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1. Mr. Slesinger’s full statement can be found at: [https://docs.house.gov/meetings/if/if16/20180130/106810/hhrg-115-if16-wstate-slesingers-20180130-u5050.pdf](https://docs.house.gov/meetings/if/if16/20180130/106810/hhrg-115-if16-wstate-slesingers-20180130-u5050.pdf).

OPENING STATEMENT OF HON. MARSHA BLACKBURN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TENNESSEE

Mrs. BLACKBURN. The Subcommittee on Communications and Technology will now come to order. The chair now recognizes herself for 5 minutes for an opening statement.

Welcome to the subcommittee’s first hearing of the new year. And I must say, we are off to a very promising start. We wanted to have a very inclusive hearing today to discuss all of the great
ideas from subcommittee members on both of sides of aisle to create broadband infrastructure deployment, and a goal of closing the digital divide. Whether you agree or disagree with any individual idea, it is so important that we get the conversation started, and we have got a lot to talk about with 25 bills introduced in time to be a part of today's hearing. I very much appreciate all of the thoughtful proposals and the great work from the staff of both the Republican and the Democrat side, and I look forward to seeing progress as we move through the next few weeks.

These legislative initiatives follow the leadership of President Trump's recent efforts on broadband infrastructure. The bills to be examined in this hearing are targeted at promoting the innovation, cutting red tape, and advancing public safety.

It is impossible in my allotted time to highlight each bill, but I do want to call attention to a couple of resolutions expressing the guiding principles on broadband infrastructure that should underpin our efforts.

First, as noted by Vice Chairman Lance, any funds for broadband in an infrastructure package should go to unserved areas.

Second, as noted by Congressman Latta, the Federal Government should not be picking winners and losers in the marketplace. Any Federal support for broadband infrastructure should be competitively and technologically neutral.

If we adhere to these principles, I am confident we can avoid the pitfalls of waste, fraud, inefficiency that marred the previous administration's efforts on broadband infrastructure.

Lastly, and perhaps most important, Congress should be mindful of the significant amounts of private capital spent to support broadband deployment. Since passage of the bipartisan 1996 Telecom Act, the private sector has invested roughly $1.6 trillion in their networks.

This investment includes wireline, wireless and other broadband technologies. However, this investment experienced a decline that coincided with the FCC's 2015 decision to reclassify the competitive broadband marketplace under Title II of the Communications Act, an outdated relic of the 1930's monopoly era.

I want to reiterate our support for Chairman Pai, who corrected this ill-conceived policy and returned us to the light-touch regulatory approach that allowed the digital economy to flourish. This light-touch approach has been the bedrock of communications policy since the Clinton administration.

As I previously stated, history makes clear that countries with the best communications have the highest economic growth. Continuing our Nation's leadership is, and most important, must remain a bipartisan effort.

And I am pleased to note that our effort has broad support from a cross section of the industry.

At this time, I would like to enter into the record several letters of support from American Cable Association, CTIA, NCTA, Competitive Carriers Association, Telecommunications Industry Association, U.S. Chamber of Commerce, Power and Communication Contractors Association, and the Wireless Infrastructure Association.

[The information appears at the conclusion of the hearing.]
Mrs. BLACKBURN. I am pleased to convene this hearing. I look forward to the testimony of our witnesses. And with that, I yield the remainder of my time to the vice chairman of the subcommittee, Mr. Lance.

[The prepared statement of Mrs. Blackburn follows:]

PREPARED STATEMENT OF HON. MARSHA BLACKBURN

Welcome to the subcommittee’s first hearing of the new year. And I must say we are off to a very promising start. We wanted to have a very inclusive hearing today to discuss all of the ideas from Subcommittee members on both sides of the aisle to promote broadband infrastructure deployment with a goal of closing the digital divide. Whether you agree or disagree with any individual idea, it is so important that we get the conversation started. And we have plenty to talk about, with 25 bills introduced in time to be part of our hearing today. I very much appreciate all of the thoughtful proposals and look forward to seeing many of them progress in the coming weeks.

These legislative initiatives follow the leadership of President Trump’s recent efforts on broadband infrastructure. As stated in the President’s recent Executive Order:

“Americans need access to broadband internet service to succeed in today’s information-driven, global economy.

“Currently, too many American citizens and businesses lack access to this basic tool. [and] this problem is particularly acute in rural America.”

Collectively, the bills to be examined at this hearing are targeted at promoting innovation, cutting red tape, and advancing public safety.

Together, Congress and the administration can help span the digital divide so all Americans may fully realize the innovations made possible by broadband.

This will require expanding broadband to unserved areas, supporting deployment of advanced networks and new technology, as well as helping citizens recover from hurricanes, floods, fires, and other disasters.

It’s impossible in my allotted time to highlight each bill, but I do want to call attention to a couple of resolutions expressing the guiding principles on broadband infrastructure that should underpin our efforts:

First, as noted by Vice Chairman Lance, any funds for broadband in an infrastructure package should go to unserved areas.

Second, as noted by Congressman Latta, the Federal Government should not be picking winners and losers in the marketplace; any federal support for broadband infrastructure should be competitively and technologically neutral.

If we adhere to these principles, I am confident we can avoid the pitfalls of waste, fraud, abuse, and inefficiency that marred the previous administration’s efforts on broadband infrastructure.

Lastly, and perhaps most importantly, Congress should be mindful of the significant amounts of private capital spent to support broadband deployment. Since passage of the bipartisan 1996 Telecommunications Act, the private sector has invested roughly $1.6 trillion in their networks.

This investment includes wireline, wireless, and other broadband technologies. However, this investment experienced a decline that coincided with the FCC’s 2015 decision to reclassify the competitive broadband marketplace under Title II of the Communications Act, an outdated relic of the 1930s monopoly-era.

I want to reiterate our support for Chairman Pai who corrected this ill-conceived policy and returned us to the light-touch regulatory approach that allowed the digital economy to flourish. This light-touch approach has been the bedrock of communications policy since the Clinton administration.

As I have previously stated: history makes clear that countries with the best communications have the highest economic growth. Continuing our nation’s leadership is, and must remain, a bipartisan effort.

I am pleased to convene this hearing, and I look forward to the testimony of our witnesses.

Mr. LANCE. Thank you very much. And first of all, the State of the Union is that the chair is doing a terrific job at this subcommittee.

Since 1996, the wireless and wireline industries have invested over $1.6 trillion in private capital investment. As we consider how
best to promote broadband deployment and Next Generation Net-
works, it is important that we remember the success of private in-
vestment in the past and pursue Federal policies to help and en-
courage an emphasis on private investment in the future.

As our economy becomes more digitized, we must ensure broad-
band access to all areas of the country.

It is important that we recognize that any Federal funds for broad-
band deployment will be finite, and our focus on unserved or un-
erserved areas of the Nation.

I am pleased we are considering the Access Broadband Act,
which I have introduced with Congressman Tonko on a bipar-
tisan basis. I commend the chair and the members of the sub-
committee on both sides of the aisle on the impressive package of broadband
infrastructure bills we are considering today. I look forward to
hearing the testimony from the panel.

Madam Chair, I yield back.

[The prepared statement of Mr. Lance follows:]

PREPARED STATEMENT OF HON. LEONARD LANCE

Thank you, Chairman Blackburn, and thank you to our dis-
tinguished panel members for appearing before us today.

Since 1996, the wireless and wireline industries have invested over $1.6 trillion
in private capital investment. As we consider how best to promote broad-
band deployment and next generation networks it is important that we remember the suc-
cesses of private investment in the past and pursue federal policies to help and en-
courage an emphasis on more private investment in the future.

As our economy becomes increasingly more digitized, bringing broadband access
to more areas of the country connects more consumers and small businesses to the
internet economy for the economic benefit of all. However, in many rural areas of
the country, the cost to deploy broadband infrastructure is prohibitive and I believe
that there is a role for federal funding to play in the cases where prohibitive costs
prevent a market solution.

However, it is important that we recognize that any federal funds for broad-
band deployment will be finite and are focused on unserved areas of the country. The Federal
Government should not be in the business of subsidizing competitors in
local markets where a broadband provider already provides service and I am
pleased that we are considering my resolution that clearly states this principle.

I am also pleased we are considering the ACCESS BROADBAND Act, which I in-
roduced with Congressman Tonko. The bill would streamline the federal grant pro-
gams related to broadband deployment and better track how federal funds are
used. I thank Congressman Tonko for his leadership on this important issue.

I commend Chairman Blackburn and the members of the subcommittee on both
sides of the aisle on the impressive package of broadband infrastructure bills we are
considering today. I look forward to hearing the testimonies from the panel.

Mr. Doyle, you are recognized, 5 minutes.

OPENING STATEMENT OF HON. MICHAEL F. DOYLE, A REP-
RESENTATIVE IN CONGRESS FROM THE COMMONWEALTH
OF PENNSYLVANIA

Mr. Doyle. Thank you, Madam Chair for holding this hearing,
and thank you to the witnesses for appearing before us today.

