a significant incremental burden – to collect information on these specific performance characteristics as well. The FCC should not go further at this time, however, in capturing service information, as these are truly the most essential parts of capturing service availability.

THE ROLE OF CONGRESS IN DRIVING BETTER BROADBAND MAPS

Obviously, the FCC has taken significant strides just in the last month to move toward more granular and accurate broadband availability data collections and maps – and it is seeking input now on how to implement these measures and possibly take additional steps to improve our nation's broadband maps. But Congress has an important role here still and can and should provide vital guidance and direction to the FCC on how to proceed next.

Many different proposals are being presented now through legislation, and each of them holds promise to make the maps much better than they are today. These proposals warrant significant consideration, and they can help provide a much-needed path forward toward improved data. Among these worthwhile efforts include the bill we are discussing today, led by Reps. Loebsack and Latta, and other mapping proposals such as legislation introduced by Reps. McMorris Rodgers and O'Halleran. We applaud the efforts of members on both sides of the aisle and both sides of Capitol Hill for their recent legislative efforts to address the broadband mapping problem.

Turning specifically to the bill sponsored by Reps. Loebsack and Latta, there are many important provisions that could give the FCC clearer direction on where to head next and support for the efforts already underway. For example, we applaud the careful attention paid in the legislation to immediate granularity improvements in the form of shapefiles, the clear message sent with respect to the need to move toward a more granular location fabric in the future, and the explicit call for standards development and challenge processes to improve data collection on both the front end and the back end. We also think it is important that Congress provide resources toward this exercise – resources that the FCC does not itself have today – and the instruction in the legislation to the FCC to include a request for resources to promote more granular mapping and technical assistance for smaller operators in its budget submissions is a prudent and welcome way of making sure these efforts are implemented properly.

CONCLUSION

Due in large part to the leadership of this committee and subcommittee, small, rural broadband providers like those in NTCA's membership have made great strides in reducing the digital divide in rural America. But the job is far from done, and better broadband maps can play a key role in making sure that we both build broadband where it is lacking and sustain broadband where it exists today.

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On behalf of NTCA–The Rural Broadband Association, your commitment to identifying and solving these challenges is greatly appreciated. We look forward to the continued discussion and advancement of measures such as those being considered today. Thank you for inviting me to be with you, and I look forward to your questions.

Mr. DOYLE. Thank you very much.

The Chair now recognizes Mr. Assey for 5 minutes.

STATEMENT OF JAMES M. ASSEY

Mr. ASSEY. Thank you. Good morning, Mr. Doyle, Ranking Member Latta, members of the subcommittee. My name is James Assey and I am the executive vice president of NCTA–The Internet and Television Association. NCTA's members include the Nation's largest providers of high-speed internet access as well as small ISPs serving some of the most rural parts of the country. We welcome today's hearing focused on several bills to improve broadband mapping and look forward to working with you on these issues.

Over the last 2 decades, our broadband maps have helped chart the rapid growth and expansion of internet technology. Indeed, following hundreds of billions of dollars invested by the cable industry and other ISPs, high-speed internet service has rapidly expanded to reach over 90 percent of American households. Yet, despite such success there are still many places today where broadband service is not available and likely may not be without some form of government support.

Ideally, data from our broadband maps would help us identify these coverage gaps. But, regrettably, while the tools currently used offer some assistance in highlighting unserved areas, our system at present is too crude to fully perform this role with desired precision. This is because the FCC's map today relies on information submitted on Form 477 that requires providers to report deployment data at a census block level.

While such an approach helps us identify census blocks that are wholly unserved, it also leads to some admitted mistakes as the methodology counts an entire census block as served even if just a single household in the block has access. Thankfully, we can improve this process.

Indeed, the FCC has recently taken significant steps in this direction adopting a proposal suggested by NCTA that will require providers to submit polygon shapefiles or coverage maps that more precisely reflect the areas where service can be offered in the normal course of business. Importantly, these rules will also permit further refinement through public, crowdsourced feedback that will promote a more accurate picture of broadband availability.

As the committee considers mapping legislation, we encourage it to build on what the FCC has done and refrain from actions that might delay the swift implementation of these improvements. Consistent with this belief, we commend Congressman Loebsack, Ranking Member Latta, as well as Congresswoman McMorris Rodgers and O'Halleran for their respective efforts on the Broadband DATA Act and the Broadband Data Improvement Act. Each of these bills would ratify the FCC's reliance on more granular shapefile submissions, secure a more robust validation and challenge process, and improve coordination among Federal agencies to track broadband funding awards.

Beyond the clear benefits of shapefile reporting, we note that some providers have suggested that the FCC create other tools to complement an improved map of served and unserved areas. Unlike shapefiles, the location fabric tool suggested by USTelecom fo-

cuses not on the more granular identification of unserved areas, but rather determining the precise location of serviceable buildings within unserved areas.

Admittedly, such data could be helpful to bidding parties in sizing the potential cost of serving unserved areas. But it also raises a number of thorny implementation questions that deserve to be fully explored on the public record. Indeed, the FCC's pending further rulemaking tees up many of these issues for consideration and offers a perfect venue for parties to test private claims and consider the marginal costs and benefits of creating a new location tool.

Finally, as we work to improve the accuracy of maps identifying unserved areas, a process that has already taken 2 years at the FCC, we should avoid getting sidetracked by attempts to insert extraneous data points into the consideration of whether broadband service is or is not available in a particular area.

The FCC already collects a wealth of data from broadband providers and each type of data has value, but attempts to graft new data requests onto mechanisms designed to address broadband availability would only muddy the waters, increase costs, and could delay funding to unserved areas. Instead, we encourage you to appreciate the relevance of specific data to its specific context so as to help identify the signal from the noise and keep improvements moving forward as cleanly and efficiently as possible.

At the end of the day we know that no map will be perfect and that every map is only a snapshot of a world where conditions constantly change. But with common purpose and humility we can work together to meaningfully improve the accuracy of our current maps in ways that are practical and advance our national interest in bringing the benefits of broadband to all.

Thank you for this opportunity and look forward to your questions.

[The prepared statement of Mr. Assey follows:]

TESTIMONY OF JAMES M. ASSEY

EXECUTIVE VICE PRESIDENT
NCTA - THE INTERNET AND TELEVISION ASSOCIATION

on

Legislating to Connect America: Improving the Nation's Broadband Maps

before the
Subcommittee on Communications and Technology
Committee on Energy and Commerce
UNITED STATES HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.

September 11, 2019

Good afternoon, Mr. Chairman and Members of the Subcommittee. My name is James Assey and I am the Executive Vice President of NCTA – the Internet and Television Association. NCTA is the principal trade association for the U.S. cable industry, which supports 3 million jobs all over America – over 300 people in every congressional district in the United States – and has an estimated economic contribution of $450 billion to the U.S. economy.[1] Our members include the nation's largest providers of high-speed broadband Internet access as well as small ISPs that serve the most rural areas of the country. We welcome this important hearing on the Broadband Deployment Accuracy and Technological Availability Act (the "Broadband DATA Act") and other important broadband mapping legislation, as the Committee considers how best to bring broadband to all of America, and I am pleased to be here today to discuss how improvements to current broadband maps can play a key part in achieving that goal.

Over the last twenty years, we have witnessed the rapid expansion of broadband networks. The cable industry has invested over $290 billion to deploy networks reaching roughly 93% of American households with broadband infrastructure and networks over the last twenty years. Federal and state governments, along with other industries, have also devoted billions more in annual subsidies through universal service and other government programs. Notwithstanding this progress, and the substantial capital invested in these efforts, we know that millions of Americans today still live in areas where high speed broadband service is not yet available. As Congress and the FCC continue to consider policies that will achieve the goal of delivering broadband service to all Americans, our collective challenge is to find those gaps

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[1]   *Investing in America,* www.ncta.com/sites/default/files/2019-07/investing_in_america_factsheet. pdf.

and fill them. No doubt, new technologies and new strategies will be needed to confront the

challenging economics of serving remote, less dense parts of the country. But we will also need

better broadband maps to identify the problem, to target scarce resources where they are most

needed, and to chart our continued progress toward achieving our national goal.

The Role of Form 477 and Broadband Mapping

For nearly two decades, the FCC has relied on information submitted by providers about

voice service and broadband deployment through "Form 477" to inform its policymaking. The

data from Form 477 also enable the FCC to fulfill its statutory responsibilities, including

assessing whether broadband deployment is increasing throughout the country in a timely

fashion.

Over the years, the FCC has continued to refine the Form 477 data collection to obtain

better information to meet changing policy goals. In 2013, it began requiring providers to

report deployment data at a census block level, which was a far more granular level of data

than had ever before been collected. The ability to identify which census blocks had broadband

service – and then translate that data onto a map – gave the FCC a good picture of how

broadband deployment was spreading throughout the country, which areas of the country had

broadband competition, and the speeds that were being offered in various areas. It also

enabled the FCC to identify unserved census blocks that should be eligible to receive new

government subsidies for broadband deployment.

The FCC's current Broadband Map remains the product of data collected by the FCC

from the Form 477 reports – and a refinement of the original NTIA National Broadband Map.

As in 2013, providers indicate whether broadband service is available in any part of a particular

census block or not. The result is that a census block may be reported as "served" even if broadband is only available in a small portion of the area, and some areas that may have benefitted from broadband funding support are not eligible because they are considered "served." This has caused a particular concern in rural areas, where census blocks can be quite large and broadband service may only be available in limited areas.

Today, it is time for providers to report their deployment data in a more targeted fashion, to identify the remaining pockets of the country – often *within* census blocks – where broadband service is truly lacking. But the purpose of having a National Broadband Map has not changed. At its core, a National Broadband Map is not an end to itself, but a tool to identify where broadband service is available at a given point in time, and to aid policymakers in focusing scarce government resources where they are needed most – areas where broadband service is not available. Having this clear understanding is key to ensuring that broadband funding efforts are directed at the unserved areas that need it most. With appropriate support from the FCC and Congress, such as the legislation being considered today, broadband maps will continue to improve so that they are as useful as possible in helping to achieve the goal of ubiquitous broadband for all Americans.

Recent Improvements in Form 477 Data Collection and Mapping

The FCC already has taken significant steps toward updating this process. Aided and spurred by discussions in this Committee and elsewhere in Congress, the FCC in August adopted new measures to reform and improve the quality of data it receives so that actual deployment can be more precisely reflected on a National Broadband Map, while still maintaining reasonable reporting burdens on providers. Once implemented, these changes will require

providers not only to continue to submit a list of census blocks where they make service available, but also to also submit more detailed information about the areas within those census blocks in which they can and do offer service.

Specifically, the new FCC rules adopt a proposal made by NCTA that will require providers to submit more granular representations of network coverage through the use of polygon "shapefiles" – electronic coverage maps that represent the areas where they make service available. Because the shapefiles that providers will now submit are not tied to census block boundaries, and are required to exclude areas where the provider cannot deliver service within a standard business practice period, those maps will show far more precisely where broadband service is available and where it is not. Using shapefiles also ensures that the FCC will receive far more accurate information without imposing unreasonably burdensome requirements on providers, which some other alternatives, such as mandated location- or address-based reporting, could do.

In addition to seeking more granular information from providers, the FCC also took another important step to improving data collection by adopting a process that allows for public feedback on the data submitted by providers. Under this "crowdsourcing" approach, the public will be able to submit data about whether service is, in fact, available in the areas identified on the shapefiles submitted by a provider as "served." This data will supplement and fine-tune the deployment data submitted by providers.

As this new crowdsourcing approach is incorporated into the mapping process to further refine the map, it will be important to set up evidence-based standards and processes that ensure that any data relied on in creating its map is both relevant and accurate. There are

certain issues associated with the deployment of broadband that should be considered in order to create a meaningful process that minimizes administrative burdens. For example, an address might not currently have broadband service because no one has requested it, but a line could easily be extended to that household from the existing network without delays or extra fees if there were an actual consumer request for service. For purposes of mapping, that household would be – and should be – considered "served."

Similarly, a consumer (or a state or local agency) might submit data gathered from online speed tests purporting to show that an area is not served because the customer is not receiving speeds at the level reported by the provider to the FCC. But there are many factors outside the network provider's control that may contribute to aberrant performance. Such factors can include limitations, malware or viruses on the equipment in the home, whether the equipment is using a wired or Wi-Fi connection, the type and location of the router, the performance of other networks involved in the transmission of Internet traffic, and the configuration of the online speed testing platform – or even the simple fact that a customer has elected to purchase a tier of service that offers speeds below the highest advertised speed made available in a particular area. Unless the speed tests are performed on a platform that controls for each of these factors, such as the Measuring Broadband America (or "SamKnows") platform used by the FCC, they cannot be considered dispositive of whether the provider makes service available at the relevant speed threshold.

Additionally, before awarding scarce broadband deployment subsidies based on the map, there should be a means of challenging a provider's submission of deployment data, an opportunity for the provider to respond to the challenge, and a forum for resolution by the FCC

if the parties do not reach agreement. This ensures that funding is directed to truly unserved areas instead of overbuilding areas already served though other subsidies or private investment. Importantly, there should also be a means of ensuring that frivolous complaints are weeded out, so that providers are not flooded with household-by-household complaints each time they submit data.

Together, shapefile reporting and crowdsourcing data will create a faster, more efficient and more accurate picture of broadband availability than ever available before. While there will certainly be costs for providers and for the FCC in establishing this new reporting regime, we anticipate that the benefits will be significant, not only to legislators considering what types of broadband funding are needed, but to members of the public trying to evaluate what services are available in a particular area. In considering the Broadband DATA Act and the related legislation before you, we encourage the Committee to maintain the approach of building on what the FCC has done, and refraining from taking any steps that might delay its implementation.

The Broadband Data Improvement Act, for example, would make a constructive improvement to the shapefile approach by adding a three-pronged data validation process. We also commend this legislation's appropriate focus on identifying where broadband is and is not, and its recognition that the Map should be used by all Federal agencies to identify areas that remain unserved and track where awarded funds have improved availability.

Important Considerations for Broadband Mapping Legislation

As you consider legislation aimed at improving broadband maps and extending service to unserved households, there are a few lessons learned from the FCC process that could be useful to you. We urge you to take the following concerns into account.

First, it is important to ensure that mapping efforts produce demonstrably better information than what is available today and do not impose unreasonable burdens on providers to achieve this goal. For example, when considering the idea of estimating the precise geographic location of places that need broadband service, the Committee should carefully consider both the costs and potential benefits of such additional data through a transparent public process. In particular, the FCC is looking at the costs and benefits of creating a "broadband serviceable location tool" that would function as a database/map of every home and business in America, with detailed address and latitude and longitude information purporting to represent the precise location where broadband service is needed for that home or business. In that regard, recent experiments conducted by telecom providers in select states should have the benefit of public examination, and the FCC has appropriately teed up a number of questions associated with this effort in a pending proceeding.

Importantly, public examination of this proposal should evaluate the costs and burdens associated with creating and maintaining such a tool to guard against costs that are significant and that might fail to produce substantially more benefits than are already available through the improved process that has already been put in place in conjunction with existing mapping tools. Tough questions should be asked -- How would such data be generated so as to ensure that it focuses on unserved locations and does not slow progress or add new burdens in served

areas? How would procedural transparency be guaranteed? What incremental benefits would be expected? And what are the true costs of such a process?

It is also important to consider the challenges associated with creating and maintaining the location tool transparently. The Broadband DATA Act appropriately recognizes that the FCC, with its contractor, should be responsible for creating and maintaining this dataset as opposed to providers. Any attempt to create a location-by-location map, however, should have to take into account not only the overwhelming initial burden to create and compile such data, but also the constant updating that would be required to take into account the hundreds of thousands of new homes built each year, as well as all the homes lost to wildfires, hurricanes, flooding, and other disasters. It could be nearly impossible to keep up with such a task, or for other providers or the public to ensure that locations are properly identified and validated. The government could easily spend many millions of dollars to create a tool that fairly quickly proves unworkable. Especially in non-rural areas, this effort could be a waste of limited resources, because existing mapping tools, plus shapefiles and crowdsourcing data, will reliably show the requisite deployment information in most cities and suburban areas.

Second, it is important that any mapping track not only where providers have already deployed, but where they have been awarded funds to deploy in the future, whether from federal or state programs. Since the core function of a National Broadband Map is to ensure that government funds are dedicated where they are needed most, areas that already have been awarded funding should be properly designated, and all federal agencies should be required to consult the map before issuing subsidies so that scarce funds are not awarded in a duplicative fashion.

Finally, as we strive to improve data sets designed to identify the geographic areas that cannot yet get access to broadband, it is critical that we avoid getting sidetracked by attempts to layer in extraneous types of data that are not relevant to the consideration of whether broadband service is or is not available in a particular geographic area. The FCC already collects a wealth of data from broadband providers. It collects subscription data through the Form 477 process, which shows how many people purchase service at a particular speed threshold in a particular area. It collects pricing data through the Urban Rate Survey. It collects network performance data for fixed broadband providers – including data on actual speeds and latency – through the Measuring Broadband America process that relies on rigorous, independent network testing. None of these types of data, however, addresses broadband *availability*, and attempts to combine all information into one resource or to insert new data collection into this process would be more likely to muddy the waters and increase costs, and could delay funding to unserved areas. Instead, we encourage you to appreciate the relevance of specific data to the specific context, so as to identify the "signal" from the "noise" and keep mapping efforts moving forward as cleanly and efficiently as possible.

Thank you again for inviting me here to speak with you today. NCTA's members welcome this hearing and are committed to working with you to improve the quality of broadband maps so that we, you, the FCC and the public have the best deployment information possible while minimizing unnecessary administrative burdens. With improved maps to use as a tool for guiding broadband funding support, we will all be better positioned to extend broadband to help achieve the goal of making broadband available to every American.

Mr. DOYLE. Thank you.

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

STATEMENT OF GRANT B. SPELLMEYER

Mr. SPELLMEYER. Thank you. Chairman Doyle, Ranking Member Latta, members of the subcommittee, thank you for the opportunity to testify today on broadband mapping. Just for the benefit of the Members assembled here today, I am the wireless witness. I am going to talk about the wireless side of the mapping. Most of my colleagues here at the table are going to be speaking, you know, exclusively to the wireline side and I want to try to avoid a little bit of confusion over some of the nomenclature that you will hear.

With that said, U.S. Cellular fully supports legislative efforts to improve broadband mapping including all of the bills before this committee today. As you well know, this is not the first congressional hearing on the topic of broadband mapping. Thanks to this committee's continuing oversight efforts, it is now universally accepted that the FCC's maps overstated coverage in rural areas, sometimes significantly.

U.S. Cellular operates in 21 States across America including many of those represented on this committee. Much of our business involves finding ways to provide service in small towns and on rural roads, areas where population density, economic investment, and income levels are often well below urban areas. We are constantly thinking about ways to address the economics of providing vital broadband services to those areas.

Accurately mapping mobile broadband coverage is difficult because there are many factors such as terrain, foliage, spectrum, and equipment deployed that affect how far a radio signal travels and the signal quality a consumer actually experiences on the ground. We believe the primary issue with the FCC's one-time data collection for wireless is that some of the key standards adopted were inconsistent with how carriers actually design and operate their networks.

For U.S. Cellular, the Mobility Fund II challenge process was an all but impossible task. Our challenges are documented in a YouTube video that is referenced in my written testimony. I have also attached to my written testimony example maps demonstrating the abysmal results we found during drive testing across this country.

My company invested over $2 million to bring those challenges. We exhausted that budget. We ran out of time. We succeeded in testing only a small fraction of the areas that we believed to be inaccurate. To its credit, the FCC heard the widespread complaints and late last year they thankfully suspended that challenge process to review carrier submissions and to consider next steps.

We are at a critical moment in time. Everyone agrees that the maps are not good enough to conduct an auction. The Broadband DATA Act will significantly improve broadband mapping for mobile services by mandating standards that reflect how wireless carriers actually engineer their networks today in rural America. For example, the FCC's one-time data collection used a cell edge probability of 80 percent and a cell loading factor of 30 percent. Consistent with how we actually engineer our networks today, this legislation

would properly direct the use of stronger factors. Ninety percent at the cell edge probability and a 50 percent cell loading factor, reflective of how busy the network actually is in a rural area.

By passing this legislation, Congress will also significantly improve the challenge process. For a challenge process to be effective, the areas of controversy should be small so that the task of bringing challenges is actually manageable for carriers and for the American public and so that people believe that actually taking the time to participate is worthwhile.

In closing, we must get this right because 10 years' worth of Federal Universal Service funding is riding on this map. In the fixed broadband world that is over $20 billion. In the mobile broadband world, it is another $4½ billion. Every study indicates that it is going to take significantly more than $25 billion to achieve high-quality fixed and mobile broadband throughout our Nation and that doesn't even begin to account for the costs of rolling out 5G. We can't afford to waste even a single dollar.

This committee should adopt the Broadband DATA Act and the related legislation before it today so that we can get on with the task at hand. Step one is fixing the maps and we begin that process here today. Step two is even more significant; that is actually filling in those maps. That is a broader challenge and we look forward to working with the committee on that next. Thank you.

[The prepared statement of Mr. Spellmeyer follows:]

WRITTEN STATEMENT

of

GRANT B. SPELLMEYER

VICE PRESIDENT - FEDERAL AFFAIRS AND PUBLIC POLICY

UNITED STATES CELLULAR CORPORATION

before the

UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON COMMUNICATIONS AND TECHNOLOGY

"LEGISLATING TO CONNECT AMERICA: IMPROVING THE NATION'S BROADBAND MAPS"

SEPTEMBER 11, 2019

Chairman Doyle, Ranking Member Latta, and members of the Subcommittee, my name is Grant B. Spellmeyer, and I am the Vice President - Federal Affairs and Public Policy at United States Cellular Corporation. Thank you for the opportunity to discuss your legislative efforts to improve the nation's broadband mapping. As discussed below, U.S. Cellular fully supports legislation to improve mapping, including the bills before this Committee today.

I.   Introduction

U.S. Cellular is the 5th largest wireless carrier and provides mobile wireless telephone and broadband services across 21 states, located in regional clusters across the country. We serve overwhelmingly rural areas in many states represented on this subcommittee, such as Iowa, California, New Hampshire, Vermont, Oregon, Washington, Illinois, Missouri, Virginia, West Virginia, North Carolina, and Texas.

U.S. Cellular is a member of the Competitive Carriers Association, and like many CCA members, much of our business involves finding ways to build towers and provide service in small towns and on rural roads, areas where population density, income levels, and commercial development are often well below those in our nation's urban areas. Consequently, we are constantly thinking about ways to address the economics of providing vital services to areas that present financial challenges to build, maintain, and upgrade service.

In order to accelerate our investments in rural areas, we participated in the FCC's Mobility Fund Phase I auction process. U.S. Cellular and its subsidiary companies succeeded in winning approximately $40 million in support, which we have leveraged with our own funds to build new towers and upgrade 4G LTE networks serving places we could never make a business case to construct on our own. Today, consumers in these areas have access to 4G LTE mobile broadband that they would not have but for the FCC's universal service fund mechanism. For them, the program is a huge success.

Recently, we have participated actively in the development of the FCC's Mobility Fund II ("Phase II") program in which the FCC pledges to distribute $4.5 billion over a 10 year period for further rural wireless broadband deployment. Our experience in both the FCC's Mobility Fund Phase I and Phase II processes has shaped our views on how the universal service fund mechanism can and must be improved. Foremost is the strong belief that scarce public funds must be accurately targeted to the areas most in need. To accomplish this, we need reliable broadband maps, which makes today's hearing and accompanying legislation vitally important.

II.   The State of Broadband Mapping for Mobile Services

Accurately mapping mobile broadband coverage is difficult because many different technical and environmental factors, such as terrain, foliage, power levels, and equipment, affect how a radio signal travels and what signal quality a consumer may experience. That said, today's broadband coverage maps are woefully inaccurate and, unfortunately, skew policies used to direct scarce funds. Accordingly, today's action by this Committee is extremely important because improving maps will help both federal and state policymakers recalibrate policies that impact investments in our nation's rural infrastructure.

A bit of history will illuminate why your attention to this problem is necessary. The FCC's historically flawed Form 477 process for mapping mobile broadband contained very broad standards for reporting signal coverage. Without consistent reporting standards, the service availability data submitted on FCC Form 477 can vary significantly from the actual coverage that rural consumers experience on the ground as well as from carrier to carrier, who may report Form 477 using different parameters. To be clear, I'm not talking about carriers misreporting data, but rather legitimate differences that radiofrequency engineers, equipment vendors, and mapping technicians may have when predicting signal coverage that allow for wide variations.

To its credit, the FCC recognized in 2017 that it could not conduct Mobility Fund Phase II unless it improved its mobile broadband map. Under Chairman Pai's leadership, the Commission ordered a "one-time" collection of mobile broadband mapping data using narrower engineering and reporting standards, as well as establishing a challenge process to provide the Commission with data identifying areas that experience service availability inconsistent with the one-time data maps.

As you well know, this is not the first Congressional hearing on the topic of broadband mapping. But one of the major lessons learned by this Committee's oversight has been that it now seems to be universally accepted that the one-time mapping data overstated coverage in rural areas, sometimes significantly. As a result, the areas of controversy were so large that it made the Commission's challenge process very difficult. We believe the primary issue with the one-time data collection is that the standards adopted were not consistent with how carriers design and construct networks.

Again, to the FCC's credit, they heard these complaints and late last year they suspended the one-time data challenge process to review carrier submissions and to consider next steps. Now, we are at a critical time, because almost everyone agrees that the maps are not good

enough to conduct an auction and distribute funds, while rural consumers are waiting for improved mobile broadband and the health, safety, educational, and economic development benefits that are happening in rural areas where such services are available. Phase II of the Mobility Fund will distribute funds for ten years, and if support is targeted to the wrong places, those rural areas most in need will fall much farther behind.

We support each of the bills being considered here today. For U.S. Cellular, H.R. 4229 - the Broadband DATA Act, as well as S. 1822 - the DATA Act, sponsored by Senator Roger Wicker (R-Miss.), arrive at this critical time. With the passage of S. 1822 out of the Senate Commerce Committee in July, we are eager for this Committee approve comparable language as soon as possible in order to see these standards enacted into law.

III.   H.R. 4229 - The Broadband Deployment Accuracy and Technological Availability Act.

The Broadband Deployment Accuracy and Technological Availability Act ("Broadband DATA Act") will significantly improve broadband mapping for both fixed and mobile services. With respect to mobile broadband, the bill has a number of features that will enable policymakers both at the federal and state level to more accurately target universal service support and other broadband funding programs, so that consumers can see the benefits of modern infrastructure at the earliest possible date. These benefits will extend to 5G technology, which is beginning to be deployed in urban areas as we speak. With respect to mobile broadband, the bill would:

- Define key radiofrequency engineering terms used to build propagation maps, such as Cell Edge Probability, Cell Loading, Propagation Model, and Clutter. These definitions are essential to creating common standards.

- Require the FCC to:
    - Take into consideration the effects of clutter,
    - Establish for 4G LTE a requirement that propagation maps depict a "5/1" speed, with a cell edge probability of 90 percent and cell loading of 50 percent, and
    - Establish any other technical parameter that creates a map more precise than the one created through the one-time data collection for Mobility Fund II.

- Require the FCC to issue final rules within 180 days requiring the collection and dissemination of granular data on fixed, mobile, and satellite services, and related processes needed to build accurate broadband maps.

- Require the FCC to implement a user-friendly challenge process, open to the public, and other governmental entities.

- Include accountability, by requiring officer certifications of submissions.

- Direct the FCC to reform FCC Form 477 to achieve the purposes of this bill.

- Require the FCC to revise its rules in the future, to reflect changes in mapping-related technologies, so as to ensure the continuing accuracy of propagation maps mandated by this legislation.

All of these components are essential to a successful legislative effort, but none more important than standardizing cell edge probabilities and cell loading, so that what appears on the map more closely aligns with what people experience when they use their devices. To illustrate,

when you design a network with an 80 percent cell edge probability, you get a map that shows significantly larger geographic coverage than when you design it with a 90 percent cell edge probability, all else equal.

It is good policy to narrow the number of variables and establish parameters conservatively, because overstating coverage denies rural consumers investments flowing from universal service and other broadband programs, perhaps for a very long time. To provide some context, the FCC's one-time data collection used a cell edge probability of 80% and a cell loading factor of 30%. Consistent with how we engineer our networks, this bill would properly direct the use of 90% and 50%, respectively.

Experts have indicated that for a rural cell site, using 80% probability extends the cell radius by about 27% and increases the "covered" area by about 60%. This additional 60% could represent hundreds of square kilometers of additional "coverage" per site that is mostly insufficient to support reliable high-speed data and voice service. Put simply, designing at a higher level increases costs, but it also increases service quality. The bill's proposed cell edge probability and cell loading factors will result in significantly improved propagation maps that more closely resemble consumer experiences on the ground and result in acceptable service levels out at the cell edges.

In addition, by legislating more realistic mapping, Congress will significantly improve the challenge process. For U.S. Cellular, the Mobility Fund II challenge process was an all but impossible task. Those challenges are documented in a YouTube video available at https://youtu.be/L2rM7i3ivas. I've attached to my testimony a couple of examples demonstrating the abysmal results we found in Iowa and Oregon. We invested over $2 million in drive testing to challenge areas we believed to be incorrectly shown as served. We exhausted our budget and ran out of time, succeeding in testing only a small fraction of the areas we believed necessary. In discussing this with other CCA member carriers focused on serving rural areas, we believe this to have been a common experience. The collective time and money invested by the wireless community in the challenge process represent funds that could have been invested in much needed infrastructure.

We believe the primary reason for so many rural areas showing overstated coverage, making the challenge process unwieldy, was because the parameters established in the one-time data collection were too loose. For a challenge process to be effective, the areas of controversy should be small, so that the public's task to improve the final product with crowd sourced or other data is manageable, and people invested in the process believe filing a challenge to be worthwhile. We also believe the mapping parameters contained in the bill accomplish this, and will result in more accurate maps with far fewer areas where challenges need to be filed.

IV.   This is an Important Moment for Congress to Act.

Passage of H.R. 4229 would standardize the mapping process and result in an output that is usable by the FCC and other federal agencies, as well as by states looking to improve the targeting of their broadband program funds. In an ideal world, standardization of this sort would have been in place years ago, but it is not too late. There must be an urgency to get beyond where we are today, to a world where our federal government can confidently point to a map that, with reasonably accuracy, tells the public where broadband is, and where it is not.

We strongly believe that getting the mapping right is the biggest factor in determining whether the greatest possible number of rural consumers get access to high-quality mobile broadband or not. The FCC has properly noted, on multiple occasions, that it should not be investing universal service support in areas that already have unsubsidized service. Without high-quality maps, that's bound to happen. But what would be worse would be maps overstating coverage, causing citizens living in areas without coverage to be blocked from universal service or other federal and state broadband program investments for a decade or longer.

In short, we have to get this right because ten years of federal universal service funding are riding on this map. In the fixed broadband world, that's over $20 billion of taxpayer funds and in the mobile world it is $4.5 billion more. Every study indicates that it is going to take much more than $25 billion over ten years to achieve high-quality fixed and mobile broadband

throughout our nation, and that doesn't even begin to account for the costs of rolling out 5G. We can't afford to waste a dollar.

With respect to 5G, although it does not exist today in America's rural areas, over the next decade billions will be invested. The wireless industry needs to build towers, increase transport capacity, and upgrade switching and other facilities to deliver what Congress set as a goal in the 1996 Act – that rural citizens should have access to telecommunications and information services that are reasonably comparable in quality and in price to those available in urban areas (47 U.S.C. § 254(b)(3)). Accomplishing this goal will not be possible without a robust universal service fund mechanism that stands on a strong knowledge base – an accurate broadband map. That is what this bill can deliver.

This Committee should adopt H.R. 4229 quickly so we can get on with the task at hand. It is important to note that although this will help fix the maps, we have a larger task remaining before us.… that of filling in the maps. We look forward to working on that project next.

Thank you for the opportunity to testify today and for holding this vitally important hearing. I welcome any questions you may have.
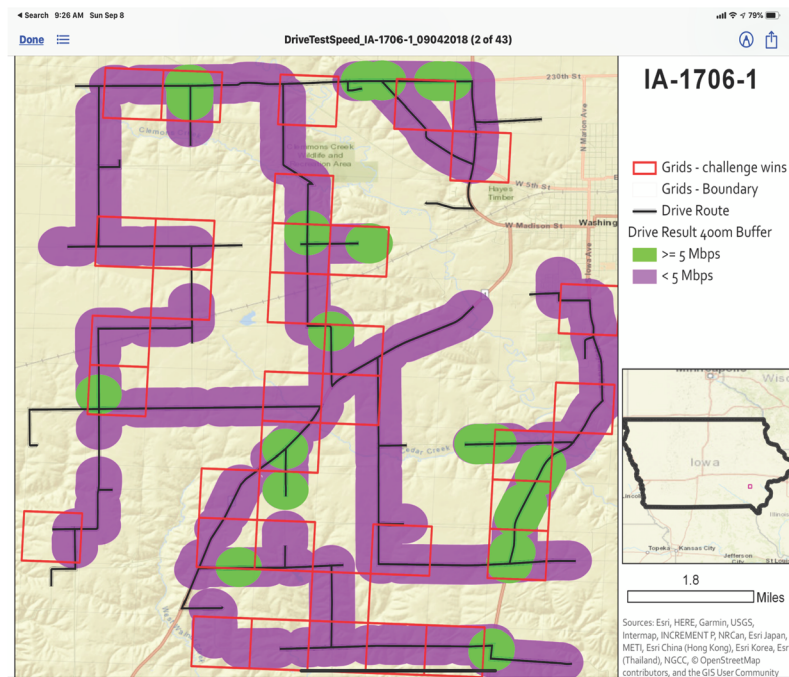
MF2 – Sample Drive Test Results

"This map depicts an area that one or more wireless carriers show to be "served" in the FCC's one-time data collection. U.S. Cellular's tests revealed that a download speed of 5 Mbps could not be achieved on the vast majority of roads driven, as shown in purple above."

"This map depicts an area that one or more wireless carriers show to be "served" in the FCC's one-time data collection. U.S. Cellular's tests revealed that a download speed of 5 Mbps could not be achieved on the vast majority of roads driven, as shown in purple above."

2
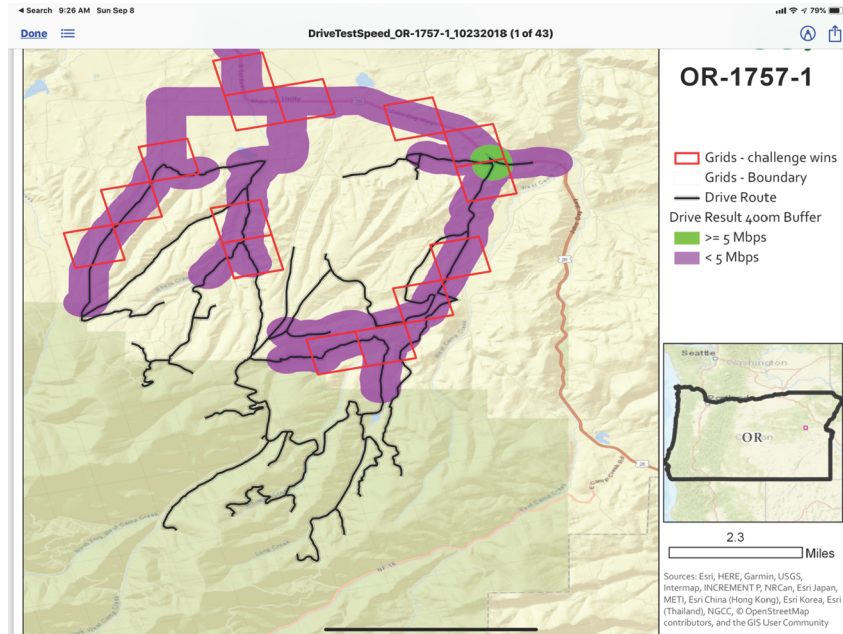
Mr. DOYLE. Thank you.

Ms. Floberg, you have 5 minutes.

STATEMENT OF DANA J. FLOBERG

Ms. FLOBERG. Chairman Doyle, Ranking Members Latta and Walden, and subcommittee members, thank you for inviting me to testify. I am here today representing Free Press Action, a nonpartisan nonprofit with 1.4 million members.

Every community deserves the benefits of a robust, affordable broadband connection and better broadband maps are part of getting there, yet they aren't all we need to close the digital divide. We support H.R. 4229, the Broadband DATA Act, and H.R. 4227, the MAPS Act, which improve the FCC's National Broadband Map and the underlying Form 477 data by making it more granular.

There are indeed opportunities to improve that data, though the existing errors on wired broadband may be significantly smaller than some stakeholders fear. In Virginia and Missouri, CostQuest pilot found that a few hundred thousand additional households might be unserved at what the FCC defines as broadband speed. If we extrapolate that nationwide that could mean potentially eight to nineteen million additional unserved people. That is certainly an issue worth fixing, but the number is far lower than some have speculated. Still there are some key areas where wired deployment data could be improved.

Mobile maps on the other hand seem to deserve all the criticism they get. Accurately assessing how a signal will propagate presents unique challenges that can lead to widely overstated wireless maps. We are optimistic about this legislation's proposals to improve the granularity and accuracy of both mobile and wired deployment data.

As we improve our broadband maps, however, we must not sacrifice transparency. Both Congress and the Commission have long recognized the value of ensuring public availability of not just our broadband maps but also the underlying data. Free Press and others have made extensive use of this data recently shining a light on massive overreporting by a single small ISP. This illustrates the value of keeping deployment information publicly available.

And for a new challenge process to have any true corrective power, outside parties must have access to this data. The Broadband DATA Act goes a long way towards this goal, though we would welcome amendments to clarify that deployment data should not be considered confidential.

But improving the accuracy of broadband deployment maps should not be the sole preoccupation of this subcommittee. At their best, maps are useful because they help us get where we are going. The National Broadband Map is meant to chart a course for policymakers to close the digital divide. Federal policy here has centered around people who can't subscribe to broadband because it is not available where they live. But the divide actually extends far beyond these completely unserved communities.

Millions more people live in an area where broadband at the FCC speed threshold is already deployed, yet they can't afford to subscribe. In fact, only 42 percent of households making less than $20,000 a year subscribe to wired home internet compared to 82

percent of households with incomes above $100,000. So even if these bills resulted in completely error-free maps and even if those maps enabled complete national broadband deployment, the digital divide would persist.

When it comes to broadband dreams, if you build it, they will come, just isn't true. It is more like if you build it, they will come, but only if they can afford to pay the price. When families are forced to forego necessities like diapers and food so they can afford to keep paying their internet bill, when students are forced to research and write essays on mobile phones because their parents can't afford a fixed connection, when the unemployed are forced to hunt for jobs without the aid of broadband because the price is just too high, we have an affordability problem.

Discrimination also plays a key role. At every income level, people of color are less likely to adopt broadband than their white counterparts. Taken together, there is strong evidence that lack of affordability, lack of competition, and racial discrimination are keeping people offline. Better maps will help target public investments to improve broadband deployment and that is good. But your unserved constituents can't use on-ramps to a digital superhighway they can't afford to ride.

That is why while we support the bills in today's hearing, we urge this subcommittee to see them as a stepping stone. Improving the National Broadband Map is valuable so long as policymakers stay true to the principle of ensuring publicly available deployment data and remember that the digital divide is much broader than maps or deployment alone.

Thank you.

[The prepared statement of Ms. Floberg follows:]

Written Testimony of

Dana J. Floberg
Policy Manager
Free Press and Free Press Action Fund

Before the

Congress of the United States
House of Representatives
Committee on Energy and Commerce
Subcommittee on Communications and Technology

Regarding

"Legislating to Connect America: Improving the Nation's Broadband Maps"

September 11, 2019

Chairman Doyle, Ranking Member Latta, Chairman Pallone, Ranking Member Walden and esteemed members of the subcommittee, thank you for inviting me to testify. I'm here today as Policy Manager for Free Press and Free Press Action, on behalf of our 1.4 million members in all fifty states, the District of Columbia and Puerto Rico. We agree that the time has come to close the digital divide so that all our communities may reap the benefits of a robust, affordable broadband connection to the internet. We support H.R. 4229, the Broadband DATA Act, introduced last week by Representatives Loebsack and Latta; and H.R. 4227, the MAPS Act, introduced at that same time by Representatives McEachin and Long. Yet we also note that the task of bridging the digital divide will require far more than improving the detail of our nation's broadband deployment maps.

Form 477 Data Is Not As Inaccurate As Many Fear, But Could Still Be Improved.

In an ongoing effort to promote universal broadband internet access service in this country, federal policymakers on both sides of the aisle have focused on potential errors and overstatements in the Federal Communications Commission's National Broadband Map and the underlying data collection for that map known as Form 477. There are indeed opportunities to improve the granularity and accuracy of the Commission's Form 477 data, though the issues may be significantly smaller than some stakeholders fear, at least with regards to fixed broadband deployment.

During the Broadband Mapping Consortium's pilot project managed by CostQuest Associates in Virginia and Missouri,[1] the creation of a broadband serviceable location fabric suggested that for these two states "38% of additional rural locations are unserved in census blocks

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[1] *See* Letter to Marlene H. Dortch, Secretary, Federal Communications Commision, from USTelecom, ITTA, and WISPA (together, the "Broadband Mapping Consortium") *Ex Parte*, WC Docket Nos. 19-195, 19-126, 11-10, 10-90 (filed Aug. 20, 2019); *see also* Broadband Mapping Initiative: Proof of Concept Report, submitted as an attachment thereto ("Proof of Concept Report").

that would have been reported as 'served' in today's FCC Form 477 reporting approach."[2] Though USTA did not disclose the total number of locations in their pilot, the FCC's Form 477 data projects that as of year-end 2017 there were a total of 6.31 million housing units (and 5.6 million households) in these two states combined.[3] Thus, the pilot suggests an error rate for the Form 477 data of approximately 7 percent.

However as the Consortium notes, not all ISPs participated in the pilot project.[4] What's more, the Census data showing 6.31 million total housing units in these two states does not include business locations, so the percentage of locations counted as served in Form 477 but not served according to the pilot may in fact be lower than what USTA reported. Regardless, the error rate is still significant, indicating (if that rate were to hold nationally) that there could be potentially 7 million additional unserved rural households nationwide currently not identified as unserved in the Form 477 data.[5] That is certainly an issue worth fixing, but the number is far fewer than some may expect.

It's worth clearing up any misunderstandings of what the Form 477 data is, and what it does and does not show. Certain parties have cited disparities between the Form 477 deployment data and those parties' studies on broadband speeds and performance, and wrongly concluded that

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[2] Proof of Concept Report at 3.

[3] We provide data on "households" and on "housing units" because the Census defines these two things differently and it is not clear which one the Consortium used as the denominator in the Proof of Concept Report. The FCC's block-level housing and population estimates also report a total of 1.87 million rural housing units (1.57 million rural households) in these two states combined, with 1.28 million rural housing units (1.1 million rural households) reported as being located in census blocks with one or more fixed terrestrial ISP offering a 25 Mbps/3 Mbps minimum service.

[4] Proof of Concept Report at 4.

[5] We note that this 7 million estimate nationwide is consistent with the Proof of Concept Report's finding that "as many as 38% of additional rural locations are unserved in census blocks that would have been reported as 'served' in today's FCC Form 477 reporting approach." *Id.* at 3. The total number of households located in rural census blocks is 25 million, with 18.5 million reported as served at 25 Mbps/3 Mbps in the most recent Form 477 deployment data. If an additional 38 percent of those 18.5 million are in fact unserved the total number of households reported as incorrectly served in Form 477 data would be approximately 14.8 million. This would correspond to approximately 12 percent of the U.S. population being unserved by a fixed terrestrial ISP offering 25 Mbps/3 Mbps service.

these disparities somehow "prove" there are massive overstatements and flaws in the Form 477 deployment data. In particular, Microsoft released a study suggesting that 162.8 million people do not use the internet at what the Federal Communications Commission typically considers "broadband speed," that is, 25 megabits per second ("Mbps") downstream and 3 Mbps upstream.[6] Microsoft concludes, somewhat incongruently, that while these results align well with the Commission's broadband subscription data, they somehow also indicate a dramatic overstatement of 25/3 Mbps broadband deployment within the Form 477 data. But this wrongly equates Microsoft's performance metrics with the Commission's deployment metrics.

The Microsoft study does not account for how many of its self-selected users may choose to subscribe to a slower speed tier, even when 25/3 Mbps speeds are deployed and available. Research indicates that many price-sensitive broadband subscribers will opt for slower speeds where those speeds come with a lower price tag. And the Commission's broadband subscription data for recent years backs this up, as Microsoft seems to concede, by illustrating that in 2017 some 29 percent of fixed terrestrial line subscriptions are for tiers offering less than 25/3 Mbps.[7] Furthermore, whether or not these connections are sold as being capable of 25/3 Mbps transmission speeds, there may be a variety of reasons that a specific test returns a result below that level, many of which (such as problems upstream from the ISP's network, or issues with the customer's WiFi router) are outside the ISP's control and do not indicate any deployment flaws. This kind of conflation of performance data and deployment data suggests a much larger problem than likely exists with current Form 477 deployment data and reporting requirements.

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[6] *See* Microsoft, "An Update on Connecting Rural America: The 2018 Microsoft Airband Initiative" (Dec. 2, 2018).
[7] *See* "Internet Access Services: Status as of December 31, 2017," Federal Communications Commission, Industry Analysis Division, Office of Economics & Analytics, at 26 (Aug. 2019).

Still, there are some key areas where collection of deployment data could be improved. Particularly in rural areas, reporting fixed broadband deployment by Census blocks can be too imprecise to efficiently and effectively target USF support and funds from other rural-focused deployment programs. Similarly, the Commission's current standard for determining deployment is too vague and lends itself to potential over-reporting by providers that insist they "could" deploy broadband to an area, "without an extraordinary commitment of resources." The Commission's deployment data should reflect reality instead. Limiting this over-broad concept of areas and households that could be served is a good idea. The Broadband DATA Act does this with its "standard broadband installation" definition in Section 2, counting only locations that could be served within ten business days. Another useful idea is instituting more granular reporting requirements, especially in rural areas where Census blocks can cover sprawling geographic areas improperly considered "served" in their entirety when only a portion of the block is served. Both steps would likely reduce overstatement in the fixed broadband deployment data, especially in rural areas.

Mobile broadband deployment maps are far more ripe for critique than the Commission's fixed broadband deployment data. There is likely an unacceptable level of overstated availability on wireless maps. This is largely a function of the inherent differences in determining where a mobile signal will be available versus where a wired line is buried or strung. Unlike wired deployment data, mobile deployment data is only 100 percent certain at the tower or small-cell level. Everywhere else it is a map of propagation probabilities. Accurately assessing how a signal will propagate from a tower or small cell presents a more challenging puzzle, as the results of the Mobility Fund Phase II ("MF-II") reverse auction suggest. Last December, the Commission launched an investigation "into whether one or more major carriers violated the MF-II auction's

mapping rules and submitted incorrect coverage maps."[8] That one or more "major" mobile carriers in a market with only four national carriers may have submitted incorrect maps illustrates the complexities in accurately defining mobile coverage. But there is simply no evidence that the same issues exist for fixed line deployment mapping data.

Fortunately, the Commission's pending rulemaking proposes to address all of the justified critiques in a way that will likely produce more accurate information. Additionally, we are optimistic about this legislation's proposal to improve granularity and accuracy by requiring the submission of service area polygons to be overlayed on a national Broadband Serviceable Location Fabric ("Fabric"), though we believe the precise methodology proposed here and the relationship between the carriers' inputs and the creation of the Fabric is worth further investigation. Lastly, we support the Broadband DATA Act's call for reporting additional "quality of service" metrics, and consider the current definition in that bill the minimum in terms of what would suffice in this regard. ISPs already do provide information on offered speed tiers – and in fact, they must do so if they are to demonstrate that they provide service that qualifies as "broadband" under the Commission's current speed threshold (or any threshold, for that matter). As indicated below, however, Congress and the Commission also need better data on broadband pricing, performance, and competition if they are truly intent on connecting people and bridging the entire digital divide rather than just addressing the mapping and deployment issues.

Better Maps Must Not and Need Not Sacrifice Public Transparency.

Importantly, any and all improvements to the Commission's deployment data collection process must not come at the cost of public transparency for the raw data, public usefulness of the data and maps, or comparability with historical 477 data. Both Congress and the Commission have

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[8] Press Release, Federal Communications Commission, "FCC Launches Investigation Into Potential Violations of Mobility Fund Phase II Mapping Rules" (Dec. 7, 2018).

long recognized the value of ensuring maximal transparency and public availability of the full

underlying deployment data sets. And Free Press (among others) has made extensive use of them.

Such uses include analysis of Form 477 deployment data to study the racial and economic

disparities in broadband deployment,[9] to evaluate the rhetoric around supposed changes in

deployment following the 2015 *Open Internet Order*,[10] and to shine a light on the recent case of

massive over-reporting by a small ISP called BarrierFree.[11] In December 2017, BarrierFree

mistakenly reported newly deploying service at fiber-to-the-home ("FTTH") speeds in every single

Census block in each of the eight states in which it claimed to have a footprint – an error that the

Commission failed to notice. BarrierFree's initial, massive overstatement saw it mistakenly

claiming to roll out new FTTH service to nearly 20 percent of the U.S. population in less than six

months time,[12] when in fact BarrierFree apparently serves a much smaller number of potential

customers in just New York State – not the 62 million in eight states its initial filing suggested.

While this example necessarily shows the potential fallibility of current 477 data collection

– or more to the point, flaws in its analysis by the Commission – it illustrates even more clearly

the value of making deployment data publicly available. The Commission can and should improve

quality controls for its analysis, but there will always remain a strong need for outside oversight.

If this legislation contemplates a challenge process with any true corrective power, people and

researchers conducting such outside oversight must be empowered with access to data. Attempts

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[9] *See* S. Derek Turner, Free Press, *Digital Denied: The Impact of Systemic Racial Discrimination on Home-Internet Adoption*, 105-119 (2016) ("*Digital Denied*").

[10] *See* Letter from Matthew F. Wood, Policy Director, Free Press, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 17-108, at 3 (filed Oct. 25, 2017); Reply Comments of Free Press, WC Docket No. 17-108 (filed Aug. 30, 2017); Comments of Free Press, WC Docket No. 17–108 (filed July 17, 2017) (utilizing extensive analysis of Form 477 data to demonstrate the deeply flawed underpinnings of the Commission's "harm to investment" claims).

[11] *See* Letter from S. Derek Turner, Research Director, Free Press, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 18-238, at 1, 3-5 (Mar. 5, 2019).

[12] *Id.* at 1.

to improve our national broadband maps must ensure that the basic data on where carriers offer service remains publicly available, in forms easily accessible by the public and by researchers. The language in the Broadband DATA Act at introduction, in Section 3(a) on the "dissemination of granular data" and then again in Section 3(c), goes a long way towards this goal, though we would welcome amendments to clarify that the appropriate "balances" described in the bill could not support treating deployment data (as opposed to subscription data) as confidential or proprietary.

It is also valuable to retain the ability for researchers to analyze the data at the Census block-level, even while improving granularity. Without preventing collection of more granular data, preserving the potential to aggregate such data and continue study of trends at the Census block-level will maintain comparability to an abundance of historical data. It will also continue to facilitate rich analysis by enabling the integration of deployment data sets with the wealth of granular demographic and economic information collected by the Census Bureau. Again, the Broadband DATA Act's command in Section 3 that the Fabric "be compatible with commonly used GIS software" should suffice to ensure this compatibility with Census block-level data.

The Commission has already taken some promising steps while respecting these principles of transparency and comparability in its most recent rulemaking, and this legislation promises to build on that progress – especially so long as it retains language like that in Section 3(b)(6)(A)(i) that directs the Commission to "reform" Form 477 "in a manner that enables the comparison of data and coverage maps produced before the implementation of this act with data and coverage maps produced after the implementation of this act."

Better Maps Are Only One Step Towards the Larger Goal of Closing the Digital Divide.

While these bills generally take good strides towards improving the granularity and accuracy of broadband deployment data, that alone should not be the goal or sole preoccupation of this subcommittee. At their best, maps are useful because they help us get where we're going. The National Broadband Map in particular is meant to chart a course for policymakers and stakeholders seeking to close the digital divide.

Perhaps the most frequently discussed aspect of the digital divide is the one that stands to benefit most from deployment mapping reforms: Communities and individuals who do not have the option to subscribe to broadband because it is not available where they live. Yet there is good reason to suspect that these completely unserved individuals make up a relatively small portion of the approximately 141 million people who do not subscribe to fixed home internet at the 25/3 Mbps speed threshold typically favored by the Commission. Data from the current Form 477 collection suggest that only 7 percent of people in the U.S. live in an area where no fixed broadband option is available at the 25/3 Mbps speed tier. While this proportion may in fact be larger, given the admitted potential for overstatement in the current deployment data collection process, as discussed above there is little to no evidence suggesting that any such overstatement in the number of served locations is enough to surpass the sizable 36 percent who reportedly <u>do</u> have access to 25/3 Mbps fixed broadband and either choose to subscribe to a slower tier or no service at all (see Figure 1 below).

Figure 1. Percentage of People Subscribing to Broadband by Level of Deployment
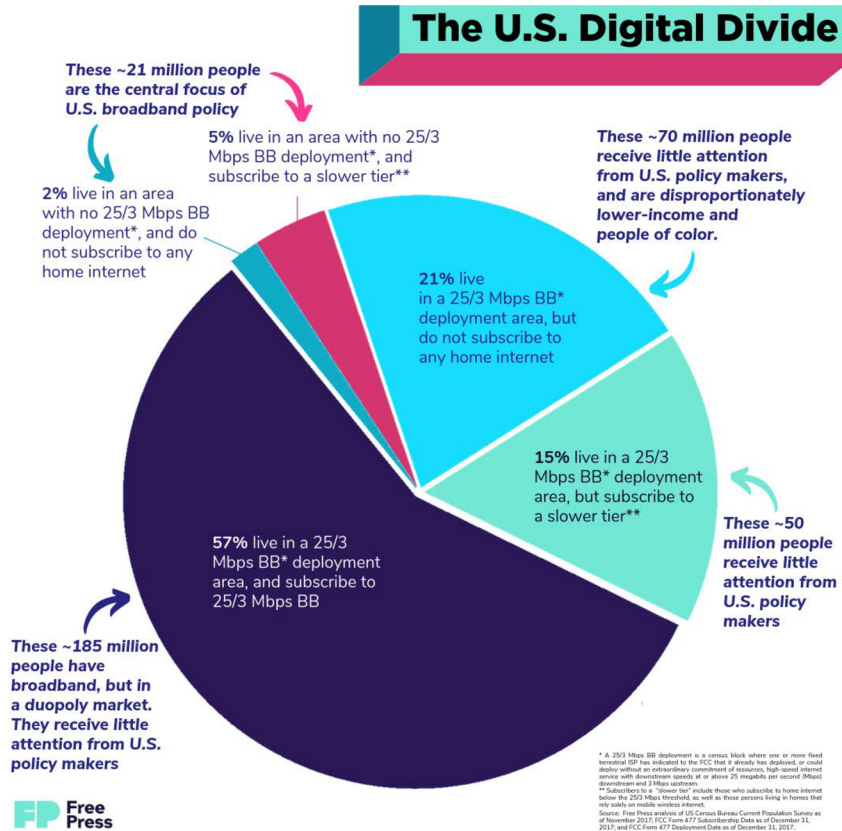
Regardless of the exact proportion, it is undeniable based on Form 477 data that at least 7 percent do not have 25/3 Mbps fixed broadband deployed where they live, and many of those are in more rural or insular areas. Much has been written about the economic and engineering challenges of offering broadband service in rural areas where the population is less dense, making the potential subscriber base smaller, and topographical features may present unique barriers to

deployment. Free Press research suggests that for some rural communities, getting broadband deployed may be even harder than it is for others. Our report *Digital Denied* found that members of marginalized racial and ethnic groups are more likely than their white counterparts to have no wired ISPs serving their homes, a disparity that is particularly acute in rural areas. While 20 percent of the rural white population has no available wired provider even at downstream speeds of just 3 Mbps, 32 percent of the rural Census-identified Hispanic population, 22 percent of the rural Black population, and 43 percent of rural American Indian/Alaska Natives are completely unserved by any wired ISP even at that relatively low speed.[13] At downstream speeds of 25 Mbps and higher, 40 percent of the rural white population is unserved by a wired provider, compared to 52 percent of the rural Hispanic population, 45 percent of the rural Black population, and 67 percent of the rural American Indian/Alaska Native population.[14] Such small but significant racial differences in rural deployment hold true even when we account for differences in income.[15]

Industry rightly views accurate and granular broadband maps as a tool for more efficiently targeting additional USF support, including Mobility Fund and Rural Digital Opportunity Fund spending, to these completely unserved communities. Accurate deployment data also serves as a way for policymakers to ensure that these efforts are not under-spending, over-spending, or misdirecting ratepayers' money to line the pockets of providers who are not actually equipped to deploy service in these areas. Yet improving our national broadband map is just a means to an end.

That end goal cannot simply be more deployment. If we are truly to close the digital divide, it must include more affordable and universal adoption. When it comes to broadband dreams, "If

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[13] *Digital Denied* at 109.
[14] *Id.*
[15] *Id.* at 119.

you build it, they will come" just isn't true. It would be more accurate to say, "If you build it, they will come…but only if they can afford to pay the price, or find some other way to get in the game."

Even if the bills under consideration here today and the Commission's actions implementing them resulted in completely perfect, error-free maps, and even if those maps enabled complete national broadband deployment, the digital divide would persist. It's extremely likely that even with new deployment filling any existing gaps, currently unserved and underserved communities in rural and urban areas alike would still face steep prices and other barriers to adopting. According to Free Press research, only 5 percent of non-adopters living outside of metropolitan areas cite lack of available service as a reason they do not subscribe to broadband.[16] The other 95 percent cite a host of other reasons, including high prices.

So we must solve the deployment gap, but we can't stop there. In reality the digital divide is broad and complex, and closing it necessarily involves addressing the complexities of promoting broadband affordability and competition. In addition to the millions of people living in the U.S. without access to 25/3 Mbps broadband deployment today, millions more live in an area where 25/3 Mbps broadband is deployed yet they can only afford a slower or less reliable connection. Perhaps tens of millions more can't afford any broadband subscription at all, even though they live in areas where 25/3 Mbps broadband speeds are indeed available.

And the majority of the population lives in an area where 25/3 Mbps broadband is deployed, and they do subscribe to a speed tier at least that fast, but they still have few choices and face high prices. Competition is particularly lacking in the wired home broadband market, where no robust resale market exists. This is in part why it is possible for households to subscribe to mobile wireless services for less than 10 dollars per month, but virtually no similarly-priced

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[16] *See* "Current Population Survey, November 2017, Computer and Internet Use File: Technical Documentation, CPS-15" (2017) ("November 2017 CPS").

option exists for wired home internet outside of discount programs only available to a limited selection of qualifying households. For example, in many markets Charter Communication's entry-level tier offers 200 Mbps downstream speeds for 70 dollars per month after introductory rates expire, a price that many low-income households will find out of their reach. Without resellers serving this overlooked section of the demand curve by offering lower rates for Charter's excess capacity, price-sensitive households have extremely limited choices if any for affordable wired broadband.

When families are forced to forgo other necessities like diapers and food so they can afford to keep paying their internet bill, when students are forced to research and write essays on mobile phones because their parents can't afford a fixed connection, when unemployed individuals are forced to hunt for jobs without the aid of broadband that's available right outside their door because the price is simply too high, we have an affordability problem.

Study after study has found that broadband adoption is closely correlated with income. As of year-end 2017, only 42 percent of households with annual family incomes below $20,000 had fixed wired home internet service, compared to 83 percent of households with incomes above $100,000.[17] Even among those with home internet, there is a strong relationship between income and the type of technology used. Internet-adopting households in the bottom-income quintile are more than 3 times as likely as those in the top quintile to live in a home with only mobile internet access.

Income inequality is not the only barrier to universal broadband adoption, however. People of color generally lag behind their white counterparts in terms of broadband adoption, with 84 percent of white people adopting home internet, compared to only 79 percent of Hispanic people,

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[17] November 2017 CPS.

76 percent of Black people, 70 percent of American Indian/Alaska Natives, and 81 percent of Native Hawaiian/Pacific Islanders.[18] While these racial disparities in broadband adoption can be partially explained by regrettable income inequality along racial lines, meaning that white people continue to have far higher median incomes than people of color, differences in income across race and ethnicity do not completely account for this divide. Even when Free Press accounted for income differences and a host of other demographic factors including age, job, and education, many racial and ethnic groups continue to lag behind white people in home-internet adoption.[19] Figure 2 below shows the persistent broadband adoption gaps based on income as well as race and ethnicity.

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[18] November 2017 CPS.
[19] *Digital Denied* at 4.

Figure 2. Home Internet Adoption by Householder's Race/Ethnicity and Family Income

Source: Free Press analysis of November 2017 U.S. Census Bureau Current Population Survey, Internet and Computer Use Supplement. Error bars represent 95 percent confidence interval calculated using successive difference replication standard error values. Differences between values for non-Hispanic Whites and other races/ethnicities are statistically significant at p<0.05 only for bottom income quintile and between Non-Hispanic White and Black householders in tht top income quintile. NOTE: Census Bureau urges caution when using answers for family income due to approximately 20 percent allocation rate.