I want to start off by saying that I share Chairman Blackburn's
and this committee's goal of ensuring that all Americans have ac-
cess to broadband, and that we need to come together, on a bipar-
tisan basis, to address the challenges that millions of Americans
face today from a lack of broadband access, a lack of sufficient
speeds, and a lack of affordable option. While it is crucial that no-
body gets left behind, I believe we cannot ignore the lack of competition, particularly among wireline providers, and the high cost of service that results in far too many foregoing service.

That being said, I am concerned about the approach we are taking here today. We are considering 25 bills at this hearing. I can't remember a time when this committee held a hearing on so many bills with a single panel of witnesses. We are simply not giving these bills the time and expertise required for the members of this committee to fully consider each of these bills and the ramifications. It would seem to me far more prudent to have hold a series of hearings so that members would have an opportunity to discuss and understand the proposals before us. Rushing this process gives short shrift to many worthwhile ideas for members on both sides of the aisle, and precludes these bills from undergoing a truly deliberative process.

It is my hope that Chairman Blackburn and the committee staff for the majority can work with us to avoid this unnecessary problem for the future. It is my hope, Madam Chair, that as we move forward on broadband infrastructure legislation, we can do so on a collaborative and bipartisan basis.

That being said, I am concerned that many of the majority's proposals do not actually address the primary issue of getting broadband to rural America, and that there is no business case for that private investment. If we are serious about solving this problem, and we believe that people living in rural areas should have access to reasonably comparable service, we need to appropriate the funds necessary for that buildout.

With that Madam Chair, I would like to yield a minute to my good friend, Ms. Eshoo from California, and then a minute and a half to my good friend, Mr. Welch.

[The prepared statement of Mr. Doyle follows:]

PREPARED STATEMENT OF HON. MICHAEL F. DOYLE

Thank you, Chairman Blackburn for holding this hearing, and thank you to the witnesses for appearing before us today.

I want to start off by saying that I share Chairman Blackburn's and this Committee's goal of ensuring that all Americans have access to broadband—and that we need to come together on a bipartisan basis to address the challenges that millions of Americans face today from a lack of broadband access, a lack of sufficient speeds, and a lack of affordable options.

While it is crucial that nobody gets left behind, I believe that we cannot ignore the lack of competition, particularly among wireline providers, and the high cost of service that results in far too many people foregoing service.

That being said, I am concerned about the approach we are taking here today. We are considering twenty five bills at this hearing, I don't remember a time when this Committee held a hearing on so many bills with a single panel of witnesses. We are simply not giving these bills the time and expertise required for the members of this Committee to fully consider each of these bills and their ramifications.

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It is my hope that Chairman Blackburn and the Committee staff for the majority can work with us to avoid this shortsightedness and avoid unnecessary problems for the future. It is my hope, Madam Chairman, that as we move forward on broadband infrastructure legislation we can do so on a collaborative and bipartisan basis.

That being said, I am concerned that many of the Majority's proposals do not actually address the primary issue of getting broadband to rural America—and that
there is no business case for private investment. If we are serious about solving this problem, and we believe that people living in rural areas should have access to reasonably comparable service, we need to appropriate the funds necessary for that buildout.

Ms. Eshoo. I thank the ranking member.

Here it is, the second decade of the 21st century, and too many Americans cannot fully participate in modern life, because they do not have a robust broadband connection. It is either unavailable to them, or it is unaffordable, and it is our responsibility to remedy this. That is why I have introduced several bills to clear the way for communities to take control. The Community Broadband Act and the Climb Once Act both ensure that communities are empowered to create their own municipal broadband networks, and streamline pole attachments to improve efficiency and competition.

Where muni broadband is deployed, and where Climb Once policies are in place, such as Louisville, Kentucky, Nashville, Tennessee, and soon, San Francisco, California, consumers enjoy more access, better service and lower prices. And a recent Harvard study showed that communities with municipal broadband were up to 50 percent lower in cost than private alternatives. And the Community Broadband Act will open the doors for all communities to explore that option. And most especially, both of these bills will really boost and make a difference in rural America.

So I thank the gentleman for yielding time to me, and I yield back to him.

Mr. Doyle. Yes. And I yield the remaining time to Mr. Welch.

Mr. Welch. Thank you. We know about 40 percent of rural America has no broadband. Not slow broadband, no broadband. And there is no economic future for any part of our country if it doesn’t have high speed internet. And rural America is being left behind. And the other issue here is that it makes no economic sense for private markets to be expanding in the rural areas. There is no payback. Bottom line: We need funding to make certain that rural broadband is real. And we have a group on this committee that wrote to President Trump, Mr. Cramer, Mr. Kinzinger, Mr. Latta. We want infrastructure funding that is real so that there is broadband in rural America.

Now, absent funding, there is no broadband. It is as simple as that. This is a good hearing on several good bills, but there is nothing before us that is going to address the funding that we need for infrastructure for rural broadband.

In my call to the committee, is that we get real and acknowledge that we have to have money for this buildout, much as our predecessors in Congress provided funding for the buildout of electricity in rural America. No funding, no broadband. It is as simple as that. I yield back.

Mrs. Blackburn. The gentleman yields back.

At this time, Chairman Walden, you are recognized for 5 minutes.

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

Mr. Walden. Thank you, Madam Chair, and thanks to all our members, and especially to our witnesses. We got a big panel of
witnesses because we have a lot of really important ideas from our members. We have got 25 bills, as you have heard: eight of them from Democrats, the other 17 from Republicans. Obviously, this committee is used to dealing with big, important issues. Sometimes we have had bills that are maybe hundreds of pages long. These are, I think, important policy statements in some cases, streamlining processes in other cases.

The whole concept here is to look at the broad range of ideas that members have brought to this committee for its consideration. And that is why at the subcommittee level, we thought it was important to put as many of these bills as possible up for the public to see, because it is on our agenda and our website, but also for us to begin getting our heads around as we move forward in our legislative process.

So I am delighted to have the bills before us. I am delighted you all are before us. I remember when the last administration did the stimulus bill. It was a whopping $7 billion they pushed out the door before they produced the maps to tell us where unserved areas were in America. They only did that after the fact.

So as you know, we are trying to get the other side of that coin and identify where are the really unserved and underserved areas? What kind of reporting mechanisms are poorly being conducted today to show us that? We want NTIA and other organizations to help us figure that out. So when the taxpayer or ratepayers’ money is invested, it is not invested to overbuild, it is invested to reach out to the 29 million Americans, 23 million Americans, 39 percent rural areas that don’t have access to high speed broadband.

Because you know, at $7 billion, you have to remember in the market, they are spending close to $80 billion a year on broadband deployment; $1.6 trillion between 1996, I think it is, and 2006. But anyway, the big investment here is done on the private sector. There is public money that is spent. Our job is to make sure that public money is spent appropriately and helps close this digital divide.

You want to talk about rural? My district would stretch from the Atlantic to Ohio. It is 69,341 square miles. I have got places in my district where there is one person for every 9 miles of power line. We live this gap every day, and we are trying to close it. And there are multiple ways to close it, but one of the best ways is to make sure that we can expedite the closure of that through reform siting, targeting the financial resources of ratepayers and the government, specifically to those areas that are underserved, and helping move this country forward to connectivity like we have never seen before.

In 2012, we worked in bipartisan manner in this committee to free up spectrum. That is now being built out. We want to move forward with 5G development. Oh, by the way, we are not Venezuela where the government doesn’t need to own, operate, control through a command structure that kind of a network.

Now, there may be security issues, and I imagine there are, and we all ought to be apprised of, and I have asked for a briefing, either classified or non, to figure out what those issues are. We want to be smart about having a secure network for the newest innovation. But I don’t know that having the government run it is necessarily the best way to go. So we are looking at those issues, too.
This is an exciting time for America. We want to be in the lead. We don’t want to wait. We can do a hearing every week for 25 weeks and then move forward, or we can do one hearing with 25 bills, figure out our ideas among ourselves, come together as a committee in a bipartisan way, deal with making America, again, clear on the forefront on development of connectivity, wired and wireless, and the newest innovation and technology, much like we are trying to do with autonomous vehicles. I look at my friend and colleague from Ohio with the Self-Drive Act. We have a lot before us. Let’s get it done.

With that, Madam Chair, I yield back.

Mrs. BLACKBURN. The gentleman yields back. Is there any other member requesting his time? Not seeing anyone——

Mr. WELCH. Madam Chair?

Mrs. BLACKBURN [continuing]. I will—yes.

Mr. WELCH. I just have a request to—the letter that was signed, sent to the President asking for funds can be submitted into the record.

Mrs. BLACKBURN. Without objection.

Mr. WELCH. Thank you.

[The information appears at the conclusion of the hearing.]

Mrs. BLACKBURN. Yes. Mr. Pallone, at this time, I yield you 5 minutes.