Some observers have suggested that perhaps low-income communities and communities of color simply don't see the value of broadband – but this idea is as demeaning as it is inaccurate. Lower income quintiles are far more likely than higher income quintiles to cite their inability to afford broadband as a primary reason for not adopting, with nearly 25 percent of non-adopting households making less than $20,000 annually specifying lack of affordability as the most important reason.[20] Black and Hispanic households (at 29 percent and 26 percent respectively) are more likely than those in white households (19 percent) to say they would subscribe to broadband

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[20] November 2017 CPS.

if it were available at a lower price, and also to seek out broadband service outside the home, for example in libraries and community spaces.[21]

Taken together, there is strong evidence that lack of affordability, lack of competition, and racial discrimination (that manifests not only as income inequality, but in other types of systemic discrimination too such as credit scoring, housing, and employment) each contribute to the digital divide keeping people offline. Better maps will help policymakers more effectively target public investments to improve broadband deployment, and that is important, but even the best maps would be insufficient on their own to bridge this divide. Much has been said about the importance of getting the best data in order to solve the deployment problem, and rightly so – but the Commission currently collects virtually <u>zero</u> useful data regarding broadband prices or affordability. These are not separate problems. Your unserved constituents will not thank you if we merely build them on-ramps to a digital superhighway they can't afford to ride.

That is why, while we support the bills subject to today's hearing as far as they go, we urge the subcommittee to see them as a stepping stone. Improving the accuracy of broadband mapping is valuable so long as policymakers stay true to the principles of ensuring maximal public availability of deployment data, and remember that the divide is much broader than maps or deployment alone.

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[21] November 2017 CPS.

Mr. DOYLE. Thank you.

Mr. Spalter, you have 5 minutes.

STATEMENT OF JONATHAN SPALTER

Mr. SPALTER. Well, thank you, Chairman Doyle and Ranking Member Latta and other distinguished members of this committee. Thank you for the opportunity to appear before you on behalf of the members of USTelecom, large and small, who collectively invest— who have invested far more and for far longer than any other sector to connect rural America.

Today's hearing is appropriately focused on one of the most critical questions before our country: Will every person in this Nation have access to the foundation of the 21st century American dream? Bridging the digital divide is not a partisan issue, this is an American opportunity. And we are at a pivotal moment where we have the tools ready and the bipartisan will to ensure that we can identify and connect the unconnected quickly, efficiently, and accurately.

We convene today to focus on one of the biggest barriers to achieving our goal, the fact that our Nation still lacks a single map that can accurately identify every home and business that is currently unserved. If we can't see it, we can't fix it. And that is why USTelecom launched the Broadband Mapping Initiative and its proof of concept pilot program to show its costs and benefits. We all understand the severe limitations of the "one served, all served" census block approach that still guides Federal investments in achieving universal broadband service. In the past it did serve an important purpose helping public-private efforts increase rural connectivity by more than 70 percent in the last decade.

But we have reached a plateau. The good news is that with the advent of new data sources and processing capabilities and the bipartisan support here in Congress and at the FCC, we can now quickly and affordably account for every single served and unserved location in the Nation and deliver near 20/20 vision on the challenge before us.

Our mapping initiative brought together a diverse group of partners who stepped up to the plate to forge a lasting solution. We launched the pilot program in April. Our goal was focused to identify the precise number and location of every broadband serviceable location in the pilot States and demonstrate the ability to scale the approach nationally using modern data sources and with that foundation demonstrate how providers can report broadband availability on top of that foundational dataset, shapefile or otherwise.

It is now complete and the findings are crystal clear. Yes, we can quickly and affordably map the gap and with a degree of accuracy that makes the census block or shapefile only approaches look like Pin the Tail on the Donkey. Equally important, we can take this step concurrent with any new broadband support programs such as the FCC's potentially game-changing $20 billion Rural Digital Opportunity Fund, in a manner that need not delay; indeed, would likely accelerate our ability to finally and truly connect every part of our Nation.

This is a once-in-a-generation leap forward in identifying the availability of broadband. We conducted the pilot in Virginia and

Missouri. We are now happy to be working with the FCC and you to scale our approach nationwide, producing a visibility into our country that no regulator or provider has ever seen before. And our findings underscore the urgency of this work, identifying a margin of error as high as 38 percent under today's approaches. That is up to 445,000 homes marked served that could in fact be unserved in our two pilot States alone.

To argue that we need to choose between speed and allocating scarce Federal dollars based only on existing reporting approaches and accuracy in the form of better maps later is a false choice. Our pilot proves we can do both, be quick and be accurate. That is one of the reasons why USTelecom strongly supports the bipartisan Broadband DATA Act and the MAPS Act that mandates the proper ready-aim-fire sequencing of mapping the gap and then targeting finite Federal resources with a precision that has not been possible to date. Critically, the legislation wisely pairs more granular reporting on the one hand with more precise location identification to close the digital divide once and for all.

Today should be a galvanizing moment. A unifying and bipartisan sense of determination combined with innovative new data capabilities put victory at long last within reach. But as we approach the finish line, we cannot back down a single step on how we define the win. Creating a complete database of all broadband serviceable locations will provide policymakers a necessary picture of where scarce taxpayer dollars should be targeted and allow providers the best opportunity to invest those resources officially and with greatest impact increasing speed and minimizing waste. Most importantly, this new mapping approach directed in the legislation before us today will render visible and thus reachable the unseen and the unserved.

So thank you again for calling on us to raise our sights and raise the bar when it comes to connecting all Americans. I am really happy to take your questions.

[The prepared statement of Mr. Spalter follows:]
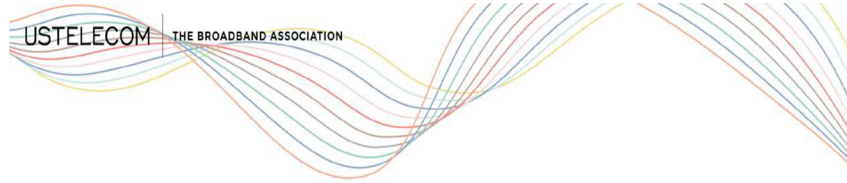
Testimony of Jonathan Spalter
President and CEO, USTelecom
before the House Energy & Commerce Committee's
Communication & Technology Subcommittee
"Legislating to Connect America: Improving the Nation's Broadband Maps"
September 11, 2019

Chairman Doyle, Ranking Member Latta, and distinguished Members of the Committee, thank you for the opportunity to testify at this important hearing. My name is Jonathan Spalter, and I am the President and CEO of USTelecom – The Broadband Association.

USTelecom proudly represents innovative broadband providers and suppliers connecting our families, communities and enterprises to the future. Our diverse membership ranges from large publicly traded global communications providers, manufacturers, and technology enterprises, to smaller companies, cooperatives and entrepreneurs–all providing advanced services to markets, urban, rural and everywhere in between.

Today's hearing presents a timely opportunity to discuss why accurate broadband mapping is integral to accelerating the deployment of broadband infrastructure to all Americans. Broadband service is no longer a luxury; it is an essential component of our national infrastructure and economic success, as well as the health, well-being, safety, and prosperity of every American. Ensuring that all communities are connected to broadband is a deeply shared, bipartisan American objective which is why the nation's broadband companies have invested $1.7 trillion of their own capital since 1996-$80 billion in 2018 alone–to upgrade and expand the nation's digital infrastructure. As a result, over the past decade, broadband access to rural homes has risen 71 percent.

This hearing also is timely in light of the Federal Communication Commission's (FCC) open rulemaking to reform the process it uses to collect data on broadband availability, and related proceedings underway, that will be critical to broadband deployment in rural America for at least the next decade, if not longer. One such rulemaking is focused on enhancing broadband availability reporting mechanisms by improving the Form 477 reporting requirements to make them more granular and efficient. Another proposes to allocate over $20 billion to connect the remaining Americans unserved by broadband over the next ten years. These rulemakings will significantly impact the future of connectivity and prosperity for rural communities in America.

USTelecom's members have enjoyed a strong partnership with government through the FCC's current Connect America Fund (CAF) programs which have helped deploy broadband to the nation's hardest to reach communities. Some of our members began working on CAF II in 2015 to bring broadband to over 3.6 million rural locations—or more than 9 million Americans over six years. As of March 1, 2019, these CAF II participants are in aggregate 10 percent ahead of schedule for deployment and, as a result, over 5.7 million more rural Americans have an on-ramp to the internet.

While significant progress is being made, millions still remain on the wrong side of the connectivity gap. For our part, USTelecom members have connected much of rural America for decades and

stand ready to work with you and our partners throughout government to once and for all close this gap.

Part of the challenge is that our nation lacks a comprehensive map indicating precisely where high-speed broadband service is available and, most importantly, where it is not. When it comes to broadband, "if you can't map it, you can't deploy to it." If our aim is to leave no American behind, then the tools and instruments we use—in both the public and private sector—must be capable of accurately pinpointing where we need to focus our efforts. That is why USTelecom and our partners developed, and recently completed, the Broadband Mapping Initiative pilot.

I am pleased to report to you today that based on the results of this pilot, we now know without any doubt that our shared goal of deploying a fully national, verifiable, transparent, granular and accurate map of America's broadband availability is not only achievable–it can be done quickly and cost-efficiently, concurrent with any new broadband programs currently being contemplated by the federal government.

Why a New Broadband Map?

Until recently, the FCC collected deployment data from broadband providers by census block via its Form 477. Unfortunately, location data on homes and businesses are not accurately reflected by census block or other available data. Furthermore, if a provider is able to serve a single location in a census block, then the FCC considers every location in that block "served." This creates an overstatement of served locations and helps contribute to the rural broadband gap. In some cases, only a fraction of locations in the block can access broadband services. This issue is particularly acute in rural areas where census blocks are far larger than their urban and suburban counterparts and where data sources are lacking. The "one-served-all-served" reporting is simply not a reliable tool to accurately understand broadband availability, nor is it a viable approach to identify where scarce federal support for broadband deployment should be allocated. In fairness to the FCC, the Form 477, initially established nearly 20 years ago, was not designed with this objective in mind. Fortunately, the FCC recently launched a program to require more granular broadband reporting through its Digital Opportunity Data Collection. The National Telecommunications and Information Administration (NTIA) also has launched a multi-state pilot to improve broadband mapping.

What is needed is not just more granular reporting, but also reliable information about how many homes and business have yet to be served. Creating a granular database of all broadband serviceable locations will provide policy makers a more accurate picture of where scarce government support should be targeted and allow providers the opportunity to invest those resources with specificity.

Broadband Mapping Initiative Pilot

There is widespread agreement that policymakers need better and more granular information about areas without broadband before they can design efficient funding programs to address the problem, avoid overbuilding, and track progress. The growing use of competitive reverse auctions to distribute broadband funding puts an even higher premium on having the best possible data available for the areas up for bid. While successful, some USTelecom members' firsthand experiences with CAF was the impetus for working together to find an improved solution for obtaining more granular mapping data.

After working with innovative broadband companies and associations across the country, having discussions with Congress and other key federal and state-level government stakeholders, USTelecom launched the Broadband Mapping Initiative pilot to quite literally "map the gap" in broadband availability in the United States. In conjunction with our partners at ITTA and the Wireless Internet Service Providers Association, our pilot involved multiple companies of different sizes and technology types, including AT&T, CenturyLink, Chariton Valley, Consolidated, Frontier, RiverStreet, TDS, Verizon, and Windstream among others. Our mission was to create a consistent national dataset with the specificity policymakers and consumers have been demanding.

Our goal was to harness the most effective *new* technologies, mapping methodologies, and newly available datasets to identify all broadband serviceable locations using a single methodology and provide a harmonized reference point for broadband reporting. This had to be done quickly, efficiently, and in the most cost-effective manner. Once we started this endeavor, we realized that by using a combination of new technologies, we could produce a granular view of broadband serviceable structures that had not previously been available to any entity or agency trying to produce a coverage map of broadband access. We were confident this project would be a truly unique and eye-opening approach to identifying locations and providing the underlying dataset, on top of which providers would report.

We succeeded. Working in Missouri and Virginia with our vendor CostQuest, within a four-month period we developed a comprehensive database of all broadband serviceable locations—and a roadmap for a collaborative government-led effort to expand the system nationwide. We were able to utilize new digital resources (both open source and proprietary), including satellite imagery and digitized parcel and land attribute data. These datasets were combined and organized by conforming addresses, removing duplicates, and using managed crowdsourcing to review records for accuracy.

The results of the project reveal pockets of unserved locations that previous efforts failed to identify. Currently used estimates of census location counts are incorrect 48% of the time, with those inconsistencies both over and under inclusive. One factor for the omissions can be attributed to existing discrepancies in the reported location and the actual location of serviceable structures. In fact, in Missouri and Virginia, 61 percent of the locations were off by 7.5 meters, and an additional 25 percent were off by over 100 meters. At first glance this may not seem critical, but the project also found 23 percent of the locations that were off by 100 meters were placed in the wrong census block. This is extremely important as one misidentified location can leave an entire census block ineligible for funding.

We now have irrefutable evidence that this mapping methodology is scalable and achievable in a timely and cost-effective manner nationwide. We are ready to hand it off to our government partners to ensure agencies, policymakers and providers are empowered with the specific data needed to connect our entire nation to the power and promise of broadband. With this data, every single dollar of federal broadband support can be accurately targeted and effectively deployed to close any remaining coverage gaps. We believe a broadband serviceable location fabric like the one we created in Missouri and Virginia can underpin a contemporary, tailored and updatable broadband map that can serve as the foundation for all future broadband spending decisions that pinpoint the unserved.

For instance, the location fabric can be the foundational mapping tool for the FCC as it undertakes a rulemaking to develop the next phase of Universal Service Fund support, called the Rural Digital Opportunities Fund (RDOF). We are pleased to see the FCC has proposed adopting a broadband-

serviceable location tool as part of its Digital Opportunity Data Collection and we look forward to working with it as well to see that become a reality. If Congress or the FCC acts expeditiously, the nationwide location fabric data can be readily available as a resource to government policy makers and the carriers seeking to bid in the RDOF auctions. Together, we can ensure no unserved American community, family, or enterprise will be left out of new broadband support programs because of misguided reliance on mapping methodologies-and reporting processes-that are insufficiently granular and accurate in pinpointing where broadband is available, and where it is not.

Congressional Action

USTelecom and our members are pleased Congress is demonstrating a committed interest in the importance of creating a nationwide broadband map. The legislation before us today proves the desire to solve this problem is as bipartisan as it is significant. Multiple Members of Congress have introduced various legislative proposals aimed at producing meaningful improvements to information collected by government agencies and how that information is applied to spur deployment and achieve real results.

We are most supportive and enthused by the principles contained within the bipartisan H.R. 4229 "Broadband DATA Act" and H.R. 4227 MAPS Act. Together, they would wisely combine multiple datasets to produce a granular-level fabric of data that can be used to pinpoint the location of the unserved. Thank you Congressmen Loebsack, Latta, McEachin and Long for introducing such assertive and thorough pieces of legislation that give clear and concise direction to the FCC. We urge the Committee to pass this legislation and for all of Congress to see that this legislation becomes law expeditiously so this data is available not only for government agencies and providers to make informed decisions, but to benefit the consumers and communities we all serve.

The opportunities associated with accelerating rural broadband connectivity require an enduring public private partnership. USTelecom and its member companies stand ready to work with this Committee, Congress, the FCC and the Administration to improve broadband mapping, a critical step toward closing the digital divide, and ensuring all Americans have the opportunity to fully benefit from our nation's continuing global digital leadership.

Thank you again for this opportunity.

Mr. DOYLE. Thank you very much.

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

STATEMENT OF JAMES W. STEGEMAN

Mr. STEGEMAN. Thank you. Good morning, Chairman Doyle, Ranking Member Latta, and members of the subcommittee. My name is James Stegeman. I am president of CostQuest Associates, and it is an honor to be here again to discuss the status of broadband in this country.

For the last 20 years, CostQuest has taken pride in empowering the public and private sector with the ability to make data-driven decisions with their most critical resources and we seek to do the same for broadband mapping. While CostQuest is known for its cost expertise, the integration of geospatial design and data forms the underpinning of all our studies, analysis, and models. As for my own experience, I am a statistician by trade. And as Hal Varian, chief economist at Google said in 2009, the sexy job in 10 years will be statisticians. As you listen to my testimony today, 2019, I will let you decide if Hal was right. Now let me jump to the heart of my testimony.

A coalition of leading broadband innovators launched the Broadband Mapping Initiative in April of 2019 to demonstrate the feasibility of identifying the precise number and locations of structures that require broadband access in Missouri and Virginia. The resulting dataset known as the Broadband Serviceable Location Fabric makes it possible to precisely map and understand where broadband is available and more importantly where it isn't.

Let me first walk through what the fabric represents. The fabric is based upon parcel data, tax assessor data, building polygons, addresses, and roads. Combined through our unique geospatial process, we were able to identify the broadband serviceable location on the vast majority of parcels. Where the data were inconclusive, we sent records, 140,000 in total, out to our partner firm at CrowdReason who managed a visual review using a crowd labor pool.

Now, let me share some of our key findings. First, the pilot was a success. Developing the fabric for two States showed it can be done for the entire country.

Second, we can identify the unserved. For rural census blocks in Missouri and Virginia that are considered served by the current 477 guidelines, we found that 38 percent of those locations were not reported as served by the carriers in the study. This amounts to 445,000 homes and businesses.

Third, we found that location counts differ. The fabric revealed that 48 percent of the location counts in rural census blocks are different from current estimates used by the FCC. This is meaningful when assessing the scope of the unserved problem, determining build-out requirements, and ultimately how much budget is needed to remedy.

Fourth, we found that the current datasets conflict with the fabric. In our pilot, census blocks identified for an address were different 28 percent of the time when comparing the provider submitted location versus the fabric location. Under today's 477, this could impact which census blocks are reported. And, finally, report-

ing is enhanced. Regardless of how the new FCC coverage reporting format is set up, the quality and validity of the reporting will be improved using location-specific data.

Now let me show you some slides of what the fabric reveals.

[Slides shown.]

In image 1, shown on the screen, I highlight what are current 477-based understanding of broadband coverage would look like in ten populated census blocks in rural Missouri. Using the pilot's providers data, all the census blocks shaded in blue would be reported as served. This is the extent of our knowledge today. Nothing more, nothing less. We do not know if all customers in the census blocks are served or if it is only one.

In image 2, I demonstrate what polygons might look like under the FCC's proposed coverage efforts where carriers will file polygons that represent where they provide service. In this image, my team created hypothetical polygons, the light-blue bounded areas, based on carrier-provided latitude and longitude coordinates. This is one approach to polygon creation. There are others, some of which can be found in Appendix D of my testimony.

In image 3, using the fabric I am now able to reveal within these ten census blocks the extent of served locations, the green dots and, more importantly, the unserved locations, the red dots. Of all the benefits of the fabric, to me this most clearly demonstrates why the fabric is needed. Specifically, polygon reported, as I showed in the previous image, will only improve our knowledge of what the served areas look like. The fabric is needed to then provide knowledge of the unserved locations.

In regard to next steps, can this fabric be generated nationally? Unequivocally, yes. How much time will it take? We estimate that, starting from where the pilot left off, it should take no more than 5 to 8 months to stand up an initial national fabric for testing, and 12 to 15 months to fully complete. And what will it cost? I estimate the initial cost to be between 8½ and 11 million dollars for a restricted-use dataset.

That concludes my testimony. Thank you for your time. And I would encourage you to see more in my written testimony for additional details.[1]

Mr. DOYLE. Thank you very much. That concluded our openings. We are now going to move to Member questions. Each Member will have 5 minutes to ask questions of our witnesses, and I will start by recognizing myself for 5 minutes.

So, Ms. Floberg, tell me why is it so important that broadband coverage data be accessible to the public and be challengeable by third parties such as your organization?

Ms. FLOBERG. Thank you, Mr. Chairman.

I think that we have seen and we have heard today a lot about the importance of ensuring that there is a check on whatever mapping system we implement, some ability for the public, for researchers to be able to look at the underlying data and say this reflects reality or this does not reflect reality. This is something that Free Press has done even very recently.

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[1] Mr. Stegeman's prepared statement and additional material submitted for the record have been retained in committee files and also are available at https://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=109914.

We found an error in the FCC's Form 477 data where small ISP called BarrierFree had mistakenly reported serving 20 percent of the U.S. population with fiber to the home speeds in less than 6 months' time. In reality, they served a much, much smaller percentage of the population and that error actually threw off the FCC's entire analysis of how much broadband had been deployed, how much fiber had been deployed in that past 6 months.

So making sure that that data is available for organizations such as Free Press, but also for members of the public to say the map says I am served by this many providers; that I am served by these speed tiers and I am not, is really, really important.

Mr. DOYLE. Thank you.

Mr. Stegeman, it is very interesting testimony. We know the FCC currently has about $20 billion for Universal Service programs that has not been awarded and then it is going to be used to fund a broadband buildout over the next 10 years. So let me— I don't know if it is possible, but you were able to do pilots on two States, Virginia and Missouri. And it may be a reach, but if you extrapolated your findings in those two States to the rest of the country, who across the country would be left behind if the FCC didn't look before it leaped over the next 10 years of broadband deployment?

Mr. STEGEMAN. Thank you for that question. In our study in Missouri and Virginia, we were able to unveil or reveal that there are unserved locations in what people considered served census blocks before. We were also able to identify that if carriers use address tools to identify which census blocks the report has served, those census blocks may be incorrect that they identify.

So what we found in the study is that there is an underreporting of the unserved issue in the country, and there are many studies out there. I think Dr. George Ford put out a study that I think he estimated the unserved at potentially four million. We have seen estimates as high as in the ten millions. It is hard for me to project forward for the Nation, but I know it is in the millions. I just don't know the exact count at this time.

Mr. DOYLE. Thank you very much. You know, there has been a lot of discussion about how overstated and unreliable coverage maps hurt rural areas, but I don't have to drive very far outside of Pittsburgh before I experience dead zones and despite the map saying that I am covered.

Mr. Spellmeyer, how does this issue affect consumers in urban and suburban areas as well as rural areas?

Mr. SPELLMEYER. Well, Mr. Chairman, it is certainly an issue, I think, for all Americans. You know, you can get in your car right here and drive 5 miles to the Potomac River, and there are some areas along there that you don't want to end up in trouble because there is no cell phone coverage and you can't stop to figure out, oh gee, which carrier's phone do I need to take along on my trip to Rock Creek Park.

So we have got to fix it. I traveled down Highway 1 in California this year. I was shocked to see the expansive stretches where there is no coverage. The same thing is true—I have been to Weston, Oregon, that Chairman Walden mentioned earlier. We have got to fix

it both for the people in the rural areas and the people that get in their car and drive 10 miles.

Mr. DOYLE. Yes, thank you very much. Boy, I will tell you we have been talking about this issue for as long as I can remember. Ms. Eshoo told me we have been talking about this since they made the very first maps when the Earth was flat. And it seems to me that we have got to get moving on this. I want to thank you all for your questions, your testimony.

So the Chair is now going to recognize Mr. Latta, the subcommittee ranking member for 5 minutes to ask questions.

Mr. LATTA. Well, thank you, Mr. Chairman. And thank you very much to our witnesses. And that is a long time for those maps, but that is why we are here today and, really, we thank you all for your testimony.

Mr. Spalter, if I could start with you. USTelecom's fabric building pilot appears to have been a productive start to identify which locations in rural areas need broadband and show gaps in the current data collection process. Building on that experience, I want to focus on where the rubber meets the road.

Would you walk us through the expected timeline under your proposal from updating the collection of data for the broadband map to actually using the data to more accurately guide the Universal Service funding?

Mr. SPALTER. Thanks for that great question. As Mr. Stegeman pointed out, it is possible to have a fully nationally realized, scalable, universal, harmonized, deduplicated map in 12 to 15 months. His estimates, and I think they are accurate in his project management capacity, that we can actually even deploy maps sooner than that, that will be scalable and usable.

The important point, Congressman, is that once we actually can put pen down on this map and we can do it quickly, that can become the basis for guiding any new dollars going out the door for any broadband support program, including the Rural Digital Opportunity Fund, to ensure that every taxpayer dollar is being used to its best and highest purpose as accurately as possible to reach the truly unserved in this country. This is attainable and we can do it.

Mr. LATTA. Thank you.

If I could follow up, Mr. Assey, if I could ask you, when it comes to the actual data used to create the map, how helpful are the quality of service metrics in shaping our picture of broadband availability driving the funding decisions these maps are designed to determine?

Mr. ASSEY. Congressman, thank you for the question. The broadband map is a map that reflects coverage, so it is really aimed at focusing where networks are and where they are not. The quality of service, really, I think only relates to the speed tiers and the data requests that the FCC makes, so it is really kind of a separate issue. And one of the reasons we are so focused on the shapefile portion of improving the map is because we believe that will offer the quickest improvement on a national scale in the quickest amount of time.

Mr. LATTA. Thank you.

Mr. Spellmeyer, how can Congress ensure that there is a meaningful challenge process to validate data while also protecting the proprietary data that providers and third-party vendors and consumers may supply through a commission-developed process to inform on the map?

Mr. SPELLMEYER. Congressman, your legislation and much of the legislation in front of us today outlines some stronger parameters for how the FCC would run a challenge process at least on the wireless side. We think that is needed.

In terms of confidentiality of data, there are certain inputs to a wireless map that may be confidential, but beyond that I believe it is actually important that the public see the map and understand what the maps look like. One of the biggest mistakes the FCC made last time was not to allow the American public to participate in the challenge process. This legislation gets that right, but it is really hard for a consumer to go out and participate in the challenge process if they don't understand who is claiming coverage where.

So I think it is essential that we make sure that that information gets out to the public while protecting—there are certain proprietary inputs like the, you know, the height on a tower where someone has got a particular antenna that you might want to keep confidential, but beyond that the rest of it should come forward.

Mr. LATTA. OK, thank you.

Mr. Assey, how do shapefiles from different providers factor into this endeavor and what is the benefit?

Mr. ASSEY. Well, the benefit is, you know, we are currently living with a system that is not based upon how providers actually build their networks. We are essentially retrofitting data into a census block map. Shapefiles will allow providers to actually draw the shape and the contours of where they offer service.

And whether or not you are a cable provider or a fixed wireless provider or a telco, you will be able to provide that data and essentially layer it on top of the national map so that we can actually identify in a more granular way those places that are being served with broadband today and we can, more importantly, identify those places that are yet to get service.

Mr. LATTA. Well, thank you very much.

Mr. Chairman, thanks very much for today's hearing, thanks to our witnesses, and I yield back.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. McNerney for 5 minutes.

Mr. MCNERNEY. Well, I thank the chairman and I thank the witnesses. Very informative, kind of exciting testimony this morning, so I am looking forward to seeing progress on this issue. In my district I know there are wide areas that are—we just don't have enough data to know if people are being served and in fact I know people that aren't served, so this is an important issue.

Ms. Bloomfield, in your testimony you discussed the importance of the challenge process and crowdsourcing, I am kind of following up on Mr. Latta. Could you tell us more about how these methods will help obtain reliable results? Just explain the process a little bit.

Ms. BLOOMFIELD. Sure, absolutely, and I appreciate the question. So, you know, with the better mapping, you know, if you start with the shapefiles that the FCC has talked about, you will start to get more granular data so we will be able to start to see a better picture. But remembering it is still self-reported, you know, so how do you make sure that you are validating what people are reporting?

So if a carrier is reporting something, what we want to know is on the ground that is what is really happening. So that is the advantage of things like crowdsourcing where you can basically allow consumers on the ground to get some feedback and say yes, we are seeing this or we are not seeing this. The one thing I could caution again is, you know, if you asked me today what speed I am getting at my house, I am not sure I could give you the answer.

So I think it is the ability to whoever is handling that information to see what trends, where are you seeing spaces really bright up that there clearly are problems, there clearly are issues. So again, it is that ability to take that accuracy and make sure that we can also be granular at the same time.

Mr. MCNERNEY. Thank you.

Ms. Floberg, in your testimony you raise the issue of compatibility with historical 477 data. Can you elaborate on that and its importance? Do you have any recommendations that would follow?

Ms. FLOBERG. Sure. Thank you so much for that question. We do believe that it is really important to make sure that even as we make the maps more granular and more accurate that we preserve the ability to compare new deployment data to the old deployment data so that we can see trends where they are happening. This also gives us the opportunity to compare deployment data with granular data from the Census Bureau about demographics to figure out who is being served and who isn't being served.

So maintaining some ability to not just have this granular data about who is unserved, but to still be able to aggregate that to the census block level will preserve an abundance of rich analysis that we can move forward with. I think the Broadband DATA Act does have some great language about that about ensuring backwards compatibility, so really it just comes down to making sure that that data is available to the public and available in a way that it is easy to make those comparisons and do that analysis.

Mr. MCNERNEY. Is there also a thing about how trends, what the trends are, or is that like too far in the future for now what the trends in terms of coverage is?

Ms. FLOBERG. I think that definitely maintaining that compatibility is how we would be able to see trends. It would also be a way to see how these new more granular sets of data have potentially improved, how we keep track of who is unserved and who isn't. It would give us, I think, the ability to see much better trends in deployment as we move forward with better maps.

Mr. MCNERNEY. Thank you.

Mr. Stegeman, we have heard about the importance of making broadband mapping data publicly available. I want to make sure that the data being collected will also be accessible and usable by households, small businesses, and local governments across my district in particular. Do you foresee any challenges in making that possible?

Mr. STEGEMAN. There are challenges in creating the fabric dataset. If we go a proprietary route we can get to the answer, but quicker with less money because the data quality is better. The proprietary route doesn't mean it is not viewable by the public. What the proprietary data means is it is restricted in use that someone cannot download the entire country of all the data. They can't download full States, but it is usable by companies, by the public to do that.

The alternative route is to use kind of an open dataset, open source datasets that are out there that we can initiate the process. We actually did that in Missouri to see how well it would work. It will work, but it will require additional visual verification because the records will not match in sync as well as the proprietary data. That public, open dataset can be released and used by the public the same as the proprietary but it would have less restrictions on use.

Mr. MCNERNEY. Well, I just—I am going to have to close here or I am going to be gaveled out.

But, Mr. Stegeman and Mr. Spalter, you made it sound like creating these maps as accurate, granular, and with low latency is something that we can actually achieve in a fairly short time, so I hope you are right.

Mr. SPALTER. I am confident that we are.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes my friend, Mr. Olson, for 5 minutes.

Mr. OLSON. I thank the chair and welcome our six witnesses. I would like to start out with a point of personal privilege. Everybody here that September 11th is not just a day to remember what happened 18 years ago in New York, in DC, and Pennsylvania; 7 years ago in Benghazi, four Americans were killed, Ambassador Smith and three others, they were overrun by terrorists. So, please, later today, pray for their lives as well as lives that were lost here, in New York, and Pennsylvania on 9/11.

Now I got to open by saying Texas 22 is a big suburb. We have a lot of broadband access; that is not our problem. But my State is huge, and Texas has some real issues that you guys have brought up. For example, Mr. Hurd is not here, Will Hurd, but he has one county called Loving County, has one small town, population of 134 people. I guarantee you if one person on that map has access or reports access, the whole city has access and that is just not true.

So my questions come from my role as the cochair of the House Artificial Intelligence Caucus, the AI Caucus. I am a cochair with Dr. McNerney over there. And Form 477, the primary source the FCC uses to assess access for broadband, et cetera, et cetera, has some real problems that you all brought up today. I mean there are false positives, coverage when there is not coverage, the maps, et cetera, et cetera.

I would like to ask you all to put on your thinking caps and put on that AI cap. How can AI help resolve these problems you have going forward?

Ms. Bloomfield, you are up first, ma'am. Any ideas?

Ms. BLOOMFIELD. I knew that was going to be the downside of sitting here, right?

So I think, you know, when you think about AI and you think about applications, for example, I have a company down on the border of Mexico that is in Texas that actually uses a lot of AI and drone technology to do border security. So thinking about, you know, first of all, you have to have the access and then you have got to think about what are the applications that you can enable particularly in an area where you have got a wide swath of land.

So I think there is—I think we are just starting to explore. Thankfully, this isn't a privacy hearing, but I think there are a lot of different applications. But first, you have to have the connectivity to be enable the cool things that you want to be able to do.

Mr. OLSON. Thank you.

Mr. Assey?

Mr. ASSEY. Yes, Congressman. I think technology, whether it is AI or other technology, certainly plays a large role in helping us fill the gaps and provide service to unserved America whether that is through the technology that cable companies offer or the technology that other broadband providers offer. But first thing we have to do is really get that accurate picture of what we are up against and what the challenges of geography and low density are providing.

Mr. OLSON. I think AI can help with that.

And, Mr. Spellmeyer, for the mobile phones, how about AI?

Mr. SPELLMEYER. Well, Congressman, I am no artificial intelligence expert, but—and I don't know that we need to get to artificial intelligence. But as I sit here reflecting on the wireless side, I think there are already several players out there in the ecosystem that have an awful lot of data, actually, about coverage and those companies that come to mind are Apple and Google. They track a significant amount that goes on up and down on every handset, every day. They know that I am sitting here on the third floor of the Rayburn Building right now. And we should try to find ways to leverage that down the road to improve coverage data.

Mr. OLSON. Thank you.

Ms. Floberg?

Ms. FLOBERG. I don't think we can suggest any particular AI applications, but I do think that making sure that the underlying deployment data is publicly available will make sure that others can think of what those innovative ideas might be.

Mr. OLSON. Perfect. Thank you.

Mr. Spalter?

Mr. SPALTER. One of the critical issues about the deployment of AI in the future is that it will be enabled and enhanced and turbocharged when we actually can deploy nationally 5G technologies. And for too long, 5G technologies have been considered to be the province only of our urban and suburban residents and enterprises.

If we can map broadband accurately, granularly, with the process and methodology we are suggesting, pinpointing where there is, in fact, unserved locations and couple that with other reporting technologies and provide that to programs like the Rural Digital Opportunity Fund, that will mean we will be able to pull fiber to places like your communities in Mr. Hurd's district and your district that

then can use fiber-enabled resources to empower rural communities from benefiting from 5G, and with 5G use the cloud scale algorithms, machine learning, and other data processes that are enabled and will enable artificial intelligence applications for health care, for education, from advanced manufacturing, for all kinds of things.

But we have to start with accurate mapping and that is why we have stood up our pilot program and wanted to be integrated into the Rural Digital Opportunity Fund.

Mr. OLSON. Thank you.

Mr. Stegeman?

Mr. STEGEMAN. Yes, I am excited to say that we actually use machine learning and artificial intelligence on the fabric. If you think about it, we will have over a terabyte worth of data, 170 million building locations, 150 million parcels and trying to weed through that information intelligently it will be a struggle. And we have incorporated machine learning and other efforts to actually be able to do that successfully.

Mr. OLSON. And that is why I saved you for last.

Mr. Chairman, I yield back.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes the chairman of the full committee, Mr. Pallone, for 5 minutes.

Mr. PALLONE. Thank you, Chairman Doyle.

Since Superstorm Sandy ravaged my district, I have been very focused on network resiliency. And I know there are so many uses for granular broadband data, but building a national location fabric could be quite helpful in disaster response.

Mr. Floberg, what do you think about that if I could ask you? Ms. Floberg, I am sorry.

Ms. FLOBERG. That is quite all right. I think that there is definitely potential here. The kind of fabric that we have heard CostQuest and others describe could potentially be very useful for making sure that we have the best and most accurate data about when there are these outages in response to natural disasters; where people are experiencing those outages; where folks are who might need help; who might need resources directed by our disaster response.

How we do that and how we ensure that we get the appropriate data from carriers about where those outages are and where there are problems with network resiliency that need to be resolved, I think, is an open question, but we can certainly see the potential in having that kind of granular data about where folks are who are going to need assistance.

Mr. PALLONE. Thank you.

And, Mr. Spellmeyer, do you think better wireless maps will be useful for public safety in the wake of disasters?

Mr. SPELLMEYER. I do, Mr. Chairman. Without that information you are flying blind. The wireless industry works pretty hard in advance of and during disasters to try to stay on top of outages and to communicate with public safety. And we have made that as an industry an even greater priority since Hurricane Sandy, thanks to your leadership.

You know, we know instantly because of remote monitoring when a cell tower goes down. And if we are in a hurricane situation, we have an obligation to report that to the FCC that same day. And we do that and we try to regularly communicate with public safety to leverage that information, but certainly continuing to improve these maps and to make sure that everybody understands who claims to have coverage where will help.

Mr. PALLONE. Well, thanks.

I think the committee should be very proud of the bills before us today. And in particular I believe that including metrics for quality of service is a valuable addition. And once this legislation passes, I hope we can build on the progress we have made to give consumers more insight into the quality of the service that broadband providers offer.

But if I could just ask the entire panel, just a yes or no, would each of you commit to working with the committee to build on the concept of quality of service with the aim of helping to better inform consumers? And again, a simple yes or no, if I could start with Ms. Bloomfield.

Ms. BLOOMFIELD. Absolutely.

Mr. PALLONE. Mr. Assey?

Mr. ASSEY. Yes.

Mr. SPELLMEYER. Yes.

Ms. FLOBERG. Absolutely.

Mr. SPALTER. One hundred percent.

Mr. STEGEMAN. We would love to.

Mr. PALLONE. All right, thank you.

Now let me go back to Ms. Floberg. Significantly, in your written testimony you note that the data that goes into the FCC's broadband maps needs to be publicly available and I agree. In my opinion, this data must be available for researchers who can double check the FCC's analysis, local governments who can check the accuracy of the data, and for consumers who can use it to understand better what is available.

So, Ms. Floberg, from your perspective, considering all Free Press' analysis of broadband deployment data, what would happen if the FCC kept this information to itself?

Ms. FLOBERG. Well, I think, first and foremost, it would absolutely throw a wrench in the works for having any sort of functional challenge process to get a sense of whether or not the data that is being reported from carriers is accurate, but I think it would also have tremendous other impacts. Free Press has used the deployment data to assess where there are racial disparities in broadband deployment. That would be much more difficult without that kind of deployment information. We have also used it to assess the accuracy of claims about investments stalling out in the wake of the 2015 Open Internet Order.

So there are all sorts of different kinds of analysis related to broadband deployment that would become much, much more difficult for researchers as well as for members of the public simply to gauge whether or not the maps are correct that they have service or that they don't have service.

Mr. PALLONE. Thank you.

And then my last question is, Mr. Spalter, I also know quickly fixing the FCC's maps is important. Do you think H.R. 4229 strikes the right balance in that regard?

Mr. SPALTER. We do. And we commend this body and this legislation in particular for advancing three principles. One is that we actually need to prioritize mapping as part of any effort to move forward in accurately determining where unserved American residences and enterprises are. Second, that there is a need for speed in doing so. And third, that it provides bidders, providers, ultimately, who will be seeking these resources to deliver these services the ability to do so with pinpoint accuracy, limiting the risk that we are wasting taxpayer dollars, and speeding up our efforts to actually deploy broadband to unserved Americans so that we can close the digital divide once and for all.

Mr. PALLONE. I thank you. Thank you, Mr. Chairman.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Kinzinger for 5 minutes.

Mr. KINZINGER. Thank you, Mr. Chairman. Thanks to you all for being here.

Accurate broadband mapping is incredibly important so that industry and government can work to provide internet service to un- and underserved areas. It has been one of the bigger goals of this committee and it is the only goal of the Rural Broadband Caucus in which I am proud to serve as a cochair. Billions of dollars have been invested by the government and industry alike and substantial improvements have been made, but there are too many Americans without adequate broadband service, and the fact that there are Americans here in 2019 with no service at all is just beyond me.

There is near-universal agreement that the current mapping methodology is outdated, to put it nicely. We have heard arguments today about not only the maps and the data, but the need for government to quickly disburse funds to continue the buildout. I just want to state that the speed at which funding goes out should be a goal, but it can't be the only goal. For what seems like forever now, government, industry, and Main Street have been complaining about the inaccuracy of broadband maps. Should we move quickly here? Yes, absolutely.

But given the complexities of the issue and the difficulties striking the right balance, we may not have a similar opportunity to do this again for some time. So I would like to move quickly, but it is vital that we get it right so we aren't spending billions of dollars with no effective metrics or meaningful oversight. The most important goal must be to get service to those Americans that have never had it at their homes, their business, or their schools. There is a balance to be struck here and I am optimistic that we can find it.

So, first question, for Mr. Spalter. It is encouraging the USTelecom received input from several wireline providers during its pilot program. It is clear, however, that more partnerships are needed from all fixed and wireless providers. How does USTelecom propose that industry could partner and coordinate in developing this data and would regularly help private industry working groups in coordination with policymakers factor into building that database?

Mr. SPALTER. We were very privileged and lucky that a number of innovative wireline providers stood up and stood tall to work with us in advancing this idea that we can deliver more accurate data not only of served broadband locations but unserved locations so that we could present to you and to the FCC and to any government agency the clarity that is required to guide our future broadband support programs.

I am disappointed that not all wireline providers decided to join with us in our effort, particularly the cable industry; however, we know that there are some very utilizable datasets that we have available that are immediately available once we complete the map to deploy not only, finally, a National Broadband Map, but broadband support programs like the Rural Digital Opportunity Fund that will be effective.

In terms of continued partnership, we want to work not only with all parts of government in a harmonized way, but we commend the legislation that is before this body to ensure that there is actually coordination amongst and between government agencies in utilizing maps, and we as an industry are very eager and ready to work with all parts of government from the FCC to the Commerce Department, the Agriculture Department, and beyond to advance these maps, including at the State and local level as well. This is all achievable.

And we need to understand that if we are going to design and deploy effective broadband support programs, they need to have an undergirding, foundational dataset upon which all kinds of different reporting mechanisms, including shapefiles, can be added in order for us to get the job done of closing the digital divide.

Mr. KINZINGER. Thank you.

Mr. Assey, how do cable providers propose to combine efforts with the wireline and wireless industries to build on the recent pilot program?

Mr. ASSEY. Well, I think, first and foremost, as I mentioned in my testimony, we are focused on delivering the shapefiles that are going to accurately show the places that are already served. The important thing when we are talking about serving unserved America relative to the fabric and the buildings that may exist in unserved America, that to me goes to how much it is going to cost to the would-be bidders to extend service there.

So we believe that actually making progress and getting the shapefiles done, out there, and located on the map will give us a better sense of the area as we need to focus on and allow us to come up with new strategies to actually devote the scarce resources that we do have where they are most needed.

Mr. KINZINGER. So from your perspective, does the fabric tell us which locations have access to broadband?

Mr. ASSEY. The fabric doesn't. The shapefiles will tell us and the process that we are going to create to have providers actually demonstrate this is where we believe we can serve. And we have a verification process and a public crowdsourcing process to make sure that we get that right and then we can focus our energies on making sure we spend the dollars to hook up more people to broadband in unserved America.

Mr. KINZINGER. Well, I have more questions. But time flies when you are having fun, so I yield back, Mr. Chairman. Thank you all.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Loebsack for 5 minutes.

Mr. LOEBSACK. Thank you, Mr. Chair. And I do want to say again, thank you to Mr. Latta for helping on the bill that we are offering today. We have worked together really well. And I want to thank the Members who have been here longer than I have been. Some of the folks' names were mentioned already, too many for me to repeat. But I have only been on this committee now for 5 years. I am in my fifth year; I am still kind of a newbie.

And I won't be here after this term any longer in the Congress, so there is a little urgency on my part to get this done before I get out of here so that the people in my district, people of Iowa, the people of the country can benefit from better maps. I have often said garbage in is garbage out and that is the way it has been in the past, unfortunately, the way these maps have been constructed and then the potential uses of those maps too.

A couple of other quick points, Ms. Floberg, I want to thank you for talking about the affordability issue. That is really, really critical and I really appreciate that. And, you know, affordability is, we talk about a rural-urban divide and most of us are talking about rural access today. But affordability is not just a rural or urban issue, it is a national issue, and so thank you.

And, Mr. Spalter, I hope you don't ever come to my State to run against any of my friends because you are awfully damn inspirational and thank you very much for your remarks today. Not to take away from anybody else, but this has really been a great panel, I have to say.

I do want to just ask, first of all, Mr. Assey, a quick question about crowdsourcing, but before I do that, I have to repeat the experience that we have had in my district with Chariton Valley Electric Cooperative. They have missed out on getting funding for building out. They are an electric cooperative, but they wanted to build out broadband and the data indicated that there really wasn't any need for it and it was based on census data and what have you. Absolutely horrendous decision on the part of the FCC to deny them funding.

If you would, Mr. Assey, I know that you have an interest in crowdsource data.

Mr. ASSEY. Sure.

Mr. LOEBSACK. Could you speak to that issue?

Mr. ASSEY. Yes. I think crowdsourcing is a very interesting and innovative idea for us to improve the accuracy of the data that we are going to get it. Under the current mechanism for reporting it is basically a very binary choice, you are either providing service somewhere in the census block or you are not. But we are now going to move to a regime in which providers themselves are going to have to draw shapes that are going to outline where they can provide service and every point along that line, along the edge of that shape is potentially a contestable question.

So we are going to do our dead level best and work in good faith to provide data that is accurate and complete, but obviously people who live there who have boots on the ground, they often know

some things that we don't know here. So we really are going to have to work collaboratively to get this right.

Mr. LOEBSACK. All right. Thank you so much. I appreciate that.

Ms. Floberg, can you explain why knowing quality of service of available broadband is important for consumers? Can you talk about that a little bit?

Ms. FLOBERG. Absolutely. I mean some of the quality of service metrics are necessary simply for making the maps in determining whether or not service in a particular area counts as broadband according to the FCC's speed threshold, which currently defines that as 25 megabits per second downstream and 3 megabits per second upstream.

Mr. LOEBSACK. Right.

Ms. FLOBERG. We are encouraged to see that that is preserved in the Broadband DATA Act as well as the inclusion of latency which is useful especially for particular applications that consumers may want to use. And we think that there is a lot of benefit to additional quality of service metrics, usage limits, additionally possible pricing data, and we definitely appreciate that the language of this bill does not in any way prohibit the FCC from expanding on the definition and collecting data that it decides that it needs in the future.

Mr. LOEBSACK. Thank you so much.

Ms. Bloomfield, I have a related follow-up question for you. When mapping broadband why is it important to consider latency and not only speed?

Ms. BLOOMFIELD. Absolutely. So you think about the consumer experience, when we go online and the things we anticipate doing and the uses that we have. So when you think about latency, again, you know, you are in a rural community, you are using telehealth, you certainly don't want latency if somebody is actually doing any kind of procedure on you.

So you think about or distance learning, you know, children actually using the technology in the classroom and what that jitter and that buffering does to that experience for those kids in the classroom. So again, they are all part of the consumer experience and they are not that difficult to gather that data as well, so it should absolutely be included.

Mr. LOEBSACK. Thank you so much. And I do have a follow-up question I will submit for the record, if I may, Mr. Chairman, to Mr. Spellmeyer. Thank you.

Mr. DOYLE. Thank you. The gentleman's time is expired. The Chair now recognizes Mr. Johnson for 5 minutes.

Mr. JOHNSON. Thank you, Mr. Chairman.

Mr. Assey, the bills before us today all focus on solving the mapping challenge at the FCC, but for the last several appropriation cycles Congress has given NTIA money to fund a modernization of the National Broadband Map. So do you see an ongoing role for NTIA in the mapping context?

Mr. ASSEY. Thank you for the question. I think all government agencies have a piece of this pie, whether it is NTIA, the FCC, or even the Department of Agriculture. And one of the things that is considered in this legislation that I think is extremely helpful is Congress' imprimatur and direction to the Federal agencies to real-

ly coordinate and work together. And the creation of a better map through the use of shapefiles will give us the background that we need to ensure that all of the agencies, no matter which corner of the Federal Government they are operating in, are operating off the same playbook.

Mr. JOHNSON. Well, I am sure many of my colleagues are experiencing the same thing, especially those that live in rural areas when we go back home. You know, when I was first elected in 2010, one of the first things we started talking about in early 2011 was the need for an accurate broadband map. Here we are in 2019 and we are still talking about the need for an accurate broadband map. The American people are getting frustrated with the lack of progress on this. We have spent a lot of money to try and solve this problem.

I agree with you that it is going to take all of us working together, but at the end of the day I am a mule farming plowboy, you know, and I think we need to go back to the basics and be simple. It ain't that tough to figure out who has got broadband and who doesn't have broadband. I can't believe it is this dadburn complicated, but we need to figure it out.

Ms. Floberg, just as coverage data may overstate the availability of service in some areas, consumers can experience a difference between the speed of the service they are advertised and the speed of the service they actually receive. Would it be helpful for consumers if the FCC collected data on actual speeds instead of or in addition to advertised speeds?

Ms. FLOBERG. Thank you for the question, Congressman. I think that, absolutely, actual speeds are very valuable information for consumers to know, for policymakers to know, and could certainly be a part of this data collection. There currently is a project measuring broadband for America that does collect some of this data and this is part of why one of our main concerns is making sure that the data collected through Form 477 is publicly available and is compatible with other datasets.

As long as we can take the data that we get from Form 477 about deployment and compare it and use it in conjunction with the data that the FCC does already collect about actual speeds that also we think would serve to bring that important data point to the conversation.

Mr. JOHNSON. OK.

Mr. Spellmeyer, do you have any thoughts on how we can identify and correct this problem so that rural users on the wrong side of the digital divide can have the same experience as urban users do?

Mr. SPELLMEYER. And is your question in relation to the mapping or actually getting the service out to them?

Mr. JOHNSON. No, it is the advertised versus the——

Mr. SPELLMEYER. Versus the actual.

Mr. JOHNSON. What you actually get.

Mr. SPELLMEYER. All right. Well, I wasn't going to wade into this, but, you know, on the wireless maps advertising plays no role. The one-time data collection that the FCC did was not based on advertised speeds, it was supposed to be an exercise to map areas where actual speed was above 5 megabits per second. That is what

would happen under the legislation that is before the committee today on the wireless side. That is what is in the bill that has already passed the Senate Commerce Committee and we hope to get signed into law.

Mr. JOHNSON. OK, all right.

Ms. Bloomfield, when a network is built with support from either the Universal Service Fund or the Rural Utility Service, what sort of validation processes should be used to ensure that the network is actually delivering consistent, high-speed service as intended?

Ms. BLOOMFIELD. That is a really excellent point, because when you are a steward of Federal support whether it is USF or the Re-Connect, you really want to make sure that the consumer is getting what you say they are going to get from that support. One of the things that the FCC did that I think is really interesting when they designed Universal Service support, they basically required providers to actually provide some of the information like latency and speed and things like that.

So there are some requirements. It is part of the truce that you have when you work with the government. And I think ReConnect, one of the things that I think has been very interesting watching RUS is they are actually doing trials out in the field as they are looking at this new grant and grant/loan program to actually see what is there, what is not there, what are the speeds that are there, so it is that extra step of doing that, you know, whether it is a challenge process or whether it is verification.

Mr. JOHNSON. Thank you for your indulgence, Mr. Chairman. I yield back.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Soto for 5 minutes.

Mr. SOTO. Thank you, Chairman.

When you look at the different sizes of the census block and the current rules as far as what counts and what doesn't, the gamesmanship that is happening right now becomes really obvious. The largest census tract is 8,500 square miles in Alaska, and they are as small as half a block that could be, or one-tenth of a square mile in an urban area. So when the rule is "if the providers determine they could offer service to at least one household," you could see how terrible a map we could get. Providing one household to the Alaska tract that is 8,500 square miles, you would get the whole thing on the map. We can do obviously a lot better than that. In my district in South Osceola County and Polk County, we have large census tracts, very rural areas.

So my first question, Ms. Bloomfield, does this series of bills take care of all the loopholes that are preventing us from having an accurate broadband map in rural areas or is there other things we are not addressing here?

Ms. BLOOMFIELD. What your legislation does is a really important start. It really starts to get more granular and that is what we absolutely need to have. You know, my carriers provide service to folks on every seven people per mile of wire. Here in DC we have 10,000. So you are right, you have those huge swaths.

But one of the things that we need to be thinking about, one of the things that is interesting and hasn't really come up is RDOF, the Rural Digital Opportunity Fund that the FCC is going to be

rolling out is really going to start with the unserved areas. So the beauty is we have the opportunity to move to the shapefile, start getting more granular, get better maps, and then as time goes on move to some of the things like the work that USTelecom has done I really commend, but I think we don't want to hold back.

I think it is that balance between you have unserved people there. You know it every time you go back to a town hall meeting, I am sure it is the first thing you hear. So how do we keep the process moving, and I think your legislation actually very nicely tees up that sequence.

Mr. SOTO. So there is a synergy between this new funding and getting more, a more accurate map.

Mr. Stegeman, are we covering all the loopholes that we need to for right now to get a more accurate, rural map?

Mr. STEGEMAN. I think it hits most of the key topics which are how shapefiles should be formed or that shapefiles should be provided. But the fabric is needed. I think the fabric is a key part of this. There could be efforts to help explain what a shapefile represents. I am sure if I asked anybody here, you are not quite sure what a shapefile is and I am sure many providers don't know what a shapefile is and they are going to have to come up with it. So there may be some clarification of what those things represent and what can be in and what can be out.

Mr. SOTO. That is helpful. I am also concerned about how our broadband efforts are working nationally vis-a-vis some of our competitors in the world stage, whether what they are doing in China, Japan, or Europe.

Mr. Spalter, how are our broadband efforts stacking up to places like China and Europe?

Mr. SPALTER. I think the record is very clear in a hotly competitive national market that the size and the scale that the United States is, our broadband service is unparalleled. We are investing as an industry close to $80 billion of CapEx in our national broadband infrastructure. On a per capita basis that is an extraordinary step.

One of the wonderful challenges that this body, Congress, the FCC, and others have posed is can we extend broadband service not just to our urban and suburban and even exurban areas, but also to our rural areas that are some of the hardest to reach places on the planet, and which is why we believe that if we can actually accelerate our efforts to have a granular and accurate National Broadband Map guiding some of our future investment coupled with shapefiles and other types of reporting methodologies, we will actually not only get the unserved served, but improve national broadband performance overall.

Mr. SOTO. And, Ms. Floberg, how are we stacking up to China and Europe and others right now as far as our efforts to provide a better broadband coverage throughout the United States?

Ms. FLOBERG. I can't speak as much to the international comparisons, but I think we can hear already from folks in this country where we are falling short. I think that a huge part of this conversation that needs to be talked about more, really, is the affordability portion. We have even in the areas where we have made efforts and successful efforts to deploy broadband at the fastest avail-

able speeds, we are often leaving behind people who can't afford a $70-a-month bill to get on to Charter's entry-level tier of 200 megabits per second.

So I think we can see some of those issues and those problems even when we just focus on looking inside the United States.

Mr. SOTO. Thanks. And I yield back.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Long for 5 minutes.

Mr. LONG. Thank you, Mr. Chairman.

And, Mr. Assey, as I said in my opening remarks this morning, I believe it is important for any broadband mapping to be paired with appropriate enforcement measures that ensure providers' submissions are complete and accurate. While enforcement is important, it is important to be mindful that unintentional mistakes can happen from time to time.

My question is this. Do you think it makes sense to clarify that the standard set forth in the MAPS Act including the word "recklessly" is not intended to apply to providers who submit information or data under this act that contains minor mistakes, small omissions, or overstatements or other unintentional errors?

Mr. ASSEY. Yes, I do. I think, you know, as you point out, it is one thing to intentionally ignore or violate a rule, but we are really embarking upon a new regime here with the drawing of shapefiles. And we have some familiarity with them because they are used whether it is at the RUS, there have been pilots in Kansas, but this is going to involve a lot of different data points and innocent mistakes can be made. I think the issue is going to be are they material and intentional that would be of concern.

Mr. LONG. Yes. Well, that is different if they are intentional, you know, but I am talking about just the minor mistakes, as we said.

Mr. Stegeman, I was very excited to see that my home State of Missouri was included in one of the two States used in the Broadband Mapping Initiative program. How much will it cost to produce a nationwide map based on the pilot program that you just completed and are there some existing data points that could be used that would reduce those costs?

Mr. STEGEMAN. Thank you for that question, and we were happy to do Missouri. It was a good State to look at. It presented a lot of unique characteristics that we could test out. As we looked at that map we expect a national fabric to cost around $10 million if we are able to use some proprietary data. We think we can turn that up within a year so that it is usable. That it can help inform——

Mr. LONG. Cost how much again? What did you say?

Mr. STEGEMAN. Ten million.

Mr. LONG. OK.

Mr. STEGEMAN. Ten million just for the fabric. We think that fabric will then be useful for the creation of the polygons or the shapefiles to help inform them. It will be useful for the consumer to actually be able to look at their point on their surface; understand what those shapefiles mean.

What would help improve the program is for States to step forward with databases. In Missouri, Missouri does not have a statewide 9–1–1 database. That would have been informative to the ef-

fort had that occurred and that we could pull that in, but counties do have that. So going nationally, I think we would expect or ask that States contribute information to us of known locations. Many States have good address datasets, good locational datasets that would just help improve the process and potentially bring down the cost.

A big portion of the cost is actually the visual verification that CrowdReason did for us. Each record is actually reviewed by a person who is looking at satellite imagery, clicking on the map of where the location is. If we can reduce that it will reduce total cost.

Mr. LONG. OK, thank you. And I had one more question for you. One of your primary conclusions was that up to 38 percent of unserved households in the two States, that being Missouri and Virginia, you collected data for would have been missed or deemed served by previous FCC Form 477 efforts. Could you break down that percentage a bit by explaining, if possible, how that figure could be different based upon additional data from cable and wireless broadband providers?

Mr. STEGEMAN. Yes, we did. So when we put together the study for Missouri and Virginia we only have a limited number of providers in the study. We did not have the cable providers participating and providing us data of what they served. So when we published the 38 percent we did note that that is at the high end of our estimate of what the total unserved is and that it could potentially come down as we get more providers reporting information.

We attempted to estimate that by removing blocks that the cable providers serve in the current 477 effort and when we did it, it cut it in about half. So it is still the significant issue even if we brought in all the cable companies and assumed the cable companies served every household in the blocks that they serve today.

Mr. LONG. OK, thank you.

And, Mr. Chairman, I yield back.

Mr. DOYLE. I thank the gentleman. The Chair now recognizes Mr. O'Halleran for 5 minutes.

Mr. O'HALLERAN. Thank you, Chairman Doyle.

With scarce Federal resources being spent every year for broadband development, we can all agree that the need to produce accurate broadband coverage maps has never been greater. I believe mapping legislation passed out of this committee should be quickly scalable, produce detailed coverage data swiftly, and not place extra reporting burdens on small internet providers.

We know too well that the census block reporting structure is outdated and hurting rural and Tribal communities. Simply ask small town businesses across America, economic development groups, our teachers educating children, our public safety officials and first responders, our citizens nationwide in rural areas whose quality of life is being impacted daily without affordable connectivity. They will all say that our coverage maps are failing them and we must act quickly to fix them, if they knew what a coverage map was.

This is going to require partnerships for coordination and investment. America needs these families where they are at. They need to have a good quality of life. Urban America really needs these families where they are at. Whether it is for food or water or trans-

portation or energy, you name it, urban society, urban America doesn't exist without them where they are at. And so, we need to find an answer to this.

Mr. Assey, you stated that the goal of broadband mapping should be to focus on where broadband is and isn't and that trying to layer other types of data into this particular effort, while laudable, could cause unintended delays. What exactly is the type of data that the FCC should focus on collecting for broadband mapping and how quickly could this type of data be replicated nationwide?

Mr. ASSEY. Thank you for the question. I think, first and foremost, we should follow the direction that the FCC set down in the order it recently adopted in August and push forward with the adoption of shapefiles. I think that gives us a granular picture of where broadband is and where broadband isn't. I think the idea of the location tool and really getting atomistically into the longitude and latitude of individual buildings in unserved America could certainly be of interest.

And there is a proceeding teed up at the FCC to answer a number of the questions that the pilot project turned up. So I think it is certainly of something that we should continue to look at and pursue, but I would not want that to slow the progress that we are about to make in moving to a shapefile-based reporting.

Mr. O'HALLERAN. And what about timing? How quickly could that data be replicated nationwide?

Mr. ASSEY. Well, that really is up to, I think right now we are waiting on some direction from USAC. The order has been adopted by the Commission, but we have folks who are, you know, making the plans now to be able to comply as quickly as possible.

Mr. O'HALLERAN. Oh, God help us.

Ms. Bloomfield, NTCA's membership knows all too well the struggles that small internet service providers often face in providing broadband in difficult to reach rural communities. I was just out in my district and I traveled about 4,500 miles and I had cell reception at least half the time, so I can just imagine what the rest of it is like. As Congress and the FCC work towards reforming the reporting requirements that produce our maps, could you outline the importance of mapping legislation offering technical and financial assistance to small providers under a new reporting structure?

Ms. BLOOMFIELD. I appreciate your thinking that way, because again as you look at carriers particularly small ones taking on additional burdens, the question is, you know, if you have a staff of 15 what can you actually accomplish. I think from a shapefile perspective, I think that folks already file so much data now because most of my companies are Universal Service recipients so they are very used to collecting data, sharing data; that is part of their kind of process.

Going to a more complex system, greatly appreciate the thought process that you may be leading down, which is that it may take more resources as we get even more granular to help some of these smaller providers actually track where exactly those locations that are served or are not exist.

Mr. O'HALLERAN. I am not leading down it, that is where I am going. And thank you for your comments. I just want to say we

need to invest more as a government in this process. It is about our citizens and their safety also.

Thank you, Mr. Chairman. I yield.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Flores for 5 minutes.

Mr. FLORES. Thank you, Chairman Doyle and Republican Leader Latta, for holding this important hearing, and I want to thank the panel for joining us today.