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

Mr. PALLONE. Thank you, Madam Chair. One year ago, President Trump promised us $1 trillion infrastructure package that would bring Democrats and Republicans together. And for our part, in May of last year, committee Democrats introduced a comprehensive infrastructure package across all areas of this committee’s jurisdiction. Yet here we are, hours from the State of the Union without serious legislation from the President, and instead, we have proposals from House Republicans, that mostly conflict with the plan that was just leaked out of the White House.

In stark contrast, committee Democrats developed a legislative proposal to build the type of modern resilient infrastructure Americans need and deserve. At a time when our Nation’s infrastructure is either crumbling or in desperate need of modernization, it is time we make real and significant investments for the future.

The LIFT America Act authorizes $40 billion for the deployment of secure and resilient broadband. It would also provide over $22 billion for drinking water infrastructure; over $17 billion for modern, efficient and resilient energy infrastructure; over $3 billion for health care infrastructure; and almost $3 billion for brownfields redevelopment. And the LIFT America Act puts real dollars where they are needed: creating jobs, revitalizing communities, and addressing serious threats to human health and environment. It would address lead in school drinking water, fund medical facilities in Indian country, reduce carbon emissions, and improve our resilience to the impacts of climate change. And it would do all that without rolling back environmental safeguards, as we are now hearing is a majority component of the President’s plan. And when
it comes to broadband, we have also put forward additional thoughtful proposals building on the strong foundations of the LIFT America Act. Our bills would ensure we are investing in our infrastructure efficiently, basing our decision on good data and reaching urban, rural, and tribal lands.

Over the last couple of weeks, we have seen bipartisan and bicameral agreement that we need dedicated funding to improve access to broadband nationwide. Yet despite this rare consensus, Republicans on this committee have decided to unveil a series of partisan bills that don’t address the real problems. These bills are simply window dressing. They unnecessarily pit urban versus rural, industry versus local government, and broadband access versus our environment. And the Republican proposals will not improve broadband development, and may, indeed, hurt workers and the economy in parts of the country.

So I appreciate Republicans scheduling a hearing on broadband deployment and including some Democratic proposals, but I am concerned that the majority is simply trying to jam too much into this one hearing. Seven witnesses discussing 25 bills will not help the American public understand these proposals, let alone the members of this committee.

What is more, we do not even have the relevant agencies here to help us understand how they will interpret the often-conflicting directions that are included in the Republican bills. And we are now a little over a year into this administration, and all Washington Republicans have to show the American people, in this subcommittee’s purview, are a check-the-box hearing to design to paper over this Republicans’ failure on infrastructure, the erosion of our privacy rights, and the elimination of net neutrality. And when it comes to governing, this subcommittee, in my opinion, is falling short.

And with that, I yield the balance of my time to Mr. Ruiz.

[The prepared statement of Mr. Pallone follows:]

**Prepared statement of Hon. Frank Pallone, Jr.**

One year ago, President Trump promised us a trillion dollar infrastructure package that would bring Democrats and Republicans together. And for our part, in May of last year Committee Democrats introduced a comprehensive infrastructure package across all areas of this Committee’s jurisdiction. Yet, here we are, hours from the State of the Union, without serious legislation from the President. All we have are some back of the napkin proposals from House Republicans that completely conflict with the plan just leaked out of the White House.

In stark contrast, Committee Democrats developed a legislative proposal to build the type of modern, resilient infrastructure Americans need and deserve. At a time when our nation’s infrastructure is either crumbling or in desperate need of modernization, it’s time we make real and significant investments for the future.

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When it comes to broadband, we have also put forward additional, thoughtful proposals, building on the strong foundation of the LIFT America Act. Our bills would ensure we’re investing in our infrastructure efficiently, basing our decision on good data, and reaching urban, rural, and tribal lands.

Over the last couple of weeks, we have seen bipartisan and bicameral agreement that we need dedicated funding to improve access to broadband nationwide. Yet, despite this rare consensus, Republicans on this Committee have decided to unveil a series of partisan bills that don’t address the real problems. But these bills are worse than simply window dressing. They turn bipartisan agreements on their head, unnecessarily pitting urban versus rural, industry versus local governments, and broadband access versus our environment. The Republican proposals will not improve broadband deployment, but will hurt workers and the economy.

I appreciate Republicans scheduling a hearing on broadband deployment and including some Democratic proposals, but I’m concerned that the Majority is simply trying to jam too much into this one hearing. Seven witnesses discussing 25 bills will not help the American public understand these proposals, let alone the members of this Committee. What’s more, we do not even have the relevant agencies here to help us understand how they will interpret the often conflicting directions included in the Republican bills.

We are now a little over year into this Administration, and all Washington Republicans have to show the American people in this Subcommittee’s purview are a check-the-box hearing designed to paper over the Republicans’ failure on infrastructure; their erosion of our privacy rights; and their elimination of net neutrality. When it comes to governing, this Subcommittee is falling short.

Thank you.

Mr. RUIZ. Thank you. In today’s digital age, access to high speed internet is simply essential. That is why we must do more to bridge the digital divide. Today, the committee is finally beginning to advance the bipartisan commonsense solutions that we were sent here to find. For example, the bipartisan Rural Wireless Access Act introduced by Mr. Loebsack, would help the FCC provide targeted Federal assistance to deploy wireless service in rural areas with the worst coverage.

In my bill, H.R. 1581, the Tribal Digital Access Act would help close the digital divide in Indian country by codifying and reinforcing the importance of the FCC Universal Service Fund programs that serve tribal communities.

Tribal lands are the most underserved regions in our Nation in terms of broadband access. We have a responsibility to honor our legal and moral obligations, and this commonsense bill helps do just that. I urge the committee to move these bills as quickly as possible along with other bipartisan solutions before us here today.

And I yield back my time to Mr. Pallone.

Mr. PALLONE. And I yield back, Madam Chair.

Mrs. BLACKBURN. The gentleman yields back, and this concludes our member opening statements.

I would like to remind all the members that, pursuant to the committee rules, you all have your statements that can be made a part of the record. And we want to thank our witnesses for being here today and for taking their time to testify before the subcommittee.

Today’s witnesses will have the opportunity to give opening statements, followed by a round of questions from the members. Our panel for today’s hearing will include Mr. Jonathan Spalter, President and CEO of USTelecom; Mr. Brad Gillen, Executive VP of CTIA; Mr. Matt Polka, President and CEO of the American Cable Association; Ms. Shirley Bloomfield, CEO of the NTCA—the Rural Broadband Association; Mr. Scott Slesinger, the Legislative
Director of the Natural Resources Defense Council; Ms. Joanne Hovis, President of CTC Technology and Energy; and Ms. Elin Swanson Katz, the Connecticut Consumer Counsel.

We appreciate each of you for being here today and for preparing for this committee, submitting your testimony. Today, we will begin with you, Mr. Spalter, for 5 minutes, and we will work right through the dais. You are recognized.

STATEMENTS OF JONATHAN SPALTER, PRESIDENT AND CEO, USTELECOM; BRAD GILLEN, EXECUTIVE VICE PRESIDENT, CTIA; MATTHEW M. POLKA, PRESIDENT AND CEO, AMERICAN CABLE ASSOCIATION; SHIRLEY BLOOMFIELD, CEO, NTCATHE RURAL BROADBAND ASSOCIATION; SCOTT SLESINGER, LEGISLATIVE DIRECTOR, NATURAL RESOURCES DEFENSE COUNCIL; JOANNE S. HOVIS, PRESIDENT, CTC TECHNOLOGY AND ENERGY; AND ELIN SWANSON KATZ, CONSUMER COUNSEL, CONNECTICUT CONSUMER COUNSEL

STATEMENT OF JONATHAN SPALTER

Mr. S PALTER. Thank you. Chairwoman Blackburn, Ranking Member Doyle, and other distinguished members of the subcommittee, thank you for the opportunity to appear before you. I am Jonathan Spalter, President and CEO of USTelecom, representing our Nation's broadband providers, large and small, urban and rural, and everything in between. All of our members are deeply committed to and are on the front lines of the massive effort underway to connect all Americans to the opportunities and possibilities of broadband. So we greatly appreciate this subcommittee's leadership and the growing momentum we are seeing throughout Congress on both sides of the aisle to aid this effort.

In a few short hours, we know the President will deliver his State of the Union address, and according to the pundits, topics that draw consensus will probably be few and far between. But infrastructure is one of those rare issues with a powerful centrifugal force pulling us all together. From the administration's statements and actions to Senator's Schumer's blueprint to the 25 bills now making their way through this committee, Washington has caught up to the connected times, and not a moment too soon, acknowledging the pivotal role of information infrastructure, the 1s and 0s of broadband networks to our Nation.

Since the earliest days of our internet as we sought to rise above the honk and screech of dial-up service, expanding and upgrading the Nation's broadband networks has largely been a private sector endeavor. America's broadband providers have invested, as Vice Chairman Lance and as Chairman Walden mentioned, more than $1.5 trillion over the last two decades, building out U.S. digital infrastructure, and that is more than our Nation spent in public dollars to put a man on the moon, and to build out our interstate highway system combined.