Each time the subject of rural broadband and rural mobile service comes up, people invariably complain about the maps, so it is important that we get this right. Also, no one in this committee wants to have a repeat of the BTOP program, earlier in this decade, where $4 billion was pushed out the door and we got virtually no effect on expanding coverage. As a matter of fact, there are only two projects that have received funding since 2010 and the rest of it was essentially wasted.

Mr. Assey, my question for you is this. In your testimony you highlighted a need for any mapping track data to show areas where providers have been awarded Federal funds to deploy broadband. In doing so we could properly designate the National Broadband Map to reflect, first of all, which areas are using, or second, which areas will require Federal assistance to provide service.

I couldn't agree more that we need to make sure that finite resources go to the truly unserved and that private stakeholders involved in building out the next generation of technology know that they are not going to be competing with the Federal Government when they make their investment.

So my first question is this. To what extent would it be helpful for the National Broadband Map to require additional reporting information for the areas that are covered using Federal funds?

Mr. ASSEY. I think it would be very helpful. You know, we, I totally agree with the points you made about duplication and really sending funds to places that broadband already exists. That to me is not the best stewardship of public funds. But I also think it is important not only to make sure that our money is spent wisely, but also to ensure that there is accountability when we do actually fund projects to make sure that we know exactly where broadband was delivered and that the map is updated appropriately.

Mr. FLORES. OK. And continuing along the question of duplication, to your knowledge how much interagency coordination occurs to avoid cross-subsidizing in the same area with different Federal programs such as the High Cost Program and the Rural Utility Service program?

Mr. ASSEY. I don't know that I would hazard a guess on how much coordination there is. I know that they obviously do talk from time to time, but I think they are all dealing with imperfect tools presently, and our hope is by getting a better broadband map that will assist their coordination and certainly your pushing the right direction will help as well.

Mr. FLORES. That is certainly something we in Congress need to work on is making sure we are not having duplication of efforts and when it comes to the subsidization programs.

Mr. Spellmeyer, I agree with your testimony in which you voice your support for H.R. 4229, the Broadband DATA Act, and specifi-

cally for the inclusion and standardization of definitions for radio frequency engineering terms used to measure signal strength and propagation. Further, you note that this bill would require the FCC to continue revising the rules in the future to reflect changes in mapping related technologies.

Can you expand on why common standards are so important for mapping needs and to what extent standardization will be helpful as the next generation of mapping technologies is developed?

Mr. SPELLMEYER. Well, certainly getting a common set of standards is important when you are trying to take the claimed coverage by, you know, a number of providers, two, three, four, five in a given area and overlay them on top of each other. That is where the FCC kind of veered off course a number of years ago. Chairman Pai made some efforts to try to standardize it with the last one-time data collection.

Unfortunately, we are going to be headed back, I think, after this legislation passes to do another one-time data collection. It is really important that we fix some of the things like the cell edge probability, because if that number is too low you are building in an error factor that once you lay one map on top of the other it begins to multiply itself.

Now, it is also important to the second half of your question to focus on evolving technologies over time. We are on the precipice of 5G. My company wants to bring 5G to lots of places in rural America and the legislation gives the FCC the tools to update that over time as that continues to deploy.

Mr. FLORES. OK, thank you. I yield back the balance of my time.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Ms. Eshoo for 5 minutes.

Ms. ESHOO. Thank you, Mr. Chairman. My number one wish is that under your leadership and that of Mr. Latta that we get this done. It has been a long time. It is too long.

To all the witnesses, you have given terrific testimony and we are always better for it. We really do pay attention to what you say. This is about mapping our future, the future of America, and sometimes I think we get bogged down in—well, in many ways, by necessity, in a lot of the details. But I think the overarching call to action needs to be based on what I just said, that this a map for America's future.

And my first question is, and if each one of you can say yes or no, I—well, let's see what you will say. Based on the legislation that is at hand and I think will succeed—it is bipartisan, it is sensible, it has strength in it, all of those factors—if technologies change and they always do, given all the collective expertise at the table, does this legislation, can it stretch itself so that it meets future challenges?

In other words, if it is just for now and what we have now, then you know what, you are going to be back here testifying and I don't know how much longer I am going to be able to show up for meetings on mapping. But do you think that this legislation speaks to the future, future technologies? And, you know, for example, moving to satellites. There are so many areas that I don't want to have to keep revisiting new types of fixed or mobile broadband tech-

nologies, small cell sites, satellites, I could go on and on. You know what I am talking about. So yes, no?

Ms. BLOOMFIELD. So I would say the framework of the bill will live on. I think the standards could change, but that is up to the FCC to work on that. So absolutely, yes. This is a framework for the future.

Mr. ASSEY. Yes, I agree. And as you said, we are creating a map, but it is also a living map so it will be flexible to accommodate new technology.

Ms. ESHOO. Good. Encouraging.

Mr. SPELLMEYER. My answer would be absolutely. And the good news is the Senate is tired of dealing with this issue. They have moved a bill out of committee and I think they are going to send it over here soon and hopefully you guys can adopt it.

Ms. ESHOO. Wonderful.

Ms. FLOBERG. We are also optimistic that this bill would be applicable and useful for future technologies.

Ms. ESHOO. Great. Good.

Mr. SPALTER. It is a strong, durable, and sustainable framework. It is based on, and this is the genius that it insists that we at a granular level can map both served locations but also unserved locations and then be able to update it as a living document with crowdsourcing and other types of——

Ms. ESHOO. Good.

Mr. SPALTER [continuing]. More effective, challenging mechanisms.

Mr. STEGEMAN. I would agree it does. It is a flexible bill and it does provide flexibility into the future for new technologies as they come out.

Ms. ESHOO. Yes. I think that Mr. Stegeman is the only statistician on the panel today. Thank you very much.

And I think the most often used word, because I have been here for a long time this morning, is granular. So whomever, I don't know, maybe there is a prize for that.

Let me—I think each one of you have talked about the challenge process so that consumers and government officials can speak up when the FCC data doesn't reflect reality. My question is this data is available today in CVS files, which is easily accessed in Microsoft Excel or Google Docs and also easily accessed by researchers using R and Stata and other statistical software.

Do you think that shapefiles can be turned into a format that is easily accessible for people to understand—this is real operative phrase in my question—easily accessible for people to understand so they know whether or not to challenge the FCC data?

Mr. STEGEMAN. If I can take a first shot at that.

Ms. ESHOO. Yes, sure.

Mr. STEGEMAN. So shapefiles will be a challenge only from the aspect of, one, normalization of what the shapefiles mean; two, is they are potentially——

Ms. ESHOO. I don't know what that means.

Mr. STEGEMAN. It is what are the shapefiles based on. Are they based on points, are they based on roads, what does it represent?

Ms. ESHOO. I see.

Mr. STEGEMAN. And if my address falls in it, does that mean I am served, and those types of issues. But there will be 4,000 of these potential shapefiles filed by all the providers. If you look at all of them out there each one will have to provide shapefiles by speed, so it may overwhelm researchers.

The point level data, the fabric, actually may be easier to analyze just because it is point-specific data and I don't have to analyze all these shapefile layers that will be stacked upon each other, which makes it difficult for research. It can be done, but point level data just makes it a bit easier to work with the data.

Ms. ESHOO. Easier.

Mr. STEGEMAN. Easier.

Ms. ESHOO. I think my time is expired. I don't know if I get all of that or if my next-door neighbor will know how to access this, but I am going to trust what you said.

Thank you, Mr. Chairman.

Mr. DOYLE. The gentlelady yields back. The Chair now recognizes Mrs. Brooks for 5 minutes.

Mrs. BROOKS. Thank you, Mr. Chairman.

Thanks for all of your testimony. I love what my colleague from California just said. Not only has she and others been working on this for a long time, but she is thinking about the future as she always does and is thinking about let's not pass something that is going to be stuck in time, and that is always the challenge with all of our legislation around technology. So thank you on the flexibility and the forward-leaning.

I have to admit, like Congresswoman Eshoo there were terms that, you know, are just foreign to all of us. Shapefiles, fabric issues, I mean these are just not commonly understood terms, and I applaud you, Ms. Bloomfield, acknowledging that you might not know the speed of your internet. Most of us don't, really. And so to the extent that you all can just continue to educate the American people, because this is really the issue for the future and for everyone in our country.

Indiana, I am really proud, has made a commitment to broadband buildout on a State program called Next Level Broadband and we are going to be investing a hundred million dollars for broadband in our nonserved and underserved areas. Officials involved with those buildouts though have told me that we have ongoing problems. We heard this from Scott Rudd, the director of our broadband opportunities for Lieutenant Governor Crouch, that we are having ongoing problems with households paying for internet service but then having such restricted access due to network outages. And we haven't really talked about that with the fault, you know, resting on the ISPs, so essentially, they don't have internet access.

Has there been any discussion in all of this about whether or not to include network outages as part of any criteria for whether a location is served or not in the new proposed mapping regime being pursued? We hear about latency, but what about outages? Has that been discussed at all and why or why not? Anyone have any answers for that?

Mr. SPELLMEYER. Congresswoman, I have not heard any discussion on that in relation to the wireless side of the equation. We cer-

tainly have outage reporting obligations to the FCC that we engage in on a regular basis when they are triggered, but I haven't heard. You know, I think as an industry we try to deliver a service that is relatively reliable, you know, 99.9 percent of the time, and I don't see that as a big issue on the wireless side.

Mrs. BROOKS. Anyone else?

Ms. BLOOMFIELD. Again, I would also say that wireline carriers also have obligations and reporting requirements. As we talk about different things that could be plugged in, you know, adding that as a factor might make sense. Honestly, they have such strict obligations, I am actually surprised to hear that that is such a big issue in Indiana.

Mrs. BROOKS. Well, I would be really interested.

Mr. Spalter, did you——

Mr. SPALTER. I am sorry. If you needed to complete——

Mrs. BROOKS. No, no, no. Did you have anything?

Mr. SPALTER. Well, thank you, Congresswoman. Well, the really important aspect of the legislation before this committee is that it insists that we move forward, before we actually spend Federal resources to achieve greater broadband support for unserved communities, that we have a map that is sufficiently granular that shows where served and unserved locations are. That is the location fabric. Once we have that you can then layer on all kinds of other reporting methodologies. Shapefiles, highly complementary to it, potentially even reporting of network blockage or network outage moments, as Mr. Stegeman just advised me.

But what we need to start with precedentially, if we are going to be good stewards of Federal dollars and really close the digital divide, is first do our fundamental work of developing and scaling that location fabric which shows where the locations that are currently served and takes that next important, Holy Grail step of identifying by the rooftop level where there are unserved locations still in America.

Mrs. BROOKS. OK. Well, thank you. And if anyone wants to call Scott Rudd, feel free to find out what he is concerned with. I want to thank Mr. Stegeman in my remaining time, because in case you are contemplating doing more pilots Indiana would welcome the opportunity for you to conduct more pilots. But given the issues you said were present in address data, do you have any thoughts on whether addresses should be considered served if ISPs don't actually know whether or not they serve a specific household or not?

Mr. STEGEMAN. It is a good question. The address level data that we have seen there are difficulties in tying that address to a point on the Earth surface and actually identifying your house, sometimes, in rural areas. It just doesn't link up. When you get it in Google or elsewhere it doesn't line up. So the fabric provides that additional knowledge of where the location is, so that you understand if you will have access to service or not when you have the maps available.

Mrs. BROOKS. OK, thank you and thank you for your work. I yield back.

Mr. DOYLE. The gentlelady yields back. The Chair now recognizes Mr. Butterfield for 5 minutes.

Mr. BUTTERFIELD. Thank you very much, Mr. Chairman. And to the ranking member, thank you for your continued efforts to improve the accuracy of our National Broadband Maps. I wish Ms. Eshoo was still here. I would publicly associate myself with her remarks. And then Mrs. Brooks came along from Indiana and she aligned herself with Ms. Eshoo. And I just want to say that what both of these Members have said is critically important.

I came on this committee January 3rd of 2007. I guess that has been 12 years now, and every year that I have been on this committee we have been talking about mapping. And so, as Ms. Eshoo said, let's just get it done. The data is crucial to understanding which parts of our country still lack adequate broadband infrastructure and sufficient speeds to use the internet effectively.

There are still parts of my district as my other colleagues have mentioned in their districts, there are still parts of my district in eastern North Carolina that do not have consistent access to reliable broadband, a resource critical to competing in today's economy. The problem is exacerbated by the fact that our maps purporting to identify underserved and unserved areas remain absolutely inaccurate.

That is why I was delighted to join Mr. O'Halleran and Mrs. Rodgers as original cosponsor of H.R. 3162. Our bill will ensure, Mr. Chairman, that national service data is accurate and will hold providers accountable for the mapping data, shapefiles if you will, that they submit. It is my hope and belief that this bill and others that we will consider will aid us in bringing the promise of the internet age to all Americans.

Let me go to my far left, since I am most comfortable with that. [Laughter.]

Mr. BUTTERFIELD. I have friends on the right too.

But, Ms. Bloomfield, I agree with you that it is important to engage in a challenge process before an agency gives out broadband funding, but how do we strike the right balance, if you will, so that providers and the FCC aren't so overwhelmed by challenges that vital funding gets delayed?

Ms. BLOOMFIELD. That is an excellent question. It is a balance and you are always seeking that balance. And I think in part as you move to more granular maps you are going to have better maps so the gap is going to narrow, so you are going to have better information so you are going to start from that; that if this bill is enacted, FCC moves forward, the maps will become more granular by definition, so the areas that you are looking to actually do these challenges process in will be more limited.

I think, you know, you don't want people to do this on a whim, but I think that again the story of what is on the ground is really the sanity check because you are dealing with self-reporting data so you need to have that reality check of what is actually taking place. I think there is a way to strike that balance and I think it is going to be an important one. I don't think we are going to see what we saw with the Mobility Fund, I think, again because better mapping will lead to better data.

Mr. BUTTERFIELD. All right.

Mr. Assey, if I can go to you next, please, I think it is important for the public to be able to provide input on the broadband maps

so that we get a better sense of really what is happening on the ground. I understand you support both crowdsourcing and a challenge process as a means of getting this done. Could you please talk about how those public input opportunities will create a more accurate broadband map?

Mr. ASSEY. Sure. And I would agree with Ms. Bloomfield, we do have to have standards and make sure that we come up with a mechanism that is administratively workable and provides public input that can lead to more accurate maps. But the fact of the matter is that sometimes the people with the best information are the people with boots on the ground.

And certainly there is a capability to challenge representations that are made and this is a process that we can create to hopefully improve the accuracy of the maps we have. We have some experience at least with respect to grants that have been made for broadband previously in developing a challenge process and hopefully we can learn from that in developing a process that the general public can participate in as well.

Mr. BUTTERFIELD. If I may continue with you very briefly, I think it is important for the public—excuse me. I am an original cosponsor of the mapping bill introduced by Mr. O'Halleran and I would like to go back to your testimony where you talked about the benefits of using shapefiles to map broadband service. As you know, much of my district in North Carolina is rural so getting the best broadband data in the quickest way possible is important to me and to my constituents. Could you explain how shapefiles can achieve more granular data?

Mr. ASSEY. Sure. I think shapefiles will allow network providers to draw boundaries around their service areas based on what they know, based on the places they are, the places their lines run, the places they offer service or can offer service. Right now, we have a reporting mechanism that essentially requires us to report on the basis of presence or absence in a census block.

So I think being able to rely on the provider at least as a matter of first instance to draw the boundaries of where it can serve will lead to more accurate results and we will be able to refine that over time.

Mr. BUTTERFIELD. Thank you. Is this similar to tax mapping? All of our tax departments have this GIS system. Is it in the same, yes?

Mr. ASSEY. I am sorry, I couldn't tell you.

Mr. BUTTERFIELD. All right, thank you. I yield back.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Walberg for 5 minutes.

Mr. WALBERG. Thank you, Mr. Chairman. And thanks to the committee for having this hearing and for the witnesses to be here. All I know is that for too long my constituents in southern rural Michigan have been missing out on the 21st century digital economy due to flawed broadband availability maps. But, more importantly, I don't care whether I look at it through a shapefile in the fabric or how granular I get, I can't find broadband at my property and so I am left out as well.

So it is personal to me and so I commend the members of the committee here today for offering this legislation and for us debat-

ing it. I am just hoping it works as we move forward with what ought to be. When I first heard about shapefiles, I remember my singing quartet experience of shape notes. I know all about that, but shapefiles I am going to learn more about through practical experience.

Mr. Spalter, in your testimony you spoke of how the Broadband Serviceable Location Fabric could be the underpinning of a, as you said, a contemporary, tailored and updatable broadband map to serve as the foundation for all future spending decisions. I believe we must ensure efforts to improve our maps are not just for the short term, so I think I agree with you on that.

How important is it for the fabric to reflect changes in mapping capabilities in the future and do you have recommendations on how we can improve mapping sources so the fabric can be constantly improving?

Mr. SPALTER. The foundational element of any improvement for future broadband mapping methodologies has to be again that location fabric that will be a national dataset that shows where locations are served, but also importantly where they are unserved.

And once we are able to establish that location dataset, and we know that we can do it timely and affordably within a year, then you can dynamically add on all kinds of reporting and complementary reporting methodologies like shapefiles, other types of datasets that will be coming online that will be made available openly, in an open source way through State, local, and even municipal data sources in new, innovative, proprietary data sources, additional company-led efforts to initiate open source methodologies, for example, like Microsoft's rooftop imagery datasets which already are incorporated into our location fabric.

But it all starts with the need to have a baseline understanding of where our broadband-served locations currently are and where they are not. And upon that then we can couple all kinds of other reporting methodologies. And we must do so particularly as we are looking about the opportunity of spending $20 billion in a Rural Digital Opportunity Fund, three-quarters of which according to the current design will be out the door without the benefit of this foundational dataset.

We need to have a proper sequencing, which is why we support your efforts in this committee echoing what has gone in the Senate with similar legislation to move forward to establish this foundational dataset.

Mr. WALBERG. Thank you. I appreciate that.

Mr. Assey, it is vital that we obtain more detailed information about where service is and where service is not so that we can better identify the truly unserved populations. Do you believe incorporating shapefiles will help achieve this goal and if so, how?

Mr. ASSEY. Shapefiles will definitely help us achieve the goal of more accurately identifying households that are unserved. And to the extent we can do that we can better marshal our resources to fill those gaps.

Mr. WALBERG. Well, we hope that is the case, very much so.

Ms. Bloomfield, can you talk about how important an ongoing and periodic challenge process is to improving our Nation's mapping capabilities?

Ms. BLOOMFIELD. Absolutely. So as everybody was talking about whether you go shapefiles, fabric, you know, what sequence you are looking at, again it is still self-reported data. So at the end of the day the challenge process is going to be really important because it is your sanity check. It is the one chance to be able to say what is really happening.

Mr. WALBERG. That is good nomenclature.

Ms. BLOOMFIELD. So I think it is really critical. And, you know, we have seen it work in programs. RUS has a challenge process with some of their awards that they are doing under the ReConnect. It is an important part to make sure that if you have Federal resources that are pretty limited, how do we direct them particularly to the unserved, then start working to the underserved, and then continuing to build and sustain that work.

So if we are really going to tackle this as a country and we are really going to be serious about it we have got to use the resources wisely and the challenge process will help us do that.

Mr. WALBERG. Thank you. I yield back.

Mr. DOYLE. The gentleman yields. The Chair now recognizes Mr. Welch for 5 minutes.

Mr. WELCH. Thank you very much, Mr. Chairman. I am glad the committee is finally acting to fix this widely inaccurate broadband map situation. We have been at it for a number of years, and finally we have a chairman who has got the gavel that is going to make something happen. Thank you, Mr. Doyle.

You know, one of the things that actually is very troubling is in the zeal of the FCC to get out feel-good information there was no critical assessment of what the reality was for people in rural Vermont or in rural South Dakota or in rural Iowa, and it is pretty outrageous. I just want to say that because there was all this happy talk for years that we have coverage in all these areas when we didn't, and that was our government really neglecting rural America. And I just want to register my outrage at that because so much of the people we represent need that coverage and don't want to be second-class citizens. So when this Congress says the rural America is going to get that equal service, more or less, but then the FCC doesn't stand up to make that happen, it really is not acceptable.

Now having said that, I am very happy with this panel and with the progress we now are making, but we have got to follow through on this because it has to be at the end of the day that rural America has the tools it needs in order to survive and compete. And that is real common thread amongst all of us who represent rural America.

But let me ask a few questions. I will start with you, Mr. Spellmeyer. We have been talking about the mapping challenges for years now, so it is nice to have a concrete discussion about progress in the committee. Can you share with the committee what your company found when it went around the country and challenged the maps during the Mobility Fund II process and where do we go from here?

Mr. SPELLMEYER. Yes, Congressman. The short answer is we found a mess. As I said in my testimony, we spent $2 million. That was a significant investment on our part to hire drive test compa-

nies to drive around. I think we covered 16 States. We found more places to challenge than we didn't find and we submitted a huge number of challenges to the FCC.

I think you are right. I have been talking about this issue for a decade and I actually think it is a good-news story of Congress actually working. For a long time I couldn't get bureaucrats in Washington to pay any attention to this issue and eventually it was conversations with members of the Senate and Members of the House who all looked at me and said, "Yes, you are right, I don't have coverage in my district," that allowed us to raise the profile of this issue and get to where we are at today. And I am actually really excited that we can pass this bill.

Mr. WELCH. Well, let's keep going.

Ms. Bloomfield, do we have to have a challenge process in place?

Ms. BLOOMFIELD. I would not go down this road without a challenge process. I think it is very important you need a verification. If you are going to really take this seriously——

Mr. WELCH. Right.

Ms. BLOOMFIELD [continuing]. There is only so much—first of all, I think it is impressive that you have a panel that includes a lot of provider representatives who are all saying we want to report, we will report, but you have got to be able to verify.

Mr. WELCH. Thank you.

Mr. Spalter, when you are mapping broadband do you feel it is important to consider latency and usage limits or is tracking speed enough?

Mr. SPALTER. I think that latency is an important, critical insight that will inform not only, you know, the quality of service that ultimately consumers need, but also will help direct our Federal broadband support programs to the kinds of technologies that actually can toe the line when it comes to maintaining those standards.

We know, particularly, if we want to have a 5G world, we are going to have to have a wireline infrastructure to provide the backhaul especially in rural America to make that promise available to those citizens that live in our rural communities.

Mr. WELCH. Thanks.

Mr. SPALTER. And the latency requirements need to be eventually part of any assessment of where our broadband dollars are going to be most effectively used.

Mr. WELCH. Thank you.

Ms. Floberg, do you want to comment on that as well?

Ms. FLOBERG. Yes. I think that when we are looking at, first of all, the broader digital divide, not just questions of deployment but questions of competition, questions of affordability, the more information we can get about what this market actually looks like for consumers is going to be immensely valuable for policymakers. Usage limits, for example, can have a huge impact on how a customer uses services, whether or not they have to pay more for that service than they initially signed up for; whether or not they can use that service consistently.

So I think especially as we try to use this legislation as a stepping stone and move into talking about the broader digital divide and these competitive issues and affordability issues, these kinds of quality of service metrics should be part of the conversation.

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

Mr. DOYLE. Thank you. The Chair now recognizes Mr. Gianforte for 5 minutes.

Mr. GIANFORTE. Thank you, Mr. Chairman. And thank you to the panel for this important discussion today.

During our hearing with the FCC commissioners, many Members on this committee raised concerns about the accuracy of Form 477 and the FCC coverage maps. The inaccuracy of these maps show cell phone and broadband coverage in areas of Montana where we have no coverage. This failure reduces USF investment in our most hard-to-reach places and it could lead to overbuilding in some areas while underbuilding in others.

The lack of high-speed broadband coverage and investment has real impacts on hardworking Montana families. I have heard from small business owners who because they don't have access to reliable cell coverage just can't conduct business while they travel around the State. Recent FCC reports on broadband deployment claim that 86 percent of Montanans had access to high-speed internet service. This is simply not true. Many of the providers I have met with believe that the number is greatly inflated and that access is probably closer to 50 percent. The FCC even acknowledged its figures aren't correct and has issued fines to companies that have overstated coverage.

Recently we had Commissioner Brendan Carr to Montana. I commend him. He has now traveled to over 30 States to observe locally to get on the ground. He stated when he was in Montana, Montana has the worst cell phone coverage of any State he has been to so far. I know I can also attest that every Montanan can tell you exactly where on the interstate you are going to lose coverage and how long it is going to take to get it back so you can continue a conversation.

That is why I signed on to the Broadband Data Improvement Act. Rather than using large and inaccurate census blocks, Representative Rodgers' bill encourages the FCC to use shapefiles in order to give a better idea of where broadband coverage is and, more importantly, where it isn't so we can invest. I think we should also focus on the challenge process—we have had a lot of discussion on that here today—to help smaller co-ops and rural broadband providers challenge coverage maps before funding is disbursed.

There is a conversation about using crowdsource data which could be informative, but not a deciding factor in this accuracy of the maps. It is time to get these maps right so we can invest in those areas that need it most to close this digital divide so that Montanans can have better access and more reliable access to broadband and cell coverage.

So, Ms. Bloomfield, it is good to see you again. Thank you for traveling to Montana. It was good to have you there at the Montana Telecom Association event in Big Sky just a couple of weeks ago. We spent a lot of time there talking about mapping and the other challenges Montanans face.

I want to drill into this challenge process a little bit. You have talked about it today, the importance, so that our small guys who have actually been, in my mind, better stewards of the USF dollars

than some of the larger legacy out-of-state providers who have not invested the way the local people have. Could you just reiterate briefly the importance of the challenge process?

Ms. BLOOMFIELD. Absolutely. So particularly as we are looking at the Rural Digital Opportunity Fund coming out, Congressman, and again, you know, I knew exactly where, even in Big Sky, and we joke because it is a resort, you just go a mile down the road and you lose service. You lose actually internet access everywhere.

So it is, these programs like Universal Service are going to be really important. And choosing to put those dollars in the areas, and we look at RDOF, it is the opportunity for carriers who are not going to be providing service in those territories to basically say so and allow other providers to come in. To best direct those fundings we really need to know where those resources can be directed so you can start filling in the gaps in a State like Montana which has gaps.

Mr. GIANFORTE. Now we just had some discussion from the prior questioner. Mr. Spalter spoke about the need to consider latency and usage limits in addition to just tracking speed. Could you comment on that further, Ms. Bloomfield?

Ms. BLOOMFIELD. Absolutely. You know, I think when we start looking at standards and we start looking at what service really entails and obviously people think about speed and they think about their experience, but part of the experience really is truly the latency and it is the ability to be able to do some of the things like Ms. Floberg had talked about where, you know, when if your access might be tied to usage and you have a kid doing homework and you have, you know, data limits, at some point you are really kind of tying the hands of some of your consumers.

So making sure that folks actually submit and report that information, it is not onerous to do so and if we are really going to take this seriously and gather data we should gather all the data we can.

Mr. GIANFORTE. Great. Well, I just want to re-emphasize the need for accurate maps. We do not have accurate maps in Montana. And as a result, the USF dollars, taxpayer money, is just not being invested properly. So thank you for testimony. With that I yield back.

Mr. DOYLE. The Chair now recognizes Ms. Clarke for 5 minutes.

Ms. CLARKE. Thank you very much, Mr. Chairman. And I thank our ranking member, Mr. Latta, for convening this subcommittee hearing today on improving our Nation's broadband maps.

Broadband has proved to be an equitable instrument to level the playing field for millions of Americans and a necessary step to ensuring the success of our national infrastructure. The use of this technology has the potential to decrease the digital divide so consumers can have access to educational and employment opportunities, and this is no longer a luxury for my constituents.

However, fraudulent broadband mapping reporting on broadband access is a barrier to consumers whether they are from rural America or urban America. These harmful reporting practices skew the data that determines where and how Federal dollars is spent. Thus, in a GAO report it was found that the FCC data overstated broadband deployment by allowing providers to report availability

in blocks where they do not have any infrastructure connecting homes to their networks if the providers determined that they could offer service to at least one household. We have heard that.

It is incumbent on each Member here to ensure that these gaps and broadband coverage are addressed in a manner that will protect the American people and help to close the digital divide across our country. Like our highway system, if you don't make sure that every road is connected at some point, we are going to have catastrophic circumstances and parts of our Nation will be left behind.

So my first question is actually to Ms. Floberg. Ms. Floberg, can you describe the effect that high prices have on closing the digital divide and is that a good reason for the FCC to collect pricing data?

Ms. FLOBERG. I would say it is an excellent reason for the FCC to collect pricing data. What we have seen is that right now according to the current FCC Form 477 collection, 141 million people in this country don't subscribe to broadband at the FCC's 25/3 speed threshold.

Now there is, this conversation is a lot about trying to figure out how big of a proportion that don't have access, can't subscribe to that service because it is not available and that is an important problem. But we still have, conservatively, a hundred million people who do have access to 25/3 and they can't subscribe, or they subscribe to a slower tier because that is the only option they have. They can't afford to get the fast kind of internet that they need or again, millions and millions more people who do subscribe but are constantly having to make sacrifices and to choose what they pay for this month.

Can they afford the internet this month or can they afford food this month? And those kinds of choices are not choices we should be asking people to make. They are not choices that indicate a closed digital divide.

Ms. CLARKE. Absolutely, thank you.

The FCC's mapping data is utilized for various policy matters including Federal subsidies. Additionally, the data is used to better understand telecom marketing competition, specifically to review mergers. Mr. Spalter, how is mapping data utilized to justify potential telecom mergers and how will update flawed collection methods like Form 477 and broadband maps help improve this process?

Mr. SPALTER. I can't speak specifically to how broadband mapping, per se, can actually improve or accelerate the ability to effectively and incisively evaluate mergers. I am not an antitrust expert. However, what I do know is that the ability to deliver to policymakers at the FCC, at other agencies of government across the country, a mechanism to more accurately and with specificity pinpoint where our current locations are served and unserved is a start of an extraordinary range of diverse and innovative reporting and/or analytic opportunities that we could layer on to that foundational dataset such as merger reviews that will actually be able to accelerate good public policy and allow us to maintain really good stewardship of the kinds of dollars that we are committing through public programs.

Ms. CLARKE. Very well. I have like 22 seconds left. Would you like—OK. Let me ask a final question in that quickly.

Ms. Bloomfield, it is important to improve broadband mapping so that we can identify more precisely where broadband is available, but also to examine the quality. Do you agree that information on quality of service is valuable too? If so, can you expand on this statement?

Ms. BLOOMFIELD. Absolutely. I think it is a good idea to actually capture performance. But I think, again, when I hear this committee talk about how long it is taking to get mapping done, I would say right now the discussion on the table is also about like how do we get the location, how do we get the accuracy in that? I think teeing up for another day, absolutely, discussions about, you know, we welcome better visibility into the performance process, so those are also key discussions.

Ms. CLARKE. Thank you very much. I yield back, Mr. Chairman.

Mr. DOYLE. I thank the gentlelady. The Chair now recognizes Mr. Bilirakis for 5 minutes.

Mr. BILIRAKIS. Thank you. Thank you, Mr. Chairman. I appreciate it and I appreciate the testimony of the panel.

Representative Luján and the chairman and myself have introduced legislation that would provide some accountability to the mapping process. The Map Improvement Act directs the FCC to engage in standardized information collection and incorporate it into a single map. This seems like common sense to me. The bill also allows for consumers to provide feedback on map accuracy. That makes sense too, since the individual themselves is the ultimate decider of whether coverage exists at their property or not.

Mr. Spalter, do you think that including the intended end user in the coverage map is an important check on map accuracy, and then also and how would you envision the review process taking shape from the company perspective?

Mr. SPALTER. It is not only important, but it is entirely appropriate, Congressman Bilirakis, to facilitate that not only for Federal Government's, but for all levels of governments, Tribal entities, to be able to actually have that kind of accountability and verifiability that comes with both challenge and verifiability processes.

One of the benefits, actually, of advancing in the proper sequence at the front end, a location fabric, is that it will actually allow us, as Ms. Bloomfield pointed out, to minimize the number of challenges we ultimately are going to have because we all have a reference point, a national reference point of where locations are and where they are not, against which it will be a lot harder and there will be more disincentives to report inaccurately.

So we think that crowdsourcing, keeping this as a living document that can be iterated with the best kinds of products that are out there in the marketplace, every year, is an important step and we support it.

Mr. BILIRAKIS. Very good, thank you.

Mr. Assey, the FCC is questioning whether it should require more granular data. One complaint from providers for very granular address level service data is that such information could be used as a target for their competitors. Is this a reasonable fear, in your opinion and, if so, what can be done to ensure that the FCC has accurate and reliable data but also protect sensitive informa-

tion for their industry regardless of how granular it is? If you could answer that I would appreciate it.

Mr. ASSEY. Sure. Thank you for the question. I mean, obviously there is competitively sensitive data that all companies have about their plans to serve their customers. I do think one of the things that we have achieved through the shapefile process is a real balance. You know, we have talked a lot about a granularity, but there is another side, which is you can get so granular that you can create systems that are so complex that they are difficult to execute and update on a regular basis.

So one of the reasons we focused on moving from census blocks to shapefiles is because we believe that protects competitively sensitive data, that it is achievable, and that it is extendable across the United States in a very rapid fashion and that we will get the most bang for our buck if we focus on that.

Mr. BILIRAKIS. Very good. I appreciate that.

Anybody want my time? All right, I will yield back.

Oh, yes, please.

Mr. LOEBSACK. Thank you, Mr. Bilirakis. Very quickly, if I may. As you know, Mr. Spellmeyer, our bill, the Latta-Loebsack bill, Loebsack-Latta, however we want to say it, has some specific parameters to change how mobile broadband internet access is documented. And can you explain how and why these prescribed parameters will improve the maps that we have now?

Mr. SPELLMEYER. Yes, Congressman. I do believe they will significantly improve the map. There are a number of additions specified by the legislation. The two most important ones relate to when we model these networks and how the signal propagates you have to make a choice about something called cell edge probability. What is the probability that that signal is actually going to get out to the cell edge? The FCC used 80 percent. We don't think that is a commercially reasonable number. Taking it up to 90 is consistent with how we engineer our networks.

The other big one was cell loading. The FCC said model network loaded at 30 percent. We don't think that is accurate and this one bumps it up to 50, much more balanced picture.

Mr. LOEBSACK. All right, thank you.

And thank you again, Mr. Bilirakis, for yielding. Thank you. I yield back.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mr. Veasey for 5 minutes.

Mr. VEASEY. Thank you, Mr. Chair. You know, in urban America, which I represent, we have sort of two, you know, different issues. You know, you have like myself for instance, right, where I have one MVPD provider and then I have a different ISP because I don't necessarily get the highest speed in my area. So I have to have two different services so I can have the highest speed. And then, but there are still some services in urban America where there is no coverage.

And so I want to maybe ask Ms. Floberg, you know, when they were, you know, looking into this issue, do you think that the shapefiles that have been proposed would also be able to accurately show where there are underserved areas in urban America that may still need coverage especially when you take into consideration

that the $20.4 billion that was used for existing universal payout to ISPs to be able to provide coverage to rural areas were really, I think, specified just for rural America? And so do you have any thoughts on that at all?

Ms. FLOBERG. Thank you for the question, Congressman. Yes, I think that the promise of greater granularity here is most relevant when we are talking about these larger rural census blocks, but is absolutely valuable and I think has the potential to help highlight where there might be particular neighborhoods in urban areas that are being overlooked when it comes to deploying faster and faster speeds. I think that that definitely can, the level of granularity promised could hopefully highlight some of those areas and help us figure out if there are cases where we have examples of digital redlining occurring.

Mr. VEASEY. Yes. And with the FCC's different proposals—and I will be happy for anybody to answer this. With some of the other proposals that have been out there like, you know, digital opportunity data collection, crowdsourcing, sunsetting Form 477, is there something that should have also been included that wasn't a part of that initial FCC proposal that could really help people in underserved areas?

Ms. FLOBERG. I can jump in on that again. I mean, I think that part of this again that we think is really important and this may not be for this bill and this day, but expanding our understanding of the digital divide and trying to expand that to understanding prices, trying to understand what kinds of prices consumers are actually being charged.

Right now, this is something where the FCC currently collects virtually zero useful data in trying to gauge what those prices are nationwide, which makes it very hard to say where broadband might be affordable, where it is not, or even for policymakers to assess what kinds of interventions might be necessary.

Mr. VEASEY. Yes.

Ms. BLOOMFIELD. I would just add that I do think that we are in a really interesting sweet spot where with what you all are doing in the legislation that you have bipartisanly written through this committee and have discussed, aligned with what the FCC's current action is, is really all moving on the right track at the same time.

So I think there is some really interesting momentum that we don't always see here in Washington, DC, to actually take care of the mapping issue, so I just applaud all of you for that and again the coordination with the FCC.

Mr. SPALTER. Congressman, we are literally on the precipice of being able to stick the landing on national bipartisan legislation coupled with the important work that our colleagues at the FCC are doing to advance the idea that we can have a National Broadband Map. And once we accomplish that goal, there will be innumerable ways to catalyze additional insight, analytics, reporting, and other elements that will speak to exactly the issue that you are driving, which is how can we better support all Americans in rural communities, exurban, suburban, and urban communities as well to realize the power and potential of broadband and make it more affordable.

Mr. VEASEY. And if I could just ask with the remainder of my time just one very, if very hypothetical question, so if a company were able to deploy low Earth orbit satellite to provide coverage in these gaps that we have talked about today, would current providers, would there still be the need on the ground from people represented here today and others to still sort of fill in these gaps?

Mr. SPELLMEYER. I would offer on behalf of the wireless industry that I am not certain that those lower orbit satellites are going to deliver a mobile product that will be sustainable, you know, inside an automobile at 70 miles an hour.

Mr. VEASEY. Interesting. OK.

Mr. SPALTER. Many of our companies at USTelecom are advancing creative ways of partnering with certain satellite communities to reach last-mile geographies to ensure that there could be potential service. But we actually have to be very, very careful that we are prioritizing spending Federal resources for broadband deployment that can actually be sustainable and can help rural communities achieve benefits of things like 5G and other next generation technologies through wireline technology access that is just not going to be available through platforms like satellite.

Mr. VEASEY. OK, thank you.

Mr. DOYLE. The gentleman's time has expired. The Chair recognizes Mr. Cárdenas for 5 minutes.

Mr. CÁRDENAS. Thank you very much, Mr. Chair. I appreciate the opportunity to have this discussion before the public on this very important issue. And it is something that, unfortunately, the American public doesn't understand how important it is and how directly affected they are because everybody is somehow, someway, connected to one of these.

And so I have a question. Ms. Bloomfield, why do you think a challenge process is necessary even if the maps are more granular?

Ms. BLOOMFIELD. So I think the granular maps is a really good start and I think the challenge process really allows us to make sure we have integrity in the program, again particularly when you are talking about either Federal support of someway, whether it is Universal Service or it is ReConnect through USDA or community connect programs, any of these programs, or when you are thinking about a policy change.

So I think again it is that opportunity, and I don't want to repeat myself, but to do the sanity check, to be the validation process at the back end. So you have the process in the front end with the mapping and the standards and all of those pieces; it is the ability to do the validation on the back end to make sure that the information you have is what you were told you had.

Mr. CÁRDENAS. OK. Also, Ms. Bloomfield, when mapping broadband why is it important to consider latency and usage limits? Isn't tracking speed enough?

Ms. BLOOMFIELD. So I think again we go back to what is the consumer, you know, what are they going through. We know, you know, I represent small community-based telecommunication providers. You know, the number of folks that have actually have poor service a lot of times is because they bought the router on eBay.

So there are a lot of different things that we need to be looking at, but, really, when you are thinking about particularly as we

move forward and particularly as the Internet of Things becomes a more, a bigger part of our life and our economy, we need to make sure that folks are getting service that is in real time and that they are not stymied by usage caps that might impact the affordability of the product that they are receiving.

Mr. CÁRDENAS. OK, thank you.

And then also to Mr. Assey, we agree we want to create these maps as soon as possible. How do you imagine the agencies will coordinate to get this done?

Mr. ASSEY. Well, we have taken a giant step in August with the adoption of the order directing providers to move to shapefile reporting. I think we are working with USAC and waiting on guidance for some of the standards that are going to be required for that. But I think we are well on our way.

Mr. CÁRDENAS. OK, and the coordination, is that healthy?

Mr. ASSEY. It is absolutely essential and it is one of the things that we are very gratified that the committee is considering putting its mark in and encouraging that type of coordination. I do think that the best thing that will encourage that coordination is actually the success of getting a better map, because then agencies will be incented to want to use that map and for everyone to be singing off the same sheet of music.

Mr. CÁRDENAS. OK, better map. Who wins if we don't have better mapping?

Mr. SPALTER. Certainly not rural America, certainly not the many, many hundreds of thousands enterprises and individuals and families and communities that still are in unserved communities that are considered to be served. Certainly not the public treasury, our fiduciary duty to use funds that are available through our taxpayers to their best and highest purpose.

If we are not doing the right work on getting our maps right at the front end, I will assure you, through the Rural Digital Opportunity Fund or any other future broadband support program, if we do not have this granular location fabric to start we will be misapplying public funds and that would be a shame.

Mr. CÁRDENAS. Does this have a positive effect when it comes to public safety, health care, things of that nature, because now this is being integrated in every walk of life. It is not just out of convenience, you know, for convenience tools, you know, talking on the phone with your friend or what have you. We are talking about this is, you know, directly affecting people's ability to respond in emergency situations, et cetera, correct?

Mr. SPALTER. The growth of one of the most epidemic medical chronic conditions in America is diabetes and, unfortunately, many of those who are suffering from that condition live in remote, rural communities. If we are denying the ability to make sure we are pinpointing accurately, the resources that we need to get to those communities through, inspired by the legislation that is before us, we will be not serving not only broadband but not serving the health of Americans.

Mr. CÁRDENAS. Mr. Chairman, if I can just have a few seconds to take a point of personal privilege to thank my colleagues who are continuing to focus on these issues and introducing these bills. And for us to have this dialogue and debate about what the proper

paths going forward, even though that on many occasions many of our talented staff are stolen to the private industry, we are still capable and we are still getting the job done. Thank you very much, Mr. Chairman.

Mr. DOYLE. I thank the gentleman. The Chair now recognizes Ms. Rodgers for 5 minutes.

Mrs. RODGERS. Thank you, Mr. Chairman, and I appreciate you allowing me to waive on to the committee today and join you all in this important discussion.

As technology becomes increasingly integrated into every aspect of our lives, our economy, our society, it is more important than ever to ensure that all Americans, especially those in the rural areas, have access to high-speed and an internet connection. Coming from Eastern Washington, living in Eastern Washington, now representing Eastern Washington in Congress, in too many of the areas that I drive when getting around the district and visiting the various communities, coverages remain static. I was reminded of it earlier this year. I was in a couple of communities just south of Spokane. Spokane is the second-largest city in Washington State and I was just 15, 20 miles south of Spokane in Rockford and Fairfield and they had nothing.

So there is a growing and growing drumbeat that, you know, we—this needs to be a priority and I join in that. Because whether it is economic development, whether it is health care, telehealth, so much of the future of health care is around telehealth, education, our kids are doing more and more homework online and personalized education, you know, or health care, it is our future.

So I, in August I hosted a couple of roundtable discussions in Eastern Washington, one in Colville, which is more north of Spokane, 70 miles north, and then one in Pomeroy that is even further south, and it was good. It was good to bring the community together, the elected officials, the ISPs, others, business owners, healthcare providers that are involved in trying to solve this issue in Eastern Washington. One of the main barriers that seems to be common right now is ensuring that we have the accurate maps and that this is so important as we have this discussion about how are we going to ensure that every area is covered.

Earlier this year, I joined with Mr. O'Halleran in introducing the Broadband Data Improvement Act and it is one of several bipartisan bills that we are considering here today. And this bill tackles the inaccurate mapping on several fronts. One, by increasing the granularity of provider-reported data using shapefiles; two, by utilizing a three-pronged validation process including the use of third-party data and an on-the-ground accuracy verification; and third, ensuring a robust challenge process. Those are the three main areas. It also provides assistance to smaller providers to minimize the burden of the reporting requirements.

And I just want to thank all of the witnesses today for being here today and for your work to improve broadband access for all Americans. I am encouraged by the variety and the priority that this committee is making to move forward in a bipartisan way so that we can ensure that the limited Federal funds that we do have, but that we have been prioritizing for this effort, reach the areas where the need is the most.

I wanted to ask if you could talk just a little bit more about the importance of having a robust validation and challenge process to ensure the accuracy of our broadband maps in addition to increasing granularity. And, specifically, what role should third-party data play in this process?

And, Ms. Bloomfield, I wanted to ask you that and then open it up.

Ms. BLOOMFIELD. So, first of all, thank you so much for your leadership. It has been very key. And as you listed the key points in your legislation, they are all things that we absolutely endorse and support and think are important.

So when you talk about validation, you know, there are a lot of different ways to do it. You know, one of the things we have all talked about as a panel is how do you incorporate things like crowdsourcing, how do you actually gather that information from people served on the ground. I think that is a really interesting and intriguing idea. I would just say though that again, what you don't want to do is create a process that becomes really a burden where somebody has to chase down every complaint and respond.

And, you know, how do we actually capture trends so that we don't get bogged down in that process and we can continue to move forward to make sure that the maps are accurate and people can continue to spend more of their time and energy actually building the broadband then reporting back through that process. So I think it is important, but I think it has to be done very thoughtfully.

But again, I think that along with the challenge process so at the back end you can actually really do that verification and it is going to be very significant.

Mrs. RODGERS. Anyone else?

Mr. SPELLMEYER. I would add, so I think a challenge process is vital. You know, the FCC did a one-time data collection and if we hadn't had a challenge process there, those maps that show all of Eastern Washington as covered would have been locked into place and used by the FCC. You know, on the wireless side we used shapefiles to build that last map, but without a challenge process to go out and test it we would have been stuck in a real mess.

So the good news is that, you know, all of the legislation in front of us puts us in the right direction to fix it once and for all.

Mrs. RODGERS. Great. Thank you all. I yield back.

Mr. DOYLE. OK, our time has expired. I thank the gentlelady. The Chair requests unanimous consent to enter the following documents into the record: a letter from the Western Governors Association, a letter from the National Rural Electric Cooperative Association and NTCA–The Rural Broadband Association. Without objection, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. DOYLE. Let me thank all the witnesses for their participation in today's hearing. You have been a most excellent panel and we have enjoyed hearing from you.

I want to remind all Members that, pursuant to the committee rules, they have 10 business days to submit additional questions for the record to be answered by the witnesses who have appeared, and I ask each witness to respond promptly to any such questions that you may receive.

At this time, the subcommittee is adjourned.
[Whereupon, at 1:27 p.m., the subcommittee was adjourned.]
[Material submitted for inclusion in the record follows:]

116TH CONGRESS
1ST SESSION

H. R. 4229

To require the Federal Communications Commission to issue rules relating to the collection of data with respect to the availability of broadband services, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 6, 2019

Mr. LOEBSACK (for himself, Mr. LATTA, Mr. MCEACHIN, and Mr. LONG) introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To require the Federal Communications Commission to issue rules relating to the collection of data with respect to the availability of broadband services, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*

2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Broadband Deploy-

5 ment Accuracy and Technological Availability Act" or the

6 "Broadband DATA Act".

7 **SEC. 2. DEFINITIONS.**

8 In this Act:

1   (1) BROADBAND INTERNET ACCESS SERVICE.—

2 The term "broadband internet access service" has

3 the meaning given the term in section 8.1(b) of title

4 47, Code of Federal Regulations, or any successor

5 regulation.

6   (2) BROADBAND MAP.—The term "Broadband

7 Map" means the map created by the Commission

8 under section 3(c)(1)(A).

9   (3) CELL EDGE PROBABILITY.—The term "cell

10 edge probability" means the likelihood that the min-

11 imum threshold download and upload speeds with

12 respect to broadband internet access service will be

13 met or exceeded at a distance from a base station

14 that is intended to indicate the ultimate edge of the

15 coverage area of a cell.

16   (4) CELL LOADING.—The term "cell loading"

17 means the percentage of the available air interface

18 resources of a base station that are used by con-

19 sumers with respect to broadband internet access

20 service.

21   (5) CLUTTER.—The term "clutter" means a

22 natural or man-made surface feature that affects the

23 propagation of a signal from a base station.

24   (6) COMMISSION.—The term "Commission"

25 means the Federal Communications Commission.

1   (7) FABRIC.—The term "Fabric" means the
2 Broadband Serviceable Location Fabric established
3 under section 3(b)(1)(B).
4   (8) FORM 477.—The term "Form 477" means
5 Form 477 of the Commission relating to local tele-
6 phone competition and broadband reporting.
7   (9) INDIAN TRIBE.—The term "Indian Tribe"
8 has the meaning given the term "Indian tribe" in
9 section 4 of the Indian Self-Determination and Edu-
10 cation Assistance Act (25 U.S.C. 5304).
11   (10) MOBILITY FUND PHASE II.—The term
12 "Mobility Fund Phase II" means the second phase
13 of the proceeding to provide universal service sup-
14 port from the Mobility Fund (WC Docket No. 10–
15 90; WT Docket No. 10–208).
16   (11) PROPAGATION MODEL.—The term "propa-
17 gation model" means a mathematical formulation
18 for the characterization of radio wave propagation as
19 a function of frequency, distance, and other condi-
20 tions.
21   (12) PROVIDER.—The term "provider" means a
22 provider of fixed or mobile broadband internet access
23 service.
24   (13) QUALITY OF SERVICE.—The term "quality
25 of service" means information regarding offered

1 download and upload speeds and latency of a pro-

2 vider's broadband internet access service as deter-

3 mined by and to the extent otherwise collected by

4 the Commission.

5 (14) SHAPEFILE.—The term "shapefile" means

6 a digital storage format containing geospatial or lo-

7 cation-based data and attribute information—

8 (A) regarding the availability of broadband

9 internet access service; and

10 (B) that can be viewed, edited, and

11 mapped in geographic information system soft-

12 ware.

13 (15) STANDARD BROADBAND INSTALLATION.—

14 The term "standard broadband installation"—

15 (A) means the initiation by a provider of

16 new fixed broadband internet access service

17 with no charges or delays attributable to the ex-

18 tension of the network of the provider; and

19 (B) includes the initiation of fixed

20 broadband internet access service through rou-

21 tine installation that can be completed not later

22 than 10 business days after the date on which

23 the service request is submitted.

24 **SEC. 3. BROADBAND MAPS.**

25 (a) RULES.—

5

1   (1) IN GENERAL.—Not later than 180 days
2 after the date of enactment of this Act, the Commis-
3 sion shall issue final rules that shall—
4   (A) in a manner that balances public ac-
5   cess to data with adequate protections for pri-
6   vacy and for confidential or competitively sen-
7   sitive information, require the collection and
8   dissemination of granular data, as determined
9   by the Commission—
10   (i) relating to the availability and
11   quality of service of terrestrial fixed, fixed
12   wireless, satellite, and mobile broadband
13   internet access service; and
14   (ii) that the Commission shall use to
15   compile the maps created under subsection
16   (c)(1) (referred to in this section as "cov-
17   erage maps"), which the Commission shall
18   make publicly available; and
19   (B) establish—
20   (i) processes through which the Com-
21   mission can verify the accuracy of data
22   submitted under subsection (b)(2);
23   (ii) processes and procedures through
24   which the Commission, and, as necessary,
25   other entities or persons submitting infor-

6

1   mation under this Act, can protect the se-

2   curity, privacy, and confidentiality of—

3   (I) information contained in the

4   Fabric;

5   (II) the dataset created under

6   subsection (b)(1) supporting the Fab-

7   ric; and

8   (III) the data submitted under

9   subsection (b)(2);

10   (iii) the challenge process described in

11   subsection (b)(5); and

12   (iv) the process described in section

13   4(b).

14   (2) OTHER DATA.—In issuing the rules under

15   paragraph (1), the Commission shall develop a proc-

16   ess through which the Commission can collect

17   verified data for use in the coverage maps from—

18   (A) State, local, and Tribal governmental

19   entities that are primarily responsible for map-

20   ping or tracking broadband internet access

21   service coverage for a State, unit of local gov-

22   ernment, or Indian Tribe, as applicable;

23   (B) third parties, including industry anal-

24   ysis mapping or tracking broadband internet

25   access service coverage and quality of service, if

7

1   the Commission determines that it is in the

2   public interest to use such data in—

3   (i) the development of the coverage

4   maps; or

5   (ii) the verification of data submitted

6   under subsection (b); and

7   (C) other Federal agencies.

8   (3) UPDATES.—The Commission shall revise

9   the rules issued under paragraph (1) to—

10   (A) reflect changes in technology;

11   (B) ensure the accuracy of propagation

12   models, as further provided in subsection

13   (b)(3); and

14   (C) improve the usefulness of the coverage

15   maps.

16   (b) CONTENT OF RULES.—

17   (1) ESTABLISHMENT OF A SERVICEABLE LOCA-

18   TION FABRIC REGARDING FIXED BROADBAND.—

19   (A) DATASET.—

20   (i) IN GENERAL.—The Commission

21   shall create a common dataset of all loca-

22   tions in the United States where fixed

23   broadband internet access service can be

24   installed, as determined by the Commis-

25   sion.

1   (ii) CONTRACTING.—

2   (I) IN GENERAL.—Subject to

3   subclauses (II) and (III), the Commis-

4   sion may contract with an entity with

5   expertise with respect to geographic

6   information systems (referred to in

7   this subsection as "GIS") to create

8   and maintain the dataset under clause

9   (i).

10   (II) APPLICATION OF THE FED-

11   ERAL ACQUISITION REGULATION.—A

12   contract into which the Commission

13   enters under subclause (I) shall in all

14   respects comply with applicable provi-

15   sions of the Federal Acquisition Regu-

16   lation.

17   (III) LIMITATIONS.—With re-

18   spect to a contract into which the

19   Commission enters under subclause

20   (I)—

21   (aa) the entity with which

22   the Commission contracts shall

23   be selected through a competitive

24   bid process that is transparent

25   and open; and

1   (bb) the contract shall be for

2   a term of not longer than 5

3   years, after which the Commis-

4   sion may enter into a new con-

5   tract—

6   (AA) with an entity,

7   and for the purposes, de-

8   scribed in clause (i); and

9   (BB) that complies

10   with the requirements under

11   subclause (II) and this sub-

12   clause.

13   (B) FABRIC.—The rules issued by the

14 Commission under subsection (a)(1) shall estab-

15 lish the Broadband Serviceable Location Fab-

16 ric, which shall—

17   (i) contain geocoded information for

18   each location identified under subpara-

19   graph (A)(i);

20   (ii) serve as the foundation upon

21   which all data relating to the availability of

22   fixed broadband internet access service col-

23   lected under paragraph (2)(A) shall be re-

24   ported and overlaid;

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10

1   (iii) be compatible with commonly
2   used GIS software; and
3   (iv) at a minimum, be updated every
4   6 months by the Commission.
5   (C) IMPLEMENTATION PRIORITY.—The
6   Commission shall prioritize implementing the
7   Fabric for rural and insular areas of the United
8   States.
9   (2) COLLECTION OF INFORMATION.—The rules
10   issued by the Commission under subsection (a)(1)
11   shall include uniform standards for the reporting of
12   broadband internet access service data that the
13   Commission shall collect—
14   (A) from each provider of terrestrial fixed,
15   fixed wireless, or satellite broadband internet
16   access service, which shall include data that—
17   (i) documents the areas where the
18   provider—
19   (I) has actually built out the
20   broadband network infrastructure of
21   the provider such that the provider is
22   able to provide that service; and
23   (II) could provide that service, as
24   determined by identifying where the
25   provider is capable of performing a

11

1   standard broadband installation, if ap-

2   plicable;

3   (ii) includes information regarding

4 download and upload speeds, at various

5 thresholds established by the Commission,

6 and if applicable, latency with respect to

7 broadband internet access service that the

8 provider makes available;

9   (iii) can be georeferenced to the GIS

10 data in the Fabric;

11   (iv) the provider shall report as—

12   (I) with respect to providers of

13 fixed wireless broadband internet ac-

14 cess service—

15   (aa) propagation maps and

16 propagation model details that—

17   (AA) satisfy standards

18 that are similar to those ap-

19 plicable to providers of mo-

20 bile broadband internet ac-

21 cess service under subpara-

22 graph (B) with respect to

23 propagation maps and prop-

24 agation model details, taking

25 into account material dif-

12

1   ferences between fixed wire-

2   less and mobile broadband

3   internet access service; and

4   (BB) reflect the speeds

5   and latency of the service

6   provided by the provider; or

7   (bb) a list of addresses or lo-

8   cations that constitute the service

9   area of the provider, except that

10   the Commission—

11   (AA) may only permit,

12   and not require, a provider

13   to report the data using that

14   means of reporting; and

15   (BB) in the rules

16   issued under subsection

17   (a)(1), shall provide a meth-

18   od for using that means of

19   reporting with respect to

20   Tribal areas; and

21   (II) with respect to providers of

22   terrestrial fixed and satellite

23   broadband internet access service—

24   (aa) polygon shapefiles; or

13

1   (bb) a list of addresses or lo-

2   cations that constitute the service

3   area of the provider, except that

4   the Commission—

5   (AA) may only permit,

6   and not require, a provider

7   to report the data using that

8   means of reporting; and

9   (BB) in the rules

10   issued under subsection

11   (a)(1), shall provide a meth-

12   od for using that means of

13   reporting with respect to

14   Tribal areas; and

15   (v) the Commission determines is ap-

16   propriate with respect to certain tech-

17   nologies in order to ensure that the

18   Broadband Map is granular and accurate;

19   and

20   (B) from each provider of mobile

21   broadband internet access service, which shall

22   include propagation maps, and the propagation

23   models on which those maps are based, that in-

24   dicate the current (as of the date on which the

25   information is collected) fourth generation

14

1   Long-Term Evolution (commonly referred to as
2   "4G LTE") mobile broadband internet access
3   service coverage of the provider, which shall—
4   (i) take into consideration the effect
5   of clutter; and
6   (ii) satisfy—
7   (I) the requirements of having—
8   (aa) a download speed of 5
9   megabits per second and an
10   upload speed of 1 megabit per
11   second with a cell edge prob-
12   ability of not less than 90 per-
13   cent; and
14   (bb) cell loading of 50 per-
15   cent; and
16   (II) any other parameter that the
17   Commission determines to be nec-
18   essary to create a map under sub-
19   section (c)(1)(C) that is more precise
20   than the map produced as a result of
21   the submissions under the Mobility
22   Fund Phase II information collection.
23   (3) UPDATE OF REPORTING STANDARDS FOR
24   MOBILE BROADBAND INTERNET ACCESS SERVICE.—
25   For the purposes of paragraph (2)(B), if the Com-

1 mission determines that the reporting standards

2 under that paragraph are insufficient to collect accu-

3 rate propagation maps and propagation model de-

4 tails with respect to future generations of mobile

5 broadband internet access service technologies, the

6 Commission shall immediately commence a rule-

7 making to adopt new reporting standards with re-

8 spect to those technologies that—

9 (A) shall be the functional equivalent of

10 the standards required under paragraph (2)(B);

11 and

12 (B) allow for the collection of propagation

13 maps and propagation model details that are as

14 accurate and granular as, or more accurate and

15 granular than, the maps and model details col-

16 lected by the Commission under such paragraph

17 (2)(B).

18 (4) CERTIFICATION AND VERIFICATION.—With

19 respect to a provider that submits information to the

20 Commission under paragraph (2)—

21 (A) the provider shall include in each sub-

22 mission a certification from a corporate officer

23 of the provider that the officer has examined

24 the information contained in the submission

25 and that, to the best of the officer's actual

1   knowledge, information, and belief, all state-

2   ments of fact contained in the submission are

3   true and correct; and

4   (B) the Commission shall verify the accu-

5   racy and reliability of the information in ac-

6   cordance with measures established by the

7   Commission.

8   (5) CHALLENGE PROCESS.—

9   (A) IN GENERAL.—In the rules issued

10   under subsection (a), and subject to subpara-

11   graph (B), the Commission shall establish a

12   user-friendly challenge process through which

13   consumers, State, local, and Tribal govern-

14   mental entities, and other entities may submit

15   coverage data to the Commission to challenge

16   the accuracy of—

17   (i) the coverage maps;

18   (ii) any information submitted by a

19   provider regarding the availability of

20   broadband internet access service; or

21   (iii) the information included in the

22   Fabric.

23   (B) CONSIDERATIONS; VERIFICATION; RE-

24   SPONSE TO CHALLENGES.—In establishing the

17

1   challenge process required under subparagraph

2   (A), the Commission shall—

3   (i) consider—

4   (I) the types of information that

5   an entity submitting a challenge

6   should provide to the Commission in

7   support of the challenge;

8   (II) the appropriate level of gran-

9   ularity for the information described

10   in subclause (I);

11   (III) the need to mitigate the

12   time and expense incurred by, and the

13   administrative burdens placed on, en-

14   tities in—

15   (aa) challenging the accu-

16   racy of a coverage map; and

17   (bb) responding to chal-

18   lenges described in item (aa); and

19   (IV) the costs to consumers and

20   providers resulting from a

21   misallocation of funds because of a re-

22   liance on outdated or otherwise inac-

23   curate information in the coverage

24   maps;

1   (ii) include a process for verifying the

2   data submitted through the challenge proc-

3   ess in order to ensure the reliability of that

4   data;

5   (iii) allow providers to respond to

6   challenges submitted through the challenge

7   process; and

8   (iv) develop an online mechanism,

9   which—

10   (I) shall be integrated into the

11   coverage maps; and

12   (II) allows for an entity described

13   in subparagraph (A) to submit a chal-

14   lenge under the challenge process.