So why must we continue to commit public funds to the cause? Because we risk leaving millions of U.S. households and citizens behind if we do not. We know the private investment model works well in reasonably populous areas, but the business case breaks down when the average $27,000 per mile of LAN fiber, not to men-
tion the network upgrades and maintenance costs associated with it that are constantly required, must be spread across a handful of users.

Broadband companies, USTelecom members, want to connect everyone from our most populated urban areas to the most remote rural communities in our Nation, but they need a committed partner in these final unserved, high-cost areas. And that partner should be all of us, including government.

So what specifically does that mean? First, new and direct public funding is needed to supplement private investment in connecting the final frontier. Second, care must be taken to ensure broadband funding is not merely an option on a vast spending menu, but has its own specific allocation. A position now being championed by the bipartisan cochairs of the rural broadband caucus. And thank you very much for that. Third, public dollars should prioritize connecting unserved areas using proven mechanisms, chief among them, universal service fund, to move quickly and with accountability while minimizing administrative costs to U.S. taxpayers. Fourth, connectivity also should be factored into physical infrastructure projects. Adding more of our bridges and roads to broadband connectivity makes them smarter, safer, more cost effective, and extends their useful life. Last, a stable streamlined regulatory environment can accelerate and extend the impact of both public and private dollars.

Earlier this month, the President signed an executive order to expedite Federal permitting so broadband companies can build infrastructure in rural areas faster. Continuing these efforts reduces deployment costs, stretching limited resources further. When it comes to broadband, this grand aspiration of a truly connected nation truly is within striking distance. Working together, we have the means and the opportunity to relegate this challenge to the history books. All that remains is a question of will.

For that reason, I really greatly appreciate the subcommittee's interest today and your ongoing leadership. The Nation's broadband provider stands ready to link arms with the Nation's policy leaders and anyone else who wants to help step up to finish the job. Thank you very much.

[The prepared statement of Mr. Spalter follows:]
Introduction

Chairman Blackburn, Ranking Member Doyle, and other distinguished Members of the Subcommittee, 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.

USTelecom is the nation’s leading trade association representing the interests of broadband service providers and suppliers for the telecom industry. Our diverse membership ranges from large publicly traded communications corporations to small companies and cooperatives—all providing advanced communications services to markets both urban and rural and everything in between.

We applaud the subcommittee for conducting today’s hearing. Closing the digital divide should be one of our nation’s top priorities, and addressing certain challenges related to the deployment of broadband infrastructure is critical to narrowing the gap between broadband deployment in urban and rural areas. As Congress works to develop broadband infrastructure legislation, this hearing presents a timely opportunity to discuss the key components that will speed the deployment of broadband infrastructure to rural communities.

The Importance of Closing the Digital Divide

We all agree that addressing our nation’s infrastructure needs, including our digital infrastructure, is an important national priority. We also know that the ones and zeros of broadband are neither red nor blue. We all need to work together toward legislation that is good for the country and for your constituents. This Committee’s bipartisan focus on removing barriers to infrastructure buildout,
supporting and encouraging innovation, and strengthening the public safety benefits that result from access to broadband is exemplary and should be continually strengthened.

Earlier this month, the Administration’s Rural Prosperity Report from the Department of Agriculture signaled that our government is focused on ensuring that our rural areas do not get left behind in the nation’s accelerating transition to an interconnected, digital economy. I was similarly encouraged to see a recent letter from the bipartisan House Rural Broadband Caucus outlining why broadband connectivity and closing the digital divide is so important: “Rural communities must have adequate broadband infrastructure to attract and retain businesses and human resources, close the homework gap for students and teachers, open innovative and convenient pathways to telemedicine for seniors and providers, and help farmers increase efficiencies in their barns and on their land.”

We could not agree more and USTelecom’s members are working hard to deploy networks and invest in and connect communities from coast to coast. But we cannot do this alone.

Broadband service is no longer a luxury; it is an essential component of our national infrastructure and economic success. Many Americans in urban areas use broadband for a variety of purposes: communicating with loved ones, accessing health care and educational resources, expressing their views on social media, shopping for goods and services as well as making their own goods and services available to others throughout the country and the world. But for too many Americans living or working on our farms or ranches and along our mountain valleys, our forests, tundra and plains, the promise and potential that connectivity can bring remains elusive.

In addition, many Americans in rural areas do not have immediate access to health care and educational resources that broadband connectivity could supplement if such connectivity is available. By the end of the decade, there could be 45,000 fewer rural doctors, making the need for connected care even more critical. And more than 5 million rural students will be pursuing online degrees.
While we face some deployment obstacles in rural parts of the country, we also must do more to accelerate adoption in urban areas. Every citizen, whether living in rural or urban areas benefits from connecting to the internet ecosystem. Our member companies are consistently looking for new and creative ways to serve their existing customers and attract new ones. The ability to offer innovative new pricing and service options to further increase adoption in both urban and rural areas is an important factor in today's highly competitive broadband market. USTelecom's member companies are working to lower barriers to adoption and to deploy high speed connections as far and wide as possible.

**Key Components of Broadband Infrastructure Legislation**

Broadband providers are on the front line in the effort to close the digital divide investing $1.6 trillion of their own capital to upgrade and expand the nation's digital infrastructure since 1996. As a result, over the past decade, broadband in rural homes has risen 117 percent.

Despite these efforts, there is more work to be done. Many of USTelecom's member-companies, family-owned businesses in small towns serving America's rural heartland, can testify to how expensive it can be to expand or upgrade networks in rural areas. While the Executive Orders signed by the President are a welcome first step in addressing this issue, Congressional action is also critical to address this gap. We need bipartisan legislation to (1) ensure sustainable and direct federal funding to support rural broadband deployment and (2) reduce regulatory barriers, both of which will also incentivize more private investment.

**Direct Federal Funding for Rural Broadband Deployment**

There is a clearly demonstrated need for federal funding for broadband infrastructure in rural areas where there is no business case to deploy next-generation networks. And, for the reasons I previously discussed, broadband deployment is too critical to merely be an option for larger spending
initiatives; broadband must have its own specific funding allocation, a position with which the co-chairs of the Rural Broadband Caucus recently agreed.

In addition, broadband deployment's significant multiplier effect, which directly contributes to job creation, economic growth, advances in health care delivery, improved educational outcomes, enhanced access to government services, and other societal benefits, means that monies allocated directly to broadband deployment will be leveraged for these other important priorities. Given this, Congress should ensure that brick and mortar infrastructure projects funded by federal dollars are future proofed by integrating broadband connectivity. We must commit not only to closing the digital divide which exists between our communities, but also the broadband gap which exists between many of our nation's physical infrastructure assets. When traditional infrastructure is equipped with broadband, we know it is not only smarter, but also safer, more resilient, and more cost effective.

Investing in rural wireline broadband infrastructure is also critical to ensuring that rural Americans can avail themselves of the opportunities associated with the wireless 5G revolution which will depend on enhanced fiber deployments. Small cells rely on fiber to deliver wireless traffic back to the network.

Further, any increase in direct spending should be administered by the Federal Communications Commission through an increase in high-cost universal service fund support, or through a direct appropriation from Congress. Time is of the essence. We should look to existing programs that are well equipped to get additional resources out to the communities as quickly as possible. And to maximize finite resources to really bridge the digital divide, any increase in direct spending for broadband deployment should be targeted to ensure that funding to unserved areas is prioritized.
Permitting Reform

Congress needs to pass legislation that standardizes and streamlines permitting necessary to deploy broadband infrastructure which would help speed deployment. When scarce capital is being allocated to increase broadband connectivity, state and localities should not impede that deployment by delaying the granting of permits or insisting upon non-cost-based fees for access to rights-of-way and other conduit. The same principle applies to federal lands, which is why the Administration’s recent Executive Orders covering deployment on federal lands are so important, as are the bills under consideration today. Bills like Representative Mimi Walters’ “Communications Facilities Deployment on Federal Property Act of 2018,” Representative Paul Tonko’s “ACCESS BROADBAND Act,” and Representative John Shimkus’ “Streamlining Permitting to Enable Efficient Deployment of Broadband Infrastructure,” are vital to tackling this issue with streamlined, responsible solutions. So too are the principles put forth by the numerous resolutions that should guide any infrastructure effort moving forward in this body. Thank you to Representative Bob Latta for emphasizing parity via technical neutrality and consistent rules, and Vice Chairman Leonard Lance for keeping our focus tailored on the truly unserved areas in our country. As we continue the sprint toward the next generation of communication networks, these principles will expedite the realization of a fully connected future.

Pole Attachment Reform

Just as states and localities can impede broadband deployment by making it more difficult to deploy broadband infrastructure in rights-of-way and other conduit, pole owners can also slow broadband deployment and make it much more costly. Congress should fix the disparities in Section 224 of the Communications Act, eliminating not only the exclusions for municipalities and co-ops, but also treating the Commission’s rate formula as a ceiling, rather than a floor, and providing that all attachments should be treated alike for rate purposes.
Conclusion

The challenges associated with rural broadband connectivity require an enduring private and public sector effort. USTelecom and its member-companies stand ready to work with this subcommittee, Congress, and the Administration to enhance broadband connectivity in rural areas. We commend the members of this subcommittee who have introduced legislation to address the problems associated with broadband deployment, and we look forward to working with all of you to help close the digital divide.

A sustained effort will take time and resources, but is essential if rural Americans are going to have the opportunity to benefit from the digital revolution. Thank you again for the opportunity testify before you today.
STATEMENT OF BRAD GILLEN

Mr. GILLEN. Good morning. Thank you, Chairman Blackburn, Ranking Member Doyle, and the subcommittee for including wireless as part of this conversation.

The sheer number of bills and proposals before us underscores the scope of the challenges we face together, as well as the opportunities we have working together to solve them. For us, we really see the infrastructure as the opportunity to create jobs, drive economic growth and expand opportunities for all Americans for better broadband to more Americans.

The subcommittee has really two core challenges before you. The first is the digital divide. From Vermont to eastern Oregon, there are too many Americans today, despite billions invested and years of work that do not have access to the wired and wireless broadband solutions that all of us rely on every day. We look forward to working with this subcommittee to shrink and address that gap and drive both wired and wireless broadband deeper in America.

Our second challenge is one of global competitiveness. We lead the world today in 4G wireless services. Just last month, the International Standards body set the rules for the 5th generation of wireless, or 5G, and the race is now on. Other countries have seen what leadership has meant here, and they want to take that mantle from us. China and others are investing billions and accelerating their deployment schedules with over 100 active trials ongoing today.

In the U.S., we like to win, too, and we are ready to invest as well. We have our own trials ongoing. We are investing in the technology we think we are going to need to win, and ultimately, we are ready to invest approximately $275 billion in private capital over the next 10 years to build out those networks.

So we don’t need Federal funding from this committee to solve the 5G problem. We do need help to modernize our approach to siting. Because these networks will be different because we are going to build them with these, small cells, hundreds of thousands of these attached to street lights and to sides of buildings. And the challenge we face today is that too often, a device that takes 1 to 2 hours to install can take 1 to 2 years to get approved.

The challenge we face is that because at every level of government, local, state and Federal, we treat these like a 275-foot tower along the side of a highway. In short, our new networks need new rules, and that is why we appreciate this committee’s focus on this issue, particularly today, focusing on the Federal impediments we face. Representative Shimkus is focusing on how do we modernize our Federal regulation to expedite deployment of things like this and other new infrastructure. Congresswoman Brooks and Representative Matsui, how do we marshal Federal assets to drive broadband deeper into rural America by better utilizing Federal lands.

The other thing for this committee, we would hope for in future sessions to talk about, is this committee’s leadership and role with
respect to state and local siting as well. It is the committee’s leadership in 1992, 1996, and most recently in 2012, to give guardrails and guidance to local communities as to how siting can and should work to ensure we have deployment of wireless and broadband. And just like Federal rules need to be updated, so does that Federal guidance. And when we get those rules right, 5G will be transformative to all of your communities. It will unlock remote surgery, self-driving cars, and the Internet of Things. It is going to create jobs. It is going to create 2800 jobs in downtown Pittsburgh, 3 million across the country. It is going to build communities.

Clarksville, Tennessee will see over $200 million added to its economy, $500 billion nationwide. That is why we are excited about winning the 5G race. That is why we think it is so important. And we also need to make sure in doing that, we also make sure that all Americans have access to broadband at the same time. So we think with bold bipartisan leadership by this Congress, this committee, we can and need to do both.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Gillen follows:]

[The prepared statement of Mr. Gillen follows:]
Testimony of
Brad Gillen
Executive Vice President
CTIA

on
“Closing the Digital Divide: Broadband Infrastructure Solutions”

before the
U.S. House Energy and Commerce Subcommittee on Communications and Technology

January 30th, 2018
Chairman Blackburn, Ranking Member Doyle, and members of the Subcommittee, on behalf of CTIA and the wireless industry, thank you for the opportunity to testify today.

We support the Committee's agenda to facilitate building and investing in broadband, America’s 21st century infrastructure. The Committee’s objective—to focus on innovation, investment, and eliminating barriers to deployment—will help drive new wireless services and new jobs to every state in the nation. Specifically, today’s focus on federal-level impediments is a good starting point to identify opportunities for policymakers to incent greater investment in wireless broadband networks. A broad cross-section of this Subcommittee has introduced legislation to address key infirmities in federal law and federal procedures that inhibit investment today, and we applaud your bipartisan leadership.

The timing of this hearing is fortuitous as U.S. wireless providers are preparing to roll out the next-generation of wireless networks, 5G, and bold federal infrastructure reform can greatly expedite the millions of jobs and billions of investment that national 5G deployment will bring. Nations from Asia to Europe are investing heavily in 5G, but none of those countries can match the dynamism of the U.S. wireless industry. With four nationwide providers, and dozens more regional carriers and resellers, massive private investment will be unleashed in the U.S. if the government modernizes its approach to infrastructure siting. With this Committee’s continued leadership, we are confident we can win the global race to 5G—as we did for 4G. We are equally confident that reforms can help the industry expand wireless coverage throughout the country, particularly in rural America.
The Wireless Industry Invests in Jobs and the Economy

Wireless networks and smartphones have become a central part of Americans’ daily lives. There are now more wireless connections than there are Americans, and over the past two years alone, U.S. mobile data usage has more than doubled. This rapid growth over the past few years has been made possible by the wireless industry’s substantial investment in our nation’s infrastructure. To meet consumer demand, wireless capital expenditures totaled $26.4 billion in 2016, and over $200 billion in the past seven years. Overall, the wireless industry supports more than 4.6 million American jobs, and contributes roughly $400 billion annually to the economy.

Modernizing Regulation Promises 5G Investment and Jobs

The wireless industry is poised to play an even more significant role in our economy with the arrival of 5G. 5G networks are expected to be up to 100 times faster than 4G networks, connect 100 times the number of devices, and respond five times as quickly. This increased speed and lower latency will improve Americans’ lives, unlocking innovations in healthcare, transportation, and manufacturing. 5G will also help deliver the benefits of the Internet of Things and enable smart communities.

The overall impact on the economy from 5G will be remarkable. Accenture reports 5G will create three million new jobs and add approximately $500 billion to the economy. To deploy tomorrow’s next-generation networks, wireless companies will need to complement today’s large towers with small cells that can be the size of a pizza box and will often be located discreetly on the side of a building or on a street light. Based on the need to implement this new small-cell architecture, it is estimated that wireless carriers will need to deploy hundreds of thousands of these small antennas.
over the next few years. This will require a substantial infrastructure build across the country.

The wireless industry stands ready to invest a projected $275 billion in that new network infrastructure. This is the exact type of investment this Subcommittee seeks to promote. Importantly, the industry does not require federal funding for 5G deployment, but simply needs infrastructure rules to be modernized to reflect this new network architecture. Building out these denser wireless networks faces roadblocks today as siting laws and policies at every level of government have not kept up with changing technologies.

**Proposed Legislation Will Help Address Federal Siting Challenges**

CTIA is encouraged by the range of bills that address federal challenges to next-generation broadband investment. They underscore the myriad federal issues inhibiting deployment today and the opportunity this Subcommittee has to facilitate more infrastructure deployment.

**Federal Regulations Add Costs and Delay Deployment.** Today, in order to install a new antenna or small cell, federal regulations require a cumbersome and costly review process that generally disregards the size or location of the new facility. For instance, wireless reviews under the National Historic Preservation Act, or “NHPA” and the National Environmental Protection Act or “NEPA” can run into the tens of thousands of dollars per installation, meaning a particular project can involve millions of dollars in reviews. NHPA mandates alone recently cost a carrier over $170,000 to install just 23 small cells in a parking lot. And these costs are increasing: one carrier reports that these costs have risen by over 1000 percent since 2010. The direct costs only tell part of the...
story: these reviews can take months, which add delays and uncertainty to projects, keeping customers from enjoying the benefits of better service.

Today, the FCC reviews nearly all antenna placements under the NHPA and NEPA. Notably, this regime is on top of separate historic and environmental protections that already attach to land and buildings designated for such protection, as well as additional state or local zoning requirements and fees. The suggestion that the NHPA/NEPA regime can be scaled back without threatening historically or environmentally sensitive sites is reinforced by the fact that NHPA/NEPA currently applies only to traditional wireless carriers, not to cable operators or other users of Wi-Fi/unlicensed spectrum. To be clear, the wireless industry supports appropriate environmental and historic preservation review for sensitive sites and major projects. The current structure, however, fails to reflect the different impact of new small cells or installations in previously approved locations.

The process is creating substantial burdens and delays in the deployment of the infrastructure necessary for creating additional capacity for 4G networks and laying the groundwork for 5G. The FCC has recognized this challenge and acted in bipartisan fashion to streamline these processes for some small cells. While the FCC has succeeded in reducing the number and types of antennas that are subject to the cumbersome review process, the FCC’s current exclusions are still too narrow. For example, not all types of small cells are covered, nor are all indoor locations. Congressional action would provide greater clarity and certainty.