15   (C) USE OF CHALLENGES.—The rules

16   issued to establish the challenge process under

17   subparagraph (A) shall include—

18   (i) a process for the speedy resolution

19   of challenges; and

20   (ii) a process for the regular and ex-

21   peditious updating of the coverage maps

22   and granular data the Commission dis-

23   seminates as challenges are resolved.

24   (6) REFORM OF FORM 477 PROCESS.—

1   (A) IN GENERAL.—Not later than 180

2 days after the date on which the rules issued

3 under subsection (a) take effect, the Commis-

4 sion shall—

5   (i) reform the Form 477 broadband

6 deployment service availability collection

7 process of the Commission to achieve the

8 purposes of this Act and in a manner that

9 enables the comparison of data and maps

10 produced before the implementation of this

11 Act with data and coverage maps produced

12 after the implementation of this Act; and

13   (ii) harmonize reporting requirements

14 and procedures regarding the deployment

15 of broadband internet access service that,

16 as of the date on which the rules issued

17 under subsection (a) take effect, are in ef-

18 fect.

19   (B) CONTINUED COLLECTION AND RE-

20 PORTING.—On and after the date on which the

21 Commission carries out subparagraph (A), the

22 Commission shall continue to collect and pub-

23 licly report subscription data that the Commis-

24 sion collected through the Form 477 broadband

20

1   deployment service availability process, as in ef-

2   fect on July 1, 2019.

3   (c) MAPS.—The Commission shall—

4   (1) create—

5   (A) the Broadband Map, which shall de-

6   pict—

7   (i) the extent of the availability of

8   broadband internet access service in the

9   United States, without regard to whether

10   that service is fixed broadband internet ac-

11   cess service or mobile broadband internet

12   access service, which shall be based on

13   data collected by the Commission from all

14   providers; and

15   (ii) the areas of the United States

16   that remain unserved by providers;

17   (B) a map that depicts the availability of

18   fixed broadband internet access service, which

19   shall be based on data collected by the Commis-

20   sion from providers under subsection (b)(2)(A);

21   and

22   (C) a map that depicts the availability of

23   mobile broadband internet access service, which

24   shall be based on data collected by the Commis-

25   sion from providers under subsection (b)(2)(B);

1   (2) use the maps created under paragraph

2   (1)—

3   (A) to determine the areas in which terres-

4   trial fixed, fixed wireless, mobile, and satellite

5   broadband internet access service is and is not

6   available; and

7   (B) when making any new award of fund-

8   ing with respect to the deployment of

9   broadband internet access service;

10   (3) update the maps created under paragraph

11   (1) not less frequently than biannually using the

12   most recent data collected from providers under sub-

13   section (b)(2);

14   (4) establish a process requiring the Depart-

15   ment of Agriculture and the National Telecommuni-

16   cations and Information Administration to consult

17   the maps created under paragraph (1) when, as of

18   the date on which the process is established or on

19   any future date, distributing funds relating to the

20   deployment of broadband internet access service

21   under any program administered by the Rural Utili-

22   ties Service or the Administration, respectively;

23   (5) establish a process to make the data col-

24   lected under subsection (b)(2) available to the Na-

22

1   tional Telecommunications and Information Admin-

2   istration; and

3   (6) make public at an appropriate level of gran-

4   ularity—

5   (A) the maps created under paragraph (1);

6   and

7   (B) the data collected by the Commission

8   with respect to broadband internet access serv-

9   ice availability and quality of service.

10   (d) DELAYED EFFECTIVE DATE OF QUALITY OF

11 SERVICE RULES.—Any requirement of a rule relating to

12 quality of service issued under subsection (a) shall take

13 effect not earlier than the date that is 180 days after the

14 date on which the Commission issues such rule.

15 **SEC. 4. IMPROVING DATA ACCURACY.**

16   (a) AUDITS.—The Commission shall conduct regular

17 audits of information submitted to the Commission by pro-

18 viders under section (3)(b)(2) to ensure that the providers

19 are complying with this Act.

20   (b) CROWDSOURCING.—

21   (1) IN GENERAL.—The Commission shall de-

22   velop a process through which persons in the United

23   States may submit specific information about the de-

24   ployment and availability of broadband internet ac-

25   cess service in the United States so that the infor-

1   mation may be used to verify and supplement infor-

2   mation provided by providers of broadband internet

3   access service for inclusion in the maps created

4   under section 3(c)(1).

5   (2) COLLABORATION.—As part of the efforts of

6   the Commission to facilitate the ability of persons to

7   submit information under paragraph (1), the Com-

8   mission shall issue guidance and other information

9   as appropriate to ensure that the information sub-

10   mitted is uniform and consistent with the data sub-

11   mitted by providers under section 3(b)(2).

12   (c) TECHNICAL ASSISTANCE TO INDIAN TRIBES.—

13   (1) IN GENERAL.—Subject to paragraph (2),

14   the Commission shall hold workshops for Tribal gov-

15   ernments in each of the 12 Bureau of Indian Affairs

16   regions to provide technical assistance with the col-

17   lection and submission of data under section 3(a)(2).

18   (2) ANNUAL REVIEW.—Each year, the Commis-

19   sion, in consultation with Indian Tribes, shall review

20   the need for continued workshops required under

21   paragraph (1).

22   (d) TECHNICAL ASSISTANCE TO SMALL SERVICE

23   PROVIDERS.—The Commission shall establish a process

24   through which a provider that has fewer than 100,000 ac-

25   tive broadband internet access service connections may re-

1 quest and receive assistance from the Commission with re-

2 spect to geographic information system data processing to

3 ensure that the provider is able to comply with the require-

4 ments under section 3(b) in a timely and accurate manner.

5 **SEC. 5. COST.**

6   (a) IN GENERAL.—Beginning with the first full fiscal

7 year after the date of enactment of this Act, the Commis-

8 sion shall include in the budget submission of the Commis-

9 sion to the President under sections 1105(a) and 1108

10 of title 31, United States Code, amounts sufficient to en-

11 sure the proper and continued functioning of the respon-

12 sibilities of the Commission under this Act.

13   (b) COST OF FABRIC.—

14   (1) USF.—The Commission may not use funds

15   from the universal service programs of the Commis-

16   sion established under section 254 of the Commu-

17   nications Act of 1934 (47 U.S.C. 254), and the reg-

18   ulations issued under that section, to pay for any

19   costs associated with this Act.

20   (2) OTHER FUNDS.—The Commission may re-

21   cover costs associated with this Act under section 9

22   of the Communications Act of 1934 (47 U.S.C. 9)

23   to the extent provided for in an appropriation Act,

24   as required under subsection (a) of that section.

1 **SEC. 6. OTHER PROVISIONS.**

2   (a) OMB.—Notwithstanding any other provision of

3 law, the initial rulemaking required under section 3(a)(1)

4 shall be exempt from review by the Office of Management

5 and Budget.

6   (b) PRA.—Chapter 35 of title 44, United States

7 Code (commonly known as the "Paperwork Reduction

8 Act") shall not apply to the initial rulemaking required

9 under section 3(a)(1).

10   (c) EXECUTION OF RESPONSIBILITIES.—Except as

11 provided in section 3(b)(1)(A)(ii), the Commission—

12   (1) including the offices of the Commission,

13   shall carry out the responsibilities assigned to the

14   Commission under this Act; and

15   (2) may not delegate any of the responsibilities

16   assigned to the Commission under this Act to any

17   third party, including the Universal Service Adminis-

18   trative Company.

19   (d) REPORTING.—Each fiscal year, the Commission

20 shall submit to the Committee on Commerce, Science, and

21 Transportation of the Senate and the Committee on En-

22 ergy and Commerce of the House of Representatives a re-

23 port that summarizes the implementation of this Act and

24 associated enforcement activities conducted during the

25 previous fiscal year.

○

116TH CONGRESS
1ST SESSION **H. R. 4128**

To improve the collection and aggregation of fixed and mobile broadband
internet service coverage data, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 30, 2019

Mr. LUJÁN (for himself, Mr. BILIRAKIS, and Mr. MICHAEL F. DOYLE of
Pennsylvania) introduced the following bill; which was referred to the
Committee on Energy and Commerce

A BILL

To improve the collection and aggregation of fixed and mobile
broadband internet service coverage data, and for other
purposes.

1   *Be it enacted by the Senate and House of Representa-*

2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4   This Act may be cited as the "Map Improvement Act

5 of 2019".

6 **SEC. 2. DEFINITIONS.**

7   In this Act:

2

1   (1) ASSISTANT SECRETARY.—The term "Assist-

2 ant Secretary" means the Assistant Secretary of

3 Commerce for Communications and Information.

4   (2) BROADBAND INTERNET SERVICE.—The

5 term "broadband internet service"—

6   (A) means mass-market retail service by

7   wire or radio that provides the capability to

8   transmit data to and receive data from all or

9   substantially all internet endpoints, including

10   any capabilities that are incidental to and en-

11   able the operation of the communications serv-

12   ice;

13   (B) includes any service that the Commis-

14   sion finds to be providing a functional equiva-

15   lent of the service described in subparagraph

16   (A) or that is used to evade the protections set

17   forth in part 8 of title 47, Code of Federal Reg-

18   ulations, or any successor thereto; and

19   (C) does not include dial-up internet serv-

20   ice.

21   (3) COMMISSION.—The term "Commission"

22 means the Federal Communications Commission.

23   (4) END USER.—The term "end user" means

24 any individual or entity that uses a broadband inter-

25 net service.

1   (5) FIXED BROADBAND INTERNET SERVICE.—

2 The term "fixed broadband internet service"

3 means—

4   (A) a broadband internet service that

5   serves end users primarily at fixed endpoints

6   using stationary equipment; and

7   (B) includes fixed wireless services, includ-

8   ing fixed unlicensed wireless services, and fixed

9   satellite services.

10   (6) GIS.—The term "GIS" means geographic

11 information systems.

12   (7) MOBILE BROADBAND INTERNET SERVICE.—

13 The term "mobile broadband internet service" shall

14 have the meaning given such term by the Commis-

15 sion for purposes of this Act.

16   (8) STATE.—The term "State" means each

17 State of the United States, the District of Columbia,

18 each commonwealth, territory, or possession of the

19 United States, and each federally recognized Indian

20 Tribe.

21 **SEC. 3. COLLECTION AND MAPPING OF FIXED AND MOBILE**

22   **BROADBAND INTERNET SERVICE COVERAGE.**

23 (a) STANDARDIZED METHODOLOGY RULE.—

24   (1) IN GENERAL.—Not later than 1 year after

25 the date of enactment of this Act, the Commission,

4

1   in coordination with the Assistant Secretary, shall
2   promulgate a final rule to establish a standardized
3   methodology for collecting and mapping accurate
4   fixed broadband internet service and mobile
5   broadband internet service coverage data in the
6   United States, which shall—

7   (A) ensure that coverage data for fixed
8   broadband internet service and mobile
9   broadband internet service is collected in a
10   standardized, consistent, and robust manner;

11   (B) improve the validity and reliability of
12   coverage data;

13   (C) increase the efficiency of coverage data
14   collection;

15   (D) contain standard definitions for dif-
16   ferent speed tiers, such as the 2G, 3G, 4G, and
17   4G LTE tiers and the equivalent for fixed
18   broadband internet service;

19   (E) ensure that the collection and valida-
20   tion process occurs on a regular basis; and

21   (F) establish a standardized ongoing vali-
22   dation process and public feedback mechanism
23   that will allow for consumers, State and local
24   officials, and broadband internet service pro-
25   viders to submit data to the Commission to

5

1   verify coverage data from broadband internet

2   service providers and challenge any aspects of

3   such data believed to be inaccurate.

4   (2) CONSIDERATIONS.—In promulgating the

5   rule required under paragraph (1), the Commission

6   shall consider—

7   (A) coordinating with the Postmaster Gen-

8   eral, the heads of other Federal agencies that

9   operate delivery fleet vehicles, and the Director

10   of the Bureau of the Census for assistance with

11   data collection and the feasibility of using more

12   granular address level data; and

13   (B) creating 1 centralized national map

14   with multiple layers, including a layer each for

15   fixed broadband internet service and mobile

16   broadband internet service, which may be used

17   in determining eligibility for all Federal

18   broadband internet service grant, loan, and sub-

19   sidy programs.

20   (3) ESTABLISHMENT OF OFFICE.—The Com-

21   mission shall establish an Office of Broadband Data

22   Collection and Mapping within the Commission to

23   serve as the central point of collection, aggregation,

24   and validation of data collected under the standard-

25   ized methodology established under this subsection.

6

1   (b) TECHNICAL ASSISTANCE PROGRAM.—

2   (1) IN GENERAL.—The Assistant Secretary

3   shall establish a technical assistance program under

4   which the Assistant Secretary shall provide grants to

5   State and local entities, such as regional planning

6   organizations, to—

7   (A) assist such entities with mapping and

8   the development of a GIS-based map of existing

9   fixed broadband internet service and mobile

10   broadband internet service; and

11   (B) assess current broadband internet

12   service adoption rates and advertised broadband

13   internet service pricing in the community.

14   (2) USE OF FUNDS.—Funds received under this

15   subsection—

16   (A) shall be used to—

17   (i) carry out the activities described in

18   subparagraphs (A) and (B) of paragraph

19   (1); and

20   (ii) participate in the standardized on-

21   going validation process and public feed-

22   back mechanism described in subsection

23   (a)(1)(F); and

24   (B) may be used to purchase GIS software

25   and for technical assistance with that software.

140

7

1   (3) OTHER USES FOR GIS SOFTWARE.—A
2   grantee may use GIS software acquired using funds
3   received under this subsection for other purposes in
4   addition to broadband internet service mapping.

○

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116TH CONGRESS
1ST SESSION

H. R. 4227

To prohibit the submission to the Federal Communications Commission of broadband internet access service coverage information or data for the purposes of compiling an inaccurate broadband coverage map.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 6, 2019

Mr. MCEACHIN (for himself, Mr. LONG, Mr. LOEBSACK, and Mr. LATTA) introduced the following bill; which was referred to the Committee on Energy and Commerce

---

A BILL

To prohibit the submission to the Federal Communications Commission of broadband internet access service coverage information or data for the purposes of compiling an inaccurate broadband coverage map.

1   *Be it enacted by the Senate and House of Representa-*

2   *tives of the United States of America in Congress assembled,*

3   **SECTION 1. SHORT TITLE.**

4   This Act may be cited as the "Mapping Accuracy

5   Promotes Services Act" or the "MAPS Act".

6   **SEC. 2. DEFINITIONS.**

7   In this Act:

1   (1) BROADBAND INTERNET ACCESS SERVICE.—

2   The term "broadband internet access service" has

3   the meaning given the term in section 8.1(b) of title

4   47, Code of Federal Regulations, or any successor

5   regulation.

6   (2) COMMISSION.—The term "Commission"

7   means the Federal Communications Commission.

8   (3) PROVIDER.—The term "provider" means a

9   provider of fixed or mobile broadband internet access

10   service.

11   (4) QUALITY OF SERVICE.—The term "quality

12   of service" means information regarding offered

13   download and upload speeds and latency of a pro-

14   vider's broadband internet access service as deter-

15   mined by and to the extent otherwise collected by

16   the Commission.

17 **SEC. 3. ENFORCEMENT.**

18   (a) IN GENERAL.—It shall be unlawful for a person

19 to willfully, knowingly, or recklessly submit broadband

20 internet access service coverage information or data to the

21 Commission for the purposes of compiling a broadband

22 coverage map that is inaccurate with respect to the avail-

23 ability or quality of service of broadband internet access

24 service.

3

1   (b) PENALTY.—Any person who violates subsection

2 (a) shall be subject to an appropriate penalty, as deter-

3 mined by the Commission, under—

4   (1) the Communications Act of 1934 (47

5   U.S.C. 151 et seq.), including section 501 of that

6   Act (47 U.S.C. 501); and

7   (2) the rules of the Commission.

8   (c) EFFECTIVE DATE.—

9   (1) IN GENERAL.—Except as provided in para-

10   graph (2), subsection (a) shall apply with respect to

11   broadband internet access service coverage informa-

12   tion or data that is submitted to the Commission on

13   or after the date of the enactment of this Act.

14   (2) QUALITY OF SERVICE INFORMATION OR

15   DATA.—To the extent broadband internet access

16   service coverage information or data relates to qual-

17   ity of service, subsection (a) shall apply with respect

18   to information or data that is submitted on or after

19   the date that is 180 days after the date of the enact-

20   ment of this Act.

○

116TH CONGRESS
1ST SESSION **H. R. 2643**

To direct the Federal Communications Commission to establish a challenge
process to verify fixed and mobile broadband service coverage data.

IN THE HOUSE OF REPRESENTATIVES

MAY 9, 2019

Mr. LATTA (for himself and Mr. WELCH) introduced the following bill; which
was referred to the Committee on Energy and Commerce

A BILL

To direct the Federal Communications Commission to estab-
lish a challenge process to verify fixed and mobile
broadband service coverage data.

1   *Be it enacted by the Senate and House of Representa-*

2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4   This Act may be cited as the "Broadband Mapping

5 After Public Scrutiny Act of 2019" or the "Broadband

6 MAPS Act of 2019".

7 **SEC. 2. VERIFICATION OF BROADBAND SERVICE COV-**

8   **ERAGE DATA.**

9   (a) RULEMAKING.—Not later than 6 months after

10 the date of the enactment of this Act, the Commission

2

1 shall initiate a rulemaking to establish a challenge process

2 to collect and use fixed and mobile broadband service cov-

3 erage data submitted to the Commission by private enti-

4 ties and State, local, and Tribal government entities to

5 verify fixed and mobile broadband service coverage data

6 reported to the Commission by fixed and mobile

7 broadband service providers.

8 (b) DATA SUBMISSION STANDARDS.—The process es-

9 tablished under subsection (a) shall include uniform stand-

10 ards for data submitted through such process to ensure

11 consistent and accurate reporting methods.

12 (c) DATA VALIDATION.—The process established

13 under subsection (a) shall include an evidence-based meth-

14 od to validate the accuracy of data submitted through such

15 process.

16 (d) DEFINITIONS.—In this section:

17 (1) COMMISSION.—The term "Commission"

18 means the Federal Communications Commission.

19 (2) STATE.—The term "State" has the mean-

20 ing given such term in section 3 of the Communica-

21 tions Act of 1934 (47 U.S.C. 153).

○

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116TH CONGRESS
1ST SESSION **H. R. 3162**

To improve broadband data collection, mapping, and validation to support
the effective deployment of broadband services to all areas of the United
States, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 6, 2019

Mrs. RODGERS of Washington (for herself, Mr. O'HALLERAN, Mr. MCKINLEY,
Ms. KUSTER of New Hampshire, Mr. WITTMAN, and Mr. BUTTERFIELD)
introduced the following bill; which was referred to the Committee on En-
ergy and Commerce

A BILL

To improve broadband data collection, mapping, and valida-
tion to support the effective deployment of broadband
services to all areas of the United States, and for other
purposes.

1   *Be it enacted by the Senate and House of Representa-*

2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4   This Act may be cited as the "Broadband Data Im-

5 provement Act of 2019".

6 **SEC. 2. DEFINITIONS.**

7   In this Act:

1 (1) BROADBAND INTERNET ACCESS SERVICE.—

2 The term "broadband internet access service" has

3 the meaning given the term in section 8.1 of title 47,

4 Code of Federal Regulations, or any successor regu-

5 lation.

6 (2) COMMISSION.—The term "Commission"

7 means the Federal Communications Commission.

8 (3) FEDERAL AGENCY.—The term "Federal

9 agency" means—

10 (A) the Commission;

11 (B) the Department of Agriculture;

12 (C) the Department of Commerce;

13 (D) the Department of the Interior;

14 (E) the Federal Trade Commission;

15 (F) the National Economic Council; and

16 (G) the Office of Science and Technology

17 Policy.

18 (4) FORM 477.—The term "Form 477" means

19 Form 477 of the Commission relating to local tele-

20 phone competition and broadband reporting.

21 (5) NATIONAL BROADBAND MAP.—The term

22 "National Broadband Map" means the map devel-

23 oped and maintained by the Commission with re-

24 spect to the availability of broadband internet access

25 service.

3

1   (6) PROPAGATION MODEL.—The term "propa-

2   gation model" means an empirical mathematical for-

3   mulation for the characterization of radio wave prop-

4   agation as a function of frequency, distance, and

5   other conditions.

6   (7) PROVIDER.—The term "provider" means a

7   provider of broadband internet access service.

8   (8) SHAPEFILE.—The term "shapefile" means

9   a digital storage format containing geospatial or lo-

10   cation-based data and attribute information—

11   (A) regarding the availability of broadband

12   internet access service; and

13   (B) that can be viewed, edited, and

14   mapped in geographic information system soft-

15   ware.

16   (9) STANDARD BROADBAND INSTALLATION.—

17   The term "standard broadband installation"—

18   (A) means the initiation of new wireline

19   broadband internet access service with no

20   charges or delays attributable to the extension

21   of the network of the provider; and

22   (B) includes the initiation of service that

23   requires only routine installation that can be

24   completed not later than 10 business days after

4

1   the date on which the service request is sub-

2   mitted.

3   (10) STATE.—The term "State" has the mean-

4   ing given the term in section 3 of the Communica-

5   tions Act of 1934 (47 U.S.C. 153).

6 SEC. 3. NEW DATA SUBMISSION AND PUBLIC FEEDBACK

7   PROCESSES.

8   (a) IN GENERAL.—Not later than 180 days after the

9 date of enactment of this Act, the Commission shall issue

10 a rule to establish—

11   (1) a reporting requirement under which each

12   provider shall, not less frequently than biannually,

13   submit to the Commission accurate and granular in-

14   formation regarding the geographic availability of

15   broadband internet access service provided by the

16   provider; and

17   (2) a framework for an ongoing challenge proc-

18   ess through which a provider or a member of the

19   public may submit information challenging the accu-

20   racy of the information reflected on the National

21   Broadband Map.

22   (b) REPORTING REQUIREMENT CONDITIONS.—The

23 reporting requirement established by the Commission

24 under subsection (a)(1) shall—

5

1 (1) require information regarding the service

2 area of each provider to be—

3   (A) submitted in shapefile format, or an-

4   other geospatial format as the Commission may

5   prescribe, to achieve the level of reporting speci-

6   ficity required under paragraph (2) of this sub-

7   section; and

8   (B) before making each submission re-

9   quired under subsection (a)(1), certified—

10   (i) as adhering to such reporting

11   standards as the Commission may pre-

12   scribe;

13   (ii) on a form to be prescribed by the

14   Commission; and

15   (iii) by an officer of the provider;

16 (2) allow for an understanding by the Commis-

17 sion and the general public of speeds and service de-

18 livery types of broadband internet access service that

19 are available through—

20   (A) a standard broadband installation for

21   fixed wireline services; and

22   (B) standardized and tested propagation

23   models with respect to—

24   (i) fixed wireless and satellite services;

25   and

1   (ii) mobile services, with defined fac-

2   tors for signal strength, cell edge prob-

3   ability, and cell loading;

4   (3) define uniform mandatory standards for the

5 reporting of broadband internet access service cov-

6 erage for each delivery type with respect to

7 broadband internet access service in order to—

8   (A) ensure the accuracy and granularity of

9   the data submitted; and

10   (B) require each provider to employ con-

11   sistent reporting methods across all States in

12   which the provider provides service;

13   (4) update or replace the Form 477 broadband

14 deployment service availability data collection proc-

15 ess of the Commission; and

16   (5) eliminate all duplicative reporting require-

17 ments and procedures regarding the availability of

18 broadband internet access service that are in exist-

19 ence as of the date on which the Commission estab-

20 lishes the requirement.

21   (c) CHALLENGE PROCESS CONDITIONS.—The frame-

22 work for the challenge process established by the Commis-

23 sion under subsection (a)(2) shall include an ongoing

24 schedule for the periodic—

1   (1) receipt, analysis, and resolution of feedback

2   received through the process; and

3   (2) updating of the National Broadband Map,

4   which shall be completed—

5   (A) in an expeditious manner; and

6   (B) in response to the feedback described

7   in paragraph (1).

8   (d) NATIONAL BROADBAND MAP.—

9   (1) IN GENERAL.—Subject to feedback received

10   through the challenge process, the framework for

11   which is established under subsection (a)(2), a Fed-

12   eral agency shall use the National Broadband Map

13   to determine—

14   (A) the extent of the availability of

15   broadband internet access service; and

16   (B) the areas of the United States that re-

17   main unserved by providers.

18   (2) CHALLENGE NOTICE OF OPPORTUNITY.—

19   Before awarding funding that supports the develop-

20   ment of broadband internet access services and that

21   is based on the information reflected on the National

22   Broadband Map, a Federal agency shall provide no-

23   tice of an opportunity for public feedback to chal-

24   lenge or update the information on the map that—

1   (A) aligns with the schedule established

2   under subsection (c); or

3   (B) provides a separate public feedback op-

4   portunity under rules that may be established

5   by the Federal agency.

6 **SEC. 4. DATA VALIDATION AND SUBMISSION ASSISTANCE.**

7   (a) SELECTED PROVIDER.—

8   (1) SELECTION OF PROVIDER.—

9   (A) IN GENERAL.—The Commission shall

10   use competitive procedures to enter into a con-

11   tract with an entity to provide the services de-

12   scribed in paragraph (2).

13   (B) COMMISSION DISCRETION.—The Com-

14   mission may—

15   (i) determine—

16   (I) the period in which an entity

17   selected under subparagraph (A) shall

18   serve in that capacity; and

19   (II) whether to grant an exten-

20   sion with respect to the period de-

21   scribed in subclause (i), including the

22   length of that extension; and

23   (ii) with respect to the contract de-

24   scribed in subparagraph (A), include—

9

1   (I) a provision relating to liq-

2   uidated damages; and

3   (II) any other reasonable provi-

4   sion to ensure that the contract is

5   sound and enforceable.

6   (2) RESPONSIBILITIES.—Subject to section

7 106(h)(2) of the Broadband Data Improvement Act

8 (47 U.S.C. 1304(h)(2)), the entity selected under

9 paragraph (1) shall, in consultation with, and under

10 the supervision of, the Commission—

11   (A) provide—

12   (i) geographic information system

13   data processing assistance to providers

14   that require that assistance in order to

15   comply with the reporting requirements es-

16   tablished by the Commission under section

17   3(a)(1);

18   (ii) support for the facilitation of the

19   challenge process, the framework for which

20   is established by the Commission under

21   section 3(a)(2); and

22   (iii) independent data validation serv-

23   ices, including in-field verification of the

24   availability of broadband internet access

25   service reported by providers, to the Com-

1   mission to ensure the accuracy and con-

2   tinual refinement of the National

3   Broadband Map;

4   (B) execute data-sharing agreements, as

5   may be requested, with providers to facilitate

6   the exchange of information needed to create

7   shapefiles, or any other such depiction as the

8   Commission may prescribe, of the availability of

9   broadband internet access service for the pur-

10   poses of carrying out subsection (d);

11   (C) analyze the information exchanged

12   under subparagraph (B) to produce depictions

13   of the availability of fixed broadband internet

14   access service and mobile broadband internet

15   access service in compliance with the require-

16   ments established under section 3(a)(1), for any

17   providers that are eligible for the assistance de-

18   scribed in subparagraph (A)(i);

19   (D) provide the depictions of service avail-

20   ability under subparagraph (C) to the Commis-

21   sion for—

22   (i) the internal use of the Commis-

23   sion; and

24   (ii) incorporation in the National

25   Broadband Map;

1   (E) support collaboration between the

2 Commission and other Federal agencies to—

3   (i) track, map, and validate how funds

4   made available through Federal grants,

5   loans, or other financial awards or incen-

6   tives for the development of broadband in-

7   frastructure have been expended to im-

8   prove the availability of broadband internet

9   access service; and

10   (ii) ensure transparency and account-

11   ability with respect to the expenditures de-

12   scribed in clause (i), taking into account

13   existing accountability measures, such as

14   requiring the deployment of broadband in-

15   frastructure to be reported on a geocoded

16   or other location-specific basis;

17   (F) develop and implement an online

18 mechanism to be integrated into the National

19 Broadband Map, which shall solicit and collect

20 feedback submitted by the public and providers

21 through the challenge process, the framework

22 for which is established under section 3(a)(2);

23 and

24   (G) in consultation with the Commission,

25 establish an ongoing data validation and

1   verification process, including selective in-per-

2   son field validation activities, that shall—

3   (i) be guided by intelligence collected

4   through the receipt of public feedback, the

5   acquisition and analysis of third-party

6   datasets, or other methods the entity may

7   develop; and

8   (ii) advise the Commission regarding

9   the continual refinement of the National

10   Broadband Map.

11   (b) PUBLIC COMMENT REQUIRED.—With respect to

12 the selection of an entity under subsection (a), the Com-

13 mission shall seek comment from the public, providers,

14 and other relevant stakeholders regarding the experience

15 and capabilities of organizations that are qualified to be

16 so selected.

17   (c) TERMINATION FOR CAUSE; SELECTION OF NEW

18 ENTITY.—

19   (1) IN GENERAL.—The Commission may, by

20   order, terminate for cause an entity selected under

21   subsection (a).

22   (2) NEW ENTITY.—If the Commission issues a

23   termination order under paragraph (1)(A), the Com-

24   mission shall, not later than 120 days after the date

25   on which the Commission issues that order, select a

13

1 new qualified entity to carry out subsection (a) in
2 the same manner as provided in that subsection, in-
3 cluding by seeking comment as provided in sub-
4 section (b).

5 (d) PROVIDER REQUEST FOR ASSISTANCE.—

6 (1) IN GENERAL.—The Commission shall imple-
7 ment a process through which a provider may re-
8 quest geographic information system data processing
9 assistance from the entity selected under subsection
10 (a).

11 (2) CONDITIONS FOR APPROVAL.—The entity
12 selected under subsection (a) shall grant a request
13 for assistance submitted by a provider under para-
14 graph (1)—

15   (A) if the provider has more than 100,000
16   broadband connections—

17   (i) upon a demonstration of need by
18   the provider; and

19   (ii) after review and approval by the
20   Commission; and

21   (B) if the provider has not more than
22   100,000 broadband connections, automatically,
23   subject to the availability of funds.

24 (e) NO REGULATORY AUTHORITY.—Nothing in this
25 section may be construed to grant an entity selected under

1 subsection (a) any regulatory jurisdiction with respect to,

2 or oversight authority over, providers or information tech-

3 nology.

4 **SEC. 5. ENFORCEMENT.**

5   (a) IN GENERAL.—It shall be unlawful for a person

6 to willfully and knowingly submit information or data

7 under this Act that is inaccurate with respect to the avail-

8 ability of broadband internet access service.