That clarity and certainty would be achieved by Congressman Shimkus’s legislation—H.R. 4842—that modernizes the NEPA and NHPA process while preserving the critical role those regimes have in protecting our environment and history.
Specifically, H.R. 4842 is a narrowly tailored solution that preserves key protections for environmentally or historically significant areas. It recognizes the need to modernize the process to allow antennas in public rights-of-way and where new facilities simply replace existing ones or do not significantly expand existing ones. It also recognizes that an antenna classified as a small cell by the FCC should not face the same requirements as a 250-foot tower. These are common sense steps that will reduce the time to market and expedite investment.

Similarly, we support Congressman Olson’s efforts to address the critical rebuilding efforts going on in storm- and fire-ravaged communities across the country. We have the opportunity to collaborate and rebuild those communities with the most advanced wireless networks in the nation. H.R. 4845 would take the simple step of bypassing unnecessary NEPA review in disaster areas when new facilities replace damaged or lost facilities.

Deploying on Federal Lands can be Challenging. The federal government owns over 50 percent of the land in the 10 most western states. The federal government also owns and manages key buildings in major cities and towns throughout the country. In many parts of the nation, enhanced siting on federal lands will help wireless carriers more quickly deploy in unserved or underserved communities. The process to deploy wireless networks on federal lands is too often opaque with different applications requirements and timelines. Moreover, there is no clear fee structure in place, and agencies lack the incentives or guidelines to support timely deployment of new communications facilities. Leases to place new sites on lands regulated by the Bureau of Land Management or the National Park Service can take two or three years to negotiate. Even simple lease renewals can take 12-18 months.
While Congress directed the GSA to create common forms for infrastructure easement and right-of-way applications in 2012, federal agencies are not required to use those forms. Further, federal agencies have no obligation to act within a particular timeframe or to provide any rationale for a decision not to permit siting.

CTIA applauds legislation that will make siting easier on federal lands. Bipartisan legislation introduced by Congresswomen Brooks and Matsui would set new timelines around federal siting by requiring action on applications for access to federal lands within 270 days, after which the application would be deemed granted. Congresswoman Walters’ bill – H.R. 4795 – would also help streamline that process by setting a deadline for GSA to develop common forms, and would require federal agencies to use those forms, bringing much-needed predictability to the process.

Congressman Kinzinger has also correctly identified this investment challenge and his bill – H.R. 4082 – would bring transparency to the federal process by requiring agencies to track siting applications. Congressmen Collins (H.R. 4798) and Lujan (H.R. 4839) provide yet another key piece of the federal siting puzzle by addressing the challenge of making more accessible information about the location of potential federal assets where siting can occur.

All of these proposals to reform federal siting would help drive more investment in our nation’s broadband infrastructure.

**Congress’s Role to Promote National Wireless Policy**

While today’s hearing is focused on important steps Congress can take around federal siting and federal requirements, Congress has an equal—if not larger—opportunity to incent greater broadband deployment through clarifying its long-standing guidance to state and local governments.
The wireless industry has been pleased to work in collaboration with many state and local governments to facilitate the buildout of wireless infrastructure. Many are good partners, but too often the wireless industry today is encountering policies—long delays, onerous requirements, and excessive fees—that frustrate efforts to deploy new broadband and expand wireless coverage.

Specifically, some communities have adopted moratoria on any new facilities, others refuse to allow wireless installation on street lights, and still other communities effectively foreclose deployment through excessive application and monthly fees (e.g., charging $30,000 per pole per year, or a $15,000 application fee per pole). In too many instances, an installation that takes one to two hours requires one to two years of processing and application procedures. The U.S. will not win the 5G race if those timelines are not significantly reduced across the country.

Thus, in addition to the important focus on federal issues we are discussing today, this Subcommittee should also examine state and local barriers to infrastructure deployment.

Just as it did in 1996, retaining key state and locality roles with respect to public safety, health and welfare, Congress should make clear that the national policy does not allow localities to frustrate wireless deployment. Specifically, Congress established the rapid deployment of wireless infrastructure as a national priority and set nationwide guidelines for how localities should treat siting requests. Under that federal regime and protection, the wireless industry constructed 300,000 wireless facilities and rolled out service nationwide.

The transition to small cells necessitates updating Congress’s guidance to localities. There are many approaches Congress can take to modernize its approach.
Congressman Hudson’s recent resolution to ensure that a funding preference is given to states that support small cell siting reform provides an incentive for states to modernize their siting rules. Similarly, Congress should encourage the FCC’s ongoing review of wired and wireless infrastructure issues to ensure that FCC regulations properly reflect the needs of next-generation networks.

The most meaningful step Congress can take is to once again provide clear direction to—and guardrails around—state and local authorities. There are three general reform areas that would make the greatest difference in promoting broadband investment:

1. **Ensure Cost-Based Fees.** Congress should make clear that localities retain the right to charge for access to government property, provided that such fees are fair and reasonable, competitively and technologically neutral, based on actual costs, and publicly disclosed.

2. **Set Reasonable and Enforceable Timelines.** Congress should establish a “shot clock” on handling siting applications and deeming applications granted if there is no action within that shot clock period. This is the same type of approach that is being proposed for federal lands by Congresswomen Brooks and Matsui. Such legislation could accelerate deployment while still preserving state and local authority over zoning decisions.

3. **Clarify Permitted Conduct.** Congress should clarify that local roadblocks—like moratoria and discriminatory application review guidelines—are forbidden by Congress’s long-standing directive to eliminate rules that “prohibit or have the effect of prohibiting” the provision of communications services.

It is these types of reforms that will make the biggest difference in the deployment of new wireless infrastructure.

**Expanding Broadband’s Reach**

We are proud of wireless investment in rural America and look forward to working with Congress to continue expanding the number of Americans with access to wireless broadband. The wireless industry—both national and smaller regional providers—has made substantial strides in the past decade to expand wireless coverage to reach
more Americans. Specifically, today’s mobile broadband services (4G/LTE) were introduced in the United States in 2010. In less than eight years, 4G wireless services are available to over 99 percent of Americans. This is a remarkable pace of deployment for a new technology in a very short window. And our nation’s wireless footprint continues to grow. In 2016 alone, wireless investment increased coverage by more than 150,000 rural Americans and nearly 50,000 rural road miles.

We share the Committee’s desire to further expand broadband to more Americans, and the important role infrastructure reform can play to do so. Private capital has driven the vast majority of the expanded wireless coverage, and there should be a renewed focus on the steps policymakers can take—like those detailed above—to facilitate wireless providers’ investments in rural America by altering the investment calculus of some rural deployments from uneconomic to viable.

The government also has the ability to expedite deployment in unserved areas through direct funding. The upcoming FCC Mobility Fund auction will be an important step to reach unserved rural America. We also support Vice Chairman Lance for his resolution to direct broadband infrastructure funding towards areas that are currently unserved, and Ranking Member Pallone’s leadership with the LIFT Act to bring more focus on how we as a nation will reach unserved Americans.

Any new federal funding should be competitively and technologically neutral and encourage participation by a wide range of providers, including wireless companies. Greater participation will lead to more effective use of public resources, and deployment of high-speed broadband services to more rural areas. Any new funding should also ensure that reaching areas unserved by wireless is reflected in the program’s objectives. In making funding decisions, better data is key, and rural
broadband is no exception. CTIA continues to work with both national and regional wireless providers to enhance the FCC’s wireless coverage mapping in response to concerns raised by Chairman Blackburn, Congressmen Loebsack and others to ensure policymakers have the right data to determine where scarce public resources can be best used to reach unserved rural areas.

The Wireless Industry Supports Bold and Expedited Congressional Action.

The wireless industry is eager to work with this Subcommittee in a bipartisan manner to advance U.S. innovation and investment in mobile broadband. CTIA strongly supports this Subcommittee’s efforts to help clear the way for 5G and expand wireless coverage. The time for addressing these infrastructure issues is now. America is in a global race to 5G as China, Japan, South Korea, and the EU are hard at work accelerating 5G deployments. With the right policies, the U.S. can win this race, and Americans can continue to benefit from the economic and consumer benefits that flow from leading the world in wireless.

Thank you for the opportunity to testify today.
Mrs. Blackburn. Thank you so much. At this time, Mr. Polka, 5 minutes.

STATEMENT OF MATTHEW M. POLKA

Mr. Polka. Thank you, Chairman. As you know, for the last year, ACA and its members have been discussing with members on both sides of the aisle, the administration, and the FCC, about how to effectively and efficiently close the digital divide. ACA appreciates and supports the subcommittee’s commitment to bring broadband to all Americans.

Over the past decade, because of many hundreds of billions of dollars of private investment by ACA members and others, and the FCC’s reforms to its universal service programs, we are closing in on this goal. Today, more than 100 million homes have access to broadband speeds greater than 100 megabits per second. And only 5.3 million remain with speeds less than 10 megabits. Not only have ACA members been investing billions to upgrade and expand their networks, but also many with their own money have deployed 840 thousand homes that would otherwise be eligible for FCC’s support.

We should recognize and build upon those successes. We know, however, there was much more to do, but from my travels visiting with ACA members across the country, I can tell you that ACA members are committed to serving the Nation’s most challenging corners. They believe we can close the digital divide, and they believe we can keep it shut by following four principles: First, encourage private investment; second, remove barriers to deployment; third, before spending Federal funds, let us take account of successes; fourth, provide broadband subsidies efficiently.

Let me expand. First, let us encourage private investment. Fixed and mobile broadband providers today are spending $75 billion annually to upgrade and expand broadband networks. This will continue for the foreseeable future, and should be encouraged by avoiding governmental action that would hinder these investments. For example, it would not be helpful if government funds were used to overbuild unsubsidized providers or measures were adopted that were not competitively and technologically neutral favoring one class of providers or an industry sector over others. Second, let us remove barriers to deployment. Building high-performance broadband networks is costly, and you will get the most bang out of spending a buck by lowering those costs.

Here are some steps to take: Facilitate access to utility poles by removing impediments, such as fixing the make-ready process; apply the Federal Pole Attachment Law to electric cooperatives, and require cost-based nondiscriminatory rights-of-ways fees, and prohibit charging such fees on a per service basis; third, don’t neglect successes before determining where to spend Federal money and how much is needed. ACA calculates that by removing barriers, the cost of network deployment will be reduced such that 1.2 million homes would become served with fiber infrastructure through private investment alone. Moreover, we believe that the new tax law will enable more than 400,000 unserved homes being served. Finally, the Connect America Programs will reduce the number of homes receiving less than 10 megabits to 2 million by
2020. Fourth, let us provide broadband subsidies efficiently. Through its Connect America Programs, the FCC has given us an effective roadmap for awarding government support more efficiently by targeting support only to unserved areas and awarding support using a reverse option.

With any new money, let us employ these two principles and also limit the amount of Federal support to account for state subsidies unless any additional broadband performance is required.

The four principles that I set forth will maximize consumer welfare, increase economic growth, make communities throughout the country thrive, and it will enable you to bridge the digital divide sooner and with more sustainable results.

ACA and its members stand ready to assist you in every way. Thank you.

[The prepared statement of Mr. Polka follows:]
Over the past decade, because of the many hundreds of billions of dollars of private investment by broadband providers and the FCC’s universal service reforms, we are much closer to bringing broadband service to all Americans. Today, more than 100M homes have access to 100+ Mbps broadband service, and only 5.3 million remain with speeds less than 10 Mbps. We should recognize and build upon these successes. ACA believes that we can offer Americans even higher speed broadband and close the remaining digital divide by following four principles:

First, encourage private investment. Fixed and mobile broadband providers are spending, and will spend, $75B+ annually to upgrade and expand broadband networks. Above all, you should not undermine these investments, such as by permitting government funds to be used to overbuild providers or adopting measures that are not competitively and technology neutral.

Second, remove barriers to deployment. Building high-performance broadband networks is costly, and you will get the most bang, without spending a buck, by taking measures that lower those costs. Here are just some steps you should take –

- Remove impediments for utility pole attachers to overlash, install customer connections, and undertake short-run extensions.
- Ensure pole owners employ a transparent and timely application approval process.
- Provide for joint surveys among pole owners and new and existing attachers.
- Prohibit pole owners from imposing costs unrelated to new attachments when undertaking make-ready, and implement an effective self-help remedy to deal with existing attachers who fail to undertake make-ready.
- Subject electric cooperatives to the federal Pole Attachment law.
- Improve the process for accessing and sharing of conduit.
- Prohibit government agencies from charging right-of-way fees that are discriminatory or non-cost-based, or based on each service provided.

Third, account for additional deployments in unserved areas resulting from the removal of barriers, the new tax law, and existing federal support programs before determining where to spend new funds and how much is needed. ACA calculates that – by removing barriers, providers’ costs to deploy will be reduced such that 1.2M homes would become served with fiber infrastructure through private investment alone; the new tax law will likewise result in more than 400k unserved homes; and the Connect America programs will reduce homes receiving less than 10 Mbps speeds by 2M by 2020. We should account for these gains and those that are to be achieved by Congress and the FCC when determining where to spend new funds and how much is needed.

Fourth, provide broadband subsidies efficiently. Through its Connect America programs, the FCC has shown us how to award government support more efficiently and effectively. Where we need to provide additional support, we should build upon the FCC’s work by: providing subsidies for broadband only in unserved, high cost areas; limiting the amount of federal support to account for subsidies provided by states, unless any additional broadband performance is required; and using reverse auctions to distribute support.
Written Statement of Matthew M. Polka
President and CEO, American Cable Association

Before the House Energy and Commerce Committee
Subcommittee on Communications and Technology

Closing the Digital Divide: Broadband Infrastructure Solutions

January 30, 2018

Chairman Blackburn, Ranking Member Doyle, and Members of the Subcommittee, I am Matthew Polka, President and CEO of the American Cable Association (ACA), and I want to thank you for inviting me to testify today on Closing the Digital Divide: Broadband Infrastructure Solutions.

ACA’s more than 700 broadband and video service provider members, who pass more than 18 million homes in all areas of the country and provide service to approximately 7 million broadband subscribers, have great experience in deploying broadband networks. Over the past five years, ACA members have invested more than $10 billion to upgrade and expand their networks, in both rural areas and as overbuilders bringing competition in urban areas, and they plan to continue to spend billions each year to meet the ever growing demands of their subscribers for real-time, high-speed access to the Internet and other IP services. Many ACA members, including WOW!, Cable One, and WAVE Broadband (RCN), have recently deployed Gigabit broadband throughout their service territories, and many more intend to do so this year and beyond.

ACA members are not just upgrading and expanding their networks in “served” areas, but they are using their capital to bring service to unserved areas. To date, our members have invested private funds to build out to more than 840,000 homes that the Federal Communications Commission (FCC) would consider as high-cost areas and otherwise be eligible for federal universal service support.

1 This investment would be greater if not for the regulatory barriers, including those discussed herein and in ACA’s 2015 study on how rapidly rising video programming fees act as a drag on investment. See American Cable Association, High and Increasing Video Programming Fees Threaten Broadband Deployment, April 2015, available at https://drive.google.com/file/d/EBx0Ud8FEl33VgAa2d/npw5TvWULF/view?usp=sharing.
### ACA: By the Numbers

ACA members are investing in broadband networks, including in small cities and rural areas.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homes passed</td>
<td>18.2M</td>
<td>ACA's more than 750 members pass 18.2M homes with high-speed broadband services. ACA’s members include cable operators as well as municipal providers and rural telephone companies receiving USF support.</td>
</tr>
<tr>
<td>Network capex</td>
<td>$10B+</td>
<td>ACA’s members have spent more than $10B on building out their networks and continue to invest approximately $1B annually.</td>
</tr>
<tr>
<td>Plant miles</td>
<td>300K+</td>
<td>ACA members' networks have more than 300,000 miles of transmission lines, including more than 40,000 fiber miles.</td>
</tr>
<tr>
<td>Small cities and rural areas</td>
<td>42%</td>
<td>Nearly half of ACA’s homes passed are in America's small cities and rural areas.</td>
</tr>
<tr>
<td>Homes not requiring federal subsidies</td>
<td>840K</td>
<td>ACA members offer broadband to 840,000 homes that would otherwise be eligible for government broadband subsidies—saving taxpayers tens of millions of dollars a year.</td>
</tr>
</tbody>
</table>
These investments not only reduced the areas where federal universal support is needed, but also they “freed-up” federal support going into these areas, which could be used to bring broadband to unserved areas that were not receiving any support.

The FCC too has taken significant steps, by reforming its universal service programs, to close the digital divide. As I will detail later in my testimony, these programs have already brought broadband service to many millions of homes in unserved areas, and they are certain to close the gap even further in the near future.

So, in brief, because of the enormous amount of capital investment by providers and the FCC’s reforms to its universal service programs, over the past decade, we have made tremendous progress in bringing wireline broadband service to all Americans. Notwithstanding the size and rural footprint of the country, today 123 million homes have access to speeds greater than 25 Mbps, and within that group, 103 million have speeds greater than 100 Mbps, an increase from 118 million and 90 million homes, respectively, over the last four years. More importantly, 96% of American households, or 128 million homes in total, have access to wireline broadband service with speeds of 10 Mbps or greater and so would not be deemed unserved by the FCC. That is a 40% reduction in unserved households in just the past 4 years.

By 2020, the FCC’s current Connect America programs, which provide about $4 billion of support annually, should reduce these 5.3 million unserved households even further, such that about 3 million homes will be without high-speed wireline broadband service. And, when the FCC launches the Remote Areas Fund, we should get much closer to bringing broadband to everyone.
The Final Five Million Unserved Households

Private investment and government subsidies have reduced the number of unserved households by nearly half since 2012.