9   (b) PENALTY.—Any person that violates subsection

10 (a) shall be subject to an appropriate penalty, as deter-

11 mined by the Commission, under—

12   (1) the Communications Act of 1934 (47

13   U.S.C. 151 et seq.), including section 501 of that

14   Act (47 U.S.C. 501); and

15   (2) the rules of the Commission.

16 **SEC. 6. AUTHORIZATION OF APPROPRIATIONS.**

17   There is authorized to be appropriated to the Com-

18 mission to carry out this Act the following amounts:

19   (1)(A) For fiscal year 2020, $55,000,000, not

20   less than $34,500,000 of which shall be made avail-

21   able to carry out section 4.

22   (B) The amounts made available under sub-

23   paragraph (A) shall remain available until expended.

24   (2)(A) For each of fiscal years 2021 through

25   2026, $50,000,000, not less than $29,500,000 of

15

1   which shall be made available in each such fiscal

2   year to carry out section 4.

3   (B) The amounts made available under sub-

4   paragraph (A) shall remain available until expended.

○

WESTERN GOVERNORS' ASSOCIATION

DOUG BURGUM
GOVERNOR OF NORTH DAKOTA
CHAIR

KATE BROWN
GOVERNOR OF OREGON
VICE CHAIR

JAMES D. OGSBURY
EXECUTIVE DIRECTOR

September 10, 2019

The Honorable Michael Doyle
Chairman
Subcommittee on Communications
 and Technology
Committee on Energy and Commerce
House of Representatives
2125 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Robert Latta
Ranking Member
Subcommittee on Communications
 and Technology
Committee on Energy and Commerce
House of Representatives
2322 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Doyle and Ranking Member Latta:

Western Governors appreciate the Subcommittee's attention to the important matter of broadband mapping accuracy as you convene your September 11, 2019 hearing on Legislating to Connect America: Improving the Nation's Broadband Maps. Attached please find three Western Governors' Association (WGA) policy resolutions that address broadband deployment:
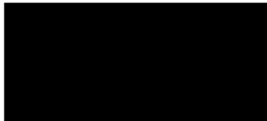
- WGA Policy Resolution 2019-04, Health Care in Western States;

- WGA Policy Resolution 2018-13, Workforce Development in the Western United States; and

- WGA Policy Resolution 2017-09, Western Agriculture.

Also attached is a July 16, 2018 letter to National Telecommunications and Information Administration Assistant Secretary David J. Redl expressing concern about the use of census block-level reporting in the Federal Communication Commission's Form 477 reporting process.

I request that these documents be included in the permanent record of the hearing, as they articulate Western Governors' policy positions and concern on this important issue.

Please contact me if you have any questions or require further information. In the meantime, with warm regards and best wishes, I am

Respectfully,

Attachments

WESTERN GOVERNORS' ASSOCIATION

Policy Resolution 2019-04

Health Care in Western States

A.   **BACKGROUND**

1.   Ensuring access to high-quality, affordable health care services is an important element of maintaining and enhancing the quality of life in western states for our growing populations. It is the basis for healthy communities and healthy economies.

2.   Western states face unique challenges in health care, including growing rates of substance use disorder, provider shortages in underserved and rural areas, and limited access to broadband. Low population densities and the vast distances between population centers also make it difficult for providers to establish economically-sustainable health care systems in rural areas.

3.   Distance and density also inhibit construction of the technology infrastructure that would provide or improve broadband connectivity in underserved and rural areas. Expanding broadband access provides numerous quality-of-life benefits for rural Americans, including economic development, social connectivity, education, public safety, and access to telehealth and telemedicine.

4.   The health care sector faces severe personnel shortages in western states, despite efforts of Western Governors, such as the foundation of Western Governors University and other medical training programs in western states, to ensure adequate numbers of qualified medical personnel. This challenge is particularly acute in the West's underserved and rural areas. Ensuring access to health care services requires an adequate number and distribution of physicians, nurses and other trained health care professionals. Population growth, aging residents, and challenges involving Tribal health care and services for veterans require a renewed focus on developing our nation's health care workforce.

5.   Western states struggle with access to behavioral health services and higher-than average suicide rates. The ten states with the highest suicide rates in the nation are all located in the West.

6.   Substance use disorder (SUD), including alcohol and drug misuse, is a major public health and safety crisis affecting nearly 21 million Americans. It is particularly prevalent in western states where individuals are more likely to have SUD during their lifetime. SUD crosses all social and economic lines and tragically takes the lives of tens of thousands of Americans every year. While state and federal progress has been made to fight this epidemic, additional efforts are necessary to help bridge prevention and treatment gaps in western states.

7.   In many cases, health disparities and barriers to accessing health care are particularly acute for certain populations in the West. A better understanding of the role that social determinants play in health outcomes can inform the development of effective health policy to increase access for these populations.

8. Western states have a unique body of experience, knowledge and perspective with respect to health care. The Western Governors' Association (WGA) is ideally situated to collect and disseminate information, including best practices, case studies and policy options, that states can use to improve the foundation for health care services and advocate for shared policy priorities on behalf of their citizens.

B. GOVERNORS' POLICY STATEMENT

1. Federal efforts to address health care workforce and access needs should reflect early, meaningful and substantive input from Governors, who are best positioned to assess the needs of their states and help develop solutions to meet these needs. State-federal collaboration and coordination are integral to addressing these health care challenges. Wherever possible, and where appropriate, the federal government should respect state authority and maximize flexibility granted to states and Governors.

2. The federal government should work with states to facilitate the deployment of broadband to underserved and rural areas, recognizing that adequate broadband access has a direct correlation on rural populations' ability to access telehealth and telemedicine.

3. Despite efforts by Western Governors to address the shortage of qualified health care workers, significant challenges remain. Governors urge the federal government to examine and implement programs to ensure states have an adequate health care workforce – including in primary care and other in-demand specialties – that is prepared to serve diverse populations in urban, suburban, and rural communities. Governors also support efforts to increase the diversity of the health care workforce to improve health outcomes for all.

4. Western Governors support efforts to improve the quality and quantity of behavioral health services available to our residents, as these services are essential to reducing suicide rates and treating a range of behavioral health conditions, including substance use disorder.

5. The federal government should work toward treating addiction as a chronic illness and work with Western Governors to develop strategies for addressing substance use disorder that work in concert with state efforts and recognize regional variations in substance use disorder patterns.

C. GOVERNORS' MANAGEMENT DIRECTIVE

1. The Governors direct WGA staff to work with Congressional committees of jurisdiction, the Executive Branch, and other entities, where appropriate, to achieve the objectives of this resolution.

2. Furthermore, the Governors direct WGA staff to consult with the Staff Advisory Council regarding its efforts to realize the objectives of this resolution and to keep the Governors apprised of its progress in this regard.

Western Governors enact new policy resolutions and amend existing resolutions on a bi-annual basis. Please consult westgov.org/resolutions for the most current copy of a resolution and a list of all current WGA policy resolutions.

Policy Resolution 2018-13

**Workforce Development in the
Western United States**

A.   **BACKGROUND**

1.   Workforce development efforts contribute to the economic well-being of western states by enabling people to find fulfilling, well-paying jobs, fostering economic mobility, and ensuring that businesses have access to the skilled employees they need to thrive.

2.   Western states had an average unemployment rate of just under 4.0 percent in March 2018.[1] Many businesses report that they cannot find qualified candidates for open positions. At the same time, many jobseekers are unable to find good jobs for which they are qualified.

3.   Workforce development challenges are particularly acute in rural communities, which are commonly characterized by higher rates of unemployment, a lack of economic diversity, geographic isolation, and limited infrastructure, including access to broadband.

4.   Economic equity continues to be a problem across states, with people of color and people with disabilities, regardless of career preparation and credential levels, seeing poorer rates of employment and earnings than majority populations.

5.   There are 6.6 million unfilled jobs in the United States due in part to a shortage of workers with the skills and qualifications to fill those positions.[2] The largest gap is in middle skills jobs, which require more than a high school diploma but less than a four-year degree.

6.   Postsecondary education and training is critical in today's economy. Almost 80 percent of jobs in the United States require a postsecondary credential, including certificates, associate degrees, four-year degrees, and licenses.[3]

7.   On average, those holding a bachelor's degree earn more than those who have not attained that degree, but those who do not reach that level of education can still find good employment. There are 30 million jobs that don't require a four-year degree and pay at least $35,000 per year with a median salary of $55,000.[4]

8.   Education systems have not kept pace with economic realities. Student success is traditionally perceived, and measured, as moving directly from high school to a four-year degree program. Today, only 20 percent of students successfully complete that traditional

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[1] Bureau of Labor Statistics, Local Area Unemployment Statistics, May 18, 2018.
[2] Bureau of Labor Statistics, Job Openings and Labor Turnover Summary, May 8, 2018.
[3] National Skills Coalition, United States Middle-Skill Fact Sheet, February 2017.
[4] Carnevale, A.P., Strohl, J., and Ridley, N., Good Jobs that Pay Without a BA: A State-by-State Analysis. Georgetown University Center of Education and the Workforce, 2017.

pathway to their career.[5] The rest are finding their own pathways to success, which may include entering the world of work or pursuing other types of credentials. Many, however, encounter obstacles.

9.   On average, only about one-third of high schoolers are engaged in school, meaning that two-thirds are not actively involved in or enthusiastic about school.[6] Three million young adults ages 16-24 are not participating in either work or education.[7]

10.   Additionally, many Americans start a college degree but do not complete it, leaving them with the burdensome costs of higher education but no wage benefit – 35 million people over 25 have some college credits but no degree.[8]

11.   As students increasingly pursue indirect routes to higher education, over 70 percent of students enrolled in postsecondary education are now "nontraditional students" who may be older, working full or part time, or caring for children.

12.   Technology will continue to be a disruptive force in the labor market, driving potentially drastic changes in the labor demands of certain industries. It is expected that many jobs that will be in demand in 2030 do not yet exist. Workers will need to be able to acquire new skills over their careers to adapt to change. Up to one-third of U.S. workers in 2030 may need to learn new skills or move into a new occupation due to the impacts of automation.[9]

13.   To address these issues, Western Governors have prioritized a variety of workforce development efforts, from better aligning education with labor market demands to expanding workforce services and training opportunities for the unemployed and underemployed to attracting more skilled workers.

14.   Western states are also leading the way on expanding work-based learning opportunities for both students and adults. Work-based learning programs, including registered apprenticeships, allow people to acquire in-demand skills while earning a salary.

15.   Employer leadership is critical to ensure that workforce development efforts are satisfying the needs of an ever-changing economy. Businesses in the West have taken an active role in working with educational institutions and workforce agencies but increasing industry participation will remain critical.

B.   **GOVERNORS' POLICY STATEMENT**

1.   Western Governors recognize that there are many pathways students can take to a successful career, including short-term education and skills training or work-based learning

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[5] U.S. Department of Education, National Center for Education Statistics, The Condition of Education 2017, May 2018.
[6] 2016 Gallup Student Poll Snapshot Report
[7] Brookings, Employment and disconnection among teens and young adults: The role of place, race, and education, May 2016.
[8] U.S. Census Bureau, Educational Attainment in the United States: 2017, December 14, 2017.
[9] McKinsey Global Institute, Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation, December 2017.

programs such as registered apprenticeships. Students and jobseekers should have access to understand their options and the potential outcomes of these programs.

2.   Facilitating lifelong learning is essential to prepare for the impacts of technology on the labor market. Western Governors encourage Congress to increase student access to short-term education and skills training programs in reauthorization of the Higher Education Act, including through expanding the Pell Grant program to include high-quality short-term training programs leading to industry-recognized credentials. These flexible work-force oriented funds should be coupled with plans to adopt and report outcomes metrics tied to employment and earnings to maximize the success of this policy in equipping workers for high-opportunity jobs and careers.

3.   Western Governors also support the expansion of work-based learning programs, including registered apprenticeships. Western Governors encourage Congress and federal agencies to support and incentivize state-, local-, and industry-led partnerships to create and scale work-based learning and apprenticeship programs. New federal investments in apprenticeships should align with existing efforts to foster a coherent system with minimal duplication at the federal, state, and local level.

4.   Career and technical education (CTE) helps expose students to their career options and develop skills they will need in the workforce. Western Governors call on Congress to reauthorize and fully fund the Carl D. Perkins Career and Technical Education Act. Reauthorization of the act should take into consideration the following principles:

- Governors and states are in the best position to determine how to use federal CTE funding to meet the unique needs of their economies.

- High-quality CTE programs should lead to in-demand, high wage careers; include career and academic advising; include pathways to four-year degrees, for example through articulation agreements or stackable credentials; and develop employability skills through integrated education and training, work-based learning or leadership opportunities.

5.   Western Governors note that federal funding for workforce development through the Workforce Innovation and Opportunity Act supports economic growth and job creation in the states. Western Governors request that the 15 percent reserve for statewide activities be maintained. This funding allows Governors to be flexible in addressing state needs and supports innovation.

6.   Western Governors encourage the federal agencies, including the U.S. Department of Labor and U.S. Department of Education, to coordinate their efforts to better align federal workforce development, career and technical education, and higher education programs.

7.   Western Governors recognize the benefits of measuring and reporting outcomes by institution and program. Reporting completion rates, employment and earnings will provide useful information for students and their families and help promote the success of these programs to prepare students for in-demand jobs and careers in their regions. Western Governors encourage Congress to include the College Transparency Act in reauthorization of the Higher Education Act, to adopt and report on earnings, employment,

and credential attainment metrics by education provider and individual program in a manner that protects student privacy and ensures data security.

8. Employers play an important role in state workforce development efforts. Western Governors support efforts to incentivize employers to play a more active role in talent development, through partnership with state workforce development agencies and educational institutions or investments in the skills and training of their employees.

9. Rural communities are at risk of falling further behind in skills necessary for the economy of the future due to a lack of broadband access. Western Governors encourage federal agencies and Congress to continue to deploy resources to solve this urgent need.

10. Professional licensing requirements vary by state and can create a barrier to mobility for professionals in western states. Where possible, Western Governors should work together to minimize this barrier.

C. **GOVERNORS' MANAGEMENT DIRECTIVE**

1. The Governors direct WGA staff to work with Congressional committees of jurisdiction, the Executive Branch, and other entities, where appropriate, to achieve the objectives of this resolution.

2. Furthermore, the Governors direct WGA staff to consult with the Staff Advisory Council regarding its efforts to realize the objectives of this resolution and to keep the Governors apprised of its progress in this regard.

Western Governors enact new policy resolutions and amend existing resolutions on a bi-annual basis. Please consult www.westgov.org/resolutions for the most current copy of a resolution and a list of all current WGA policy resolutions.

Western Governors' Association
Policy Resolution 2017-09

Western Agriculture

A.   **BACKGROUND**

1.   Agriculture and forestry in the western states and territories are significantly different than in other regions of the country. We have greater variations in soil, climate, terrain, commodities and production practices, and water availability.

2.   Farms, forests, and rangelands are important contributors to the economies and quality of life of western states. Among other important values, western agricultural and forest lands are primary sources of open space, wildlife habitat, water supplies, and diverse rural economic opportunities in the recreation, food, fiber, energy and bio-based product industries.

3.   Trade promotion plays an important role in ensuring that western agricultural products and food have an opportunity to compete with products produced and subsidized internationally.

4.   Western states have seen some of the most significant increases in per-capita veteran populations since 2000, including surges in returning veterans under the age of 25. It is estimated that nearly 25 percent of all veterans live in rural areas. These veterans have slightly lower rates of employment compared to veterans living in urban areas and to their non-veteran rural colleagues.

5.   Responsible management of federal lands is a significant concern for Western Governors. Western states include more than 75 percent of our national forest and rangeland ecosystems. These public lands serve as critical economic drivers, and they provide numerous conservation benefits, water supply, and recreational opportunities for Western communities and the nation.

6.   The West's network of land-grant universities and colleges, including Cooperative Extension Service programs, continue to provide national leadership in research to develop more resilient seeds and crops, manage soil health, advance technology deployment in the bio-based economy and conduct on-farm research experiments that help farmers and ranchers be more effective and efficient.

7.   Western Governors recognize that nutrition assistance programs can meet the needs of children and the most vulnerable, while creating economic opportunity across the

agriculture supply-chain from the store where food is purchased, all the way back to the farm. Western Governors acknowledge recent efforts to reduce rates of nutrition program fraud and abuse, deliver programs under budget, and improve program effectiveness.

8. Many agricultural producers in the West rely on irrigation water delivery systems that are shared among multiple producers and operated by an irrigation district, canal company, or mutual ditch company.

B. **GOVERNORS' POLICY STATEMENT**

1. Western Governors support funding for the U.S. Department of Agriculture (USDA) Market Access and Foreign Market Development Programs to promote opportunities for western producers to increase export revenues and encourage trade agreements that maximize benefits for the West's farmers, ranchers and forest landowners.

2. Western Governors support adequate funding for the USDA Specialty Crop Block Grant Program (SCBGP) that provides critical research, education, and promotion tools to the fruit and vegetable producers.

3. Western States have experienced sharp declines in farm income and farm prices since 2013. Western Governors support a farm safety net that recognizes past deficit reduction contributions of the agricultural sector and maintains funding for other key commodity, conservation, crop insurance, research, energy, and export promotion programs. In particular, Western Governors note that the Conservation title of the 2014 Farm Bill contributed to deficit reduction, saving taxpayers $6 billion by consolidating 23 programs into 13, streamlining and targeting delivery to farmers, ranchers, and foresters. Western Governors support farm bill funding levels based on need rather than baseline budget targets.

4. Western Governors encourage the expansion of programs that can meet the unique educational, training, technical and financial needs of new, beginning and veteran farmers and ranchers and other USDA programming that can help returning veterans develop and expand business opportunities in rural communities.

5. Western Governors continue to support collaborative, targeted and voluntary conservation to address locally identified natural resource issues for farm, range, and forest resource concerns on private and public lands, such as soil health, air and water quality, drought and wildfire resilience, wildlife habitat conservation and invasive species. Western Governors support the role of conservation title programs in providing voluntary solutions to threatened and endangered species, water quality impairments, groundwater recharge, and other regulatory concerns potentially facing producers.

6.   Western Governors support an increase in the role that state and local governments have in managing public lands for multiple uses, including agriculture.

7.   Western Governors continue to urge Congress to provide a comprehensive solution for the current approach to budgeting for wildland fire for the Departments of Interior and Agriculture. Any fire budget solution must address the chronic problem of the rising costs of wildfire and the complicating problem of mid-season budget transfers when appropriated funding becomes insufficient. A comprehensive fix is needed to address capacity constraints and allow for a predictable program of work for agencies to fulfill their management responsibilities.

8.   Western Governors acknowledge significant progress toward achieving forest restoration goals by using authorities granted in the 2014 Farm Bill. Western Governors support permanent authorization of the Insect and Disease designation provisions of section 602 of the 2014 Farm Bill and the elimination of project constraints from section 603 for condition class or fire regimes outside of the Wildland Urban Interface (WUI). Western Governors also support creating additional flexibility to Good Neighbor Authority to address conflicting language on road construction and reconstruction and the uses of program income. The lack of flexibility restricts opportunities for states to partner in shared stewardship work across boundaries.

9.   Within the context of comprehensive wildland fire budget reform, existing law and forest plans, Western Governors support the use of new tools to streamline environmental analysis to increase the pace and scale of restoration activities. Specifically, Western Governors support creation of a new pilot program to prioritize landscape-scale environmental analysis for restoration projects envisioned over geographies greater than 100,000 acres. This pilot program should allow for predictable project-scale implementation and adaptive management. Western Governors believe federal agencies should develop guidance to build consistency in environmental analysis and bring agency practice in conducting environmental assessments (EAs) more in line with the administrative policy intent of streamlined, summary documents. Western Governors affirm that Congress should resolve outstanding issues with potential requirements to reinitiate endangered species consultations following the adoption, amendment or revision of an appropriate management plan.

10. Western Governors support Congress establishing a restoration categorical exclusion (CE) based on a record of analysis from the past five years of projects where agency analysis and a decision recognized a finding of no significant environmental impact. Western Governors support allowing federal agencies to analyze only the action and no-action alternatives when a project is collaboratively developed, unless a third alternative is proposed during scoping and meets the purpose and need of the project. Western Governors also support rewarding successful implementation of collaborative projects

through funding, retained-receipt authority, or other capacity to pursue subsequent projects.

11. Western Governors support efforts to expand research funding to address drought, a changing climate and extreme weather risks facing western producers.

12. Western Governors encourage the effective use of extension and other partnerships to deliver practical tools, technologies and information to farmers, ranchers and forest landowners.

13. Nutrition assistance programs should continue to allow flexibility for states to respond to unique economic conditions, serve all eligible participants without drastically reducing benefits, and encourage continued pursuit of transparency and accountability in program administration.

14. Western Governors support changes to Conservation Title programs that remove existing contracting barriers for western producers, and make the Farm Bill's conservation title programs more accessible and relevant to western producers and their associations.

15. Western Governors support coordinated state and federal action to expand markets for wood products that can achieve forest and rangeland restoration objectives and foster rural employment and income opportunities. Western Governors support coordinated financing and grant support from USDA Rural Development programs and the USDA Forest Service to advance wood product business development, infrastructure, and demonstration products in the areas of mass timber construction and biomass energy.

16. Western Governors support the USDA, Animal and Plant Health Inspection Service (APHIS) and Agriculture Research Service (ARS). APHIS works in partnership with state departments of agriculture to monitor, prevent and control infestations of invasive pests and diseases and curtail or minimize wildlife conflicts, which can cause widespread environmental and economic damage and safety hazards. APHIS works in cooperation with other federal agencies, states, territories, counties and private entities to implement management programs. ARS conducts research to develop and transfer solutions to agricultural problems of high national priority, and shares information to ensure high quality, safe food and other agricultural products. ARS research helps sustain a competitive economy; enhance the natural resource base and the environment; provide economic opportunities for rural communities and society as a whole, and; provide the necessary infrastructure to create and maintain a diverse workplace.

17. Western Governors support the continued efforts of the Rural Utilities Service to provide financial assistance for drinking water, wastewater facilities and broadband connectivity in rural and remote areas, particularly in communities that have minimal or

no such infrastructure. Expanding broadband access to rural America will allow citizens to compete in a global market and have access to IT health care, education and public safety resources.

18.   Western Governors support the recommendations identified over the course of the WGA National Forest and Rangeland Management Initiative, and incorporate those recommendations related to the reauthorization of the Agricultural Act into this resolution by reference.

C.   <u>GOVERNORS' MANAGEMENT DIRECTIVE</u>

1.   The Governors direct WGA staff to work with Congressional committees of jurisdiction, the Executive Branch, and other entities, where appropriate, to achieve the objectives of this resolution.

2.   Furthermore, the Governors direct WGA staff to consult with the Staff Advisory Council regarding its efforts to realize the objectives of this resolution and to keep the Governors apprised of its progress in this regard.

Western Governors enact new policy resolutions and amend existing resolutions on a bi-annual basis. Please consult www.westgov.org/resolutions for the most current copy of a resolution and a list of all current WGA policy resolutions.

WESTERN GOVERNORS' ASSOCIATION

DAVID IGE
GOVERNOR OF HAWAII
CHAIR

DOUG BURGUM
GOVERNOR OF NORTH DAKOTA
VICE CHAIR

JAMES D. OGSBURY
EXECUTIVE DIRECTOR

July 16, 2018

David J. Redl
Assistant Secretary for Communications and Information
National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230

Dear Assistant Secretary Redl:

As Executive Director of the Western Governors' Association (WGA), I am pleased to have the opportunity to provide comments on the importance of improving the quality and accuracy of broadband availability data, particularly in rural areas. High-quality data is necessary to ensure that public broadband deployment efforts are cost effective and prioritize areas that either wholly or significantly lack access.

WGA is an independent organization representing the Governors of 19 western states and three U.S. territories in the Pacific. The Association is an instrument of the Governors for bipartisan policy development, information-sharing and collective action on issues of critical importance to the western United States.

Western states contain many rural areas that lack sufficient access to broadband, as evidenced by the Connect America Funding Phase II eligible areas and the Federal Communication Commission's (FCC) recently updated broadband map. This widespread lack of connectivity limits communities' access to health care and public safety resources; prevents businesses from competing in the digital economy and diminishes students' access to education and training opportunities. WGA Policy Resolution 2018-13, *Workforce Development in the Western United States*, expresses the support of western Governors for congressional and federal efforts to deploy broadband to rural communities to promote workforce development efforts.

Federal efforts, such as the Rural Utilities Service's new broadband pilot program, are critical to closing the digital divide. WGA is concerned, however, that the FCC's updated broadband map is not sufficiently accurate nor granular enough to support efficient and effective broadband deployment in the West.

Through the Form 477 reporting process, the FCC considers a census block "served" if a single residence in the block has access to broadband. This reporting protocol overstates broadband availability in larger, rural census blocks common in western states. WGA is also concerned that the use of "maximum advertised," not "actual," speeds when mapping broadband coverage does not accurately portray the service that customers receive.

On behalf of Western Governors, I encourage you to pursue meaningful partnerships with states to help address these concerns. Please let WGA know how we may meaningfully contribute to your efforts to improve the quality of broadband data and ensure the efficient and effective use of federal funds to promote broadband deployment.

September 9, 2019

The Honorable Michael F. Doyle
Chairman
House Energy & Commerce Subcommittee on Communications & Technology
Washington, D.C., 20515

The Honorable Robert E. Latta
Ranking Member
House Energy & Commerce Subcommittee on Communications & Technology
Washington, D.C., 20515

Dear Chairman Doyle and Ranking Member Latta:

In advance of the House Energy and Commerce Subcommittee on Communications and Technology hearing on "Legislating to Connect America: Improving the Nation's Broadband Maps," our organizations, which have a shared commitment to ensuring rural Americans have access to high-speed broadband connectivity, write to offer our thoughts on improving the nation's broadband maps on behalf of the rural broadband consumers our members serve.

More granular and accurate maps showing broadband availability are a key part of reaching all rural Americans with high-speed broadband service. This will enable us to clarify existing gaps in coverage and harmonize the diverse solutions that will be required to help rural Americans keep pace with their urban counterparts.

To that end our organizations believe several steps are critical to improving the nation's broadband maps:

- More granular data is needed to allow the maps to reflect actual coverage rather than classifying entire census blocks–which are often geographically large in rural areas–as served or unserved.
- Inclusion of broadband service performance characteristics such as latency and monthly usage limits would provide important insight to the quality of service broadband consumers experience.
- Data accuracy including standardization of data is critical to ensure all providers must adhere to specific guidelines when reporting what areas they can serve.
- Further data accuracy components should include crowdsourcing and, perhaps most importantly, an easily accessible challenge process to flag issues and further verify the accuracy of maps.
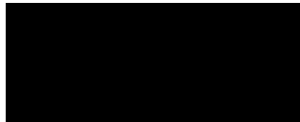
Fortunately, the FCC has recently taken steps on some of these items and we believe that Congress has a role to play in providing further guidance.

We are pleased various House legislative proposals including the Broadband Deployment Accuracy and Technological Availability (DATA) Act (H.R. 4229) introduced by Reps. Loebsack and Latta and the Mapping Accuracy Promotes Services (MAPS) Act (H.R. 4227) introduced by Reps. McEachin and Long as well as the Broadband Data Improvement Act (H.R. 3162) introduced by Reps. McMorris Rodgers and O'Halleran incorporate many of the important aspects we outlined.

Improving broadband maps is an incremental process that will not happen overnight. Utilizing the proposals we have suggested, we are encouraged to see federal agencies and Congress moving forward simultaneously with mapping improvement and deployment activities to judiciously reach rural consumers with connectivity required to fully participate in our 21st Century economy and society.

We look forward to continuing to work with committee members and bill sponsors as engaged stakeholders on these matters and thank you for continuing this important discussion in the halls of Congress.

Sincerely,

Jim Matheson
Chief Executive Officer
National Rural Electric Cooperative Association

Shirley Bloomfield
Chief Executive Officer
NTCA–The Rural Broadband Association

cc: Members of the House Energy and Commerce Subcommittee on Communications and Technology

Mr. James W. Stegeman
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Attachment—Additional Questions for the Record

Subcommittee on Communications and Technology
Hearing on
"Legislating to Connect America: Improving the Nation's Broadband Maps"
September 11, 2019

Mr. James W. Stegeman, President/CEO, CostQuest Associates

The Honorable Anna G. Eshoo (D-CA)

1. I'm concerned about potential privacy implications of a private party managing a vast agglomeration of data that may include specific and granular geolocation data of the residences of millions of Americans. In the pilot program you described, do any of the systems you've built or maintained contain personally identifiable information such as names, Social Security numbers, or other unique identifiers that links geolocation data of a potential residence to the identities of individuals, families, or households that live there?

Response: While the publicly available data sources we acquired provided property owner names (part of the data that is made available by county assessors), we did NOT retain any personally identifiable information, including owner name, Social Security numbers, or any information that identifies individuals, families or households, in the created Broadband Serviceable Location Fabric ("BSLF") Pilot dataset. The same holds for any future BSLF development we are undertaking, regardless of whether we use public or proprietary, 3rd party vendor data. We have no intention to retain any personally identifiable information in any BSLF data we create. The BSLF simply contains the address, latitude and longitude, count of units at the address, and an indication of the land use (residential, business, etc..)

        a. If so, are you currently selling, sharing, transferring, or otherwise disclosing any such information to companies or other third-parties?

Response: Not applicable.

2. Are you currently prohibited by contract or law from disclosing any personally identifiable information relating to geolocation data of residences?

Response: As a general practice, we avoid the use and disclosure of personally identifiable information. Many times, this requirement is in the contract we have with clients. In regard to the BSLF, while our contracts with the public vendors we are using for the creation of the BSLF do not restrict our use of the data they provide to us, we have no intention of including this type

Mr. James W. Stegeman
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of data in our created file.

3. Are you aware of any current, planned, or potential uses the data related to the national fabric for marketing or advertising purposes by companies?

Response: Given that we will not include personally identifiable information in the BSLF, the only potential marketing or advertising programs the BSLF could support are general mailers to the "Current Resident".

We would note that under the FCC rules for new broadband buildouts by carriers using FCC funds, the addresses built to by the carriers must be publicly filed at USAC's Hubb portal. We imagine that in addition to the other datasets that carriers use to derive the location data for the Hubb filing, the BSLF may be used in a similar manner.

4. Please recommend any safeguards that this Subcommittee, the Congress, or the FCC could require to ensure that geolocation data of residences that may result from our efforts to improve broadband maps is not abused, including for marketing purposes.

Response: We would suggest at least the following:
- The fabric that is adopted be restricted from including personally identifiable information.
- Any fabric that is adopted be made available as restricted or limited in use. That is, a consumer can type in their address and view the information of a single address. However, anyone who downloads multiple records must adhere to limitations on use, including the inability to resell, repackage, distribute, and/or re-license the data and derivatives, limitation on use to create mailing list or to use to communicate with a residence, etc..

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