**Unserved U.S. Households 2012 vs. 2016**

- **Share of Unserved Households as % of US Households**
  - 2012: 7%
  - 2016: 4%

- **Unserved Households (Under 10/1 Mbps)**
  - 2012: 8.9M
  - 2016: 5.3M

**Trends (1)**

- **Near-Elimination of Unserved Locations:**
  - The number of U.S. households with 10 Mbps or greater wireline broadband service has increased from 123M to 128M.
  - This is largely due to private investment, including from ACA’s members.
  - More than 2 million of the 5.3M remaining unserved households will receive service by 2020 due to the CAF.

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(1) The number of U.S. households with speeds greater than 25 Mbps increased from 118M to 123M. Within that group, the number of U.S. households with speeds greater than 100 Mbps increased from 90M to 103M.

Source: FCC Form 477, US Census, American Community Survey, Experian
This success should be heralded, but more can, and should, be done. And, we should do so based on all that we have learned about what it takes to build in unserved areas and what policies have worked.

Over the past several years, I have traveled around the country meeting with ACA members and have heard from them about their substantial investments to upgrade their existing plants to offer even higher speed services and to edge out into new areas, many of which are unserved. I also have heard how often they are frustrated from undertaking these investments because of barriers imposed by governments and pole owners, and by counterproductive government policies. These providers want you to know that they are ready to meet your broadband objectives and serve the nation's challenging corners, and they ask that you and the FCC take steps through sensible policies that will allow them to achieve these goals.

To that end, I appreciate the chance to speak to the Subcommittee today and share the principles for closing the digital divide that ACA and its members have been discussing with Members on both sides of the aisle, both sides of the Hill, the Administration, and at the FCC. ACA is aligned with the aim of the Subcommittee and its Members to fully close the digital divide, as well as to continue to drive investment in higher-performance broadband networks in all areas of the country so all consumers have the option to subscribe to comparable services. The question is then how to achieve these goals most effectively and efficiently. ACA and its members submit that policymakers should follow these fundamental principles:

**Principal #1: Encourage private investment.** We estimate that overall broadband providers, both fixed and mobile, are spending some $75 billion annually on infrastructure, and there is every indication this level of spending will continue... absent actions by the government that would discourage it. We, therefore, urge you to follow the Hippocratic Oath and do no harm, especially by
permitting any new government support to be used in areas where private investment has already been used to deploy infrastructure. Further, Congress should ensure that any legislation is both competitively and technology neutral, such that it does not favor any providers and any industry-sector. Nothing will undermine our broadband future more than signaling to private investors that their returns on investment are uncertain, or even in jeopardy, or singling out one set of providers or one sector alone for favorable treatment."

Principal #2: Removing barriers to deployment. Building high-performance broadband networks is costly, and ACA members tell us that there are a series of problems they face and actions that you can take, without spending a penny, that will “move the deployment needle.” The chart below, which breaks down the total cost of deploying and operating fiber-to-the-home networks, indicates the most critical costs and should help you target your solutions. For instance, network costs related to pole attachments account for approximately 13% of total cost of ownership. That is a big number, and providers have told us that pole owners charge excessive application and make-ready fees and delay permitting attachments for far too long, and that the FCC’s enforcement process is ineffective. Conduit and duct installation fees and construction costs are also substantial, potentially several times greater than pole access fees, and there are numerous factors that make conduit and duct access unreasonable, including lack of information about location and availability, and fees for installation and access.

ACA notes that smaller local telephone companies have demonstrated, for the most part, competence in providing telecommunications service in high-cost, rural areas. They operate in fewer and much smaller service territories and also tend to be less diversified than the major telephone providers. Any action by Congress of the FCC to implement these principles should account for their value.
Building High-Performance Broadband is Costly

Policymakers can make a difference by focusing on activities that “move the cost needle.”

Breakdown of Total Cost of Ownership of Fiber-to-the-Home Networks

- **Opex 30%**
  - Salaries (14.7%)
  - Pole and conduit rent (2.1%)
  - Plant maintenance (1.7%)
  - Electricity (0.8%)
  - Other operating expenses (8.5%)
- **Labor Capex 54%**
  - Material (7.7%)
  - Cost to connect (11.9%)
  - Duct installation (3.5%)
- **Hardware Capex 16%**
  - Fiber installation (10.5%)

**Notes:**
1. Design includes route surveys, engineering costs, and additional studies required by authorities.
2. Other operating expenses include administrative, cognitive, and personnel staff costs.
3. Labor costs include time and labor costs.
4. Design includes time and labor costs.

Source: Cartesian, NBN (Australia), DTI
Accordingly, ACA urges you to make sure your legislative efforts include bills that remove barriers related to accessing poles, ducts/conduits, and rights-of-way by adopting the following measures:

- First, facilitate access to poles by removing impediments for existing attachers to overlash, install customer connections, and undertake short-run extensions.

- Second, reduce potential disputes between attachers and pole owners by creating a more transparent and timely application process, where requesting attachers would be more certain that they are supplying information pole owners need to begin a survey, and that their applications would be deemed complete in a reasonable timeframe.

- Third, for standard pole attachments, enable closer coordination among pole owners, existing attachers, and new attachers earlier in the process, including by providing for joint surveys where new and existing attachers would have the right to accompany a pole owner’s survey of the proposed attachments.

- Fourth, lower the cost of and increase the transparency surrounding make-ready by: prohibiting pole owners from imposing costs unrelated to new attachments when undertaking make-ready, including unnecessary pole engineering design and loading analyses; requiring pole owners to itemize make-ready costs on a per-pole basis; and implementing an effective self-help remedy to deal with existing attachers who fail to undertake make-ready.

- Fifth, subject electric cooperatives to the federal Pole Attachment law, which would ensure their attachment rates are reasonable and that providers that compete with them have a level playing field.

- Sixth, improve the process for accessing and sharing of conduit.
Seventh, governments should charge right-of-way fees on a non-discriminatory basis, such that no provider or technology is favored, and all fees should be related to the actual costs governments incur for providing access to that right-of-way.

Eighth, because any use on rights-of-way is linked to network facilities and not the provision of services over those facilities, prohibit governments from charging right-of-way fees on a per-service basis.

Principal #3: Account for additional deployments in unserved areas resulting from the removal of barriers, the new tax law, and existing federal support programs before determining where to spend new funds and how much is needed.

ACA has calculated that by removing the barriers described above, the cost of network deployment will be lowered sufficiently such that 1.2 million unserved homes would become suitable for broadband providers to spend private money to deploy cable or fiber-to-the-home broadband services — all without spending additional government funds. Removal of these barriers also will encourage providers using other technologies, including fixed wireless and DSL, to upgrade their networks and expand them into additional unserved areas.

In addition, because network investment will be propelled by the just-enacted tax statute, it is a key factor for which you need to account. ACA members have told us that because the new law permits them to “expense” their network investments immediately and cuts the corporate tax rate to 21%, they have substantially greater incentives and ability to increase their capital spending significantly in the coming years. We estimate that the new tax law will turn more than 400,000 homes in unserved areas into economically viable areas ripe for private investors to build high-speed

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3 ACA estimates that such deployments will create almost 20,000 new jobs.
broadband or fiber-to-the-home services. Additional areas would also become suitable for private investors using other technologies.

We also should recognize that, at the federal level, we are now providing more than $4 billion annually to bring broadband to unserved and high-cost areas. States also are implementing their own support programs. By our calculations, the current federal Connect America programs alone, by 2020, should reduce the number of "unserved" homes by 2 million, and even more by later in the next decade, and state efforts will reduce them even further. In sum, the government is already well on its way to closing the digital divide, and it should take account of the gains that can be achieved by removing barriers to deployment, the recent tax cut, and existing support programs before determining how much and where to spend additional funds to bridge the digital divide.
FCC’s CAF Programs Will Deliver High-Speed Broadband to Many Unserved Areas

CAF Phase II provides ~$1.5B/year to price cap incumbent carriers to deliver broadband in unserved areas; CAF Phase II Reverse Auction and the Remote Areas Fund, when implemented, will provide ~$280M/year in additional unserved price cap carrier areas and in other areas, many of which are very high-cost.

<table>
<thead>
<tr>
<th>Minimum Performance Required</th>
<th>Timeline and Funding</th>
<th>Total Locations Served</th>
<th>Source: FCC, cartesian</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAF Phase I Round 1</td>
<td>4/1 or greater</td>
<td>$114M (one-time)</td>
<td></td>
</tr>
<tr>
<td>CAF Phase I Round 2</td>
<td>4/1 or greater</td>
<td>$324M (one-time)</td>
<td></td>
</tr>
<tr>
<td>CAF Phase II</td>
<td>30/1 or greater</td>
<td>$9.00 ($1.5B/year for 6 years)</td>
<td></td>
</tr>
<tr>
<td>CAF Phase II Reverse Auction</td>
<td>10/1 or greater, up to 1 Gbps</td>
<td>$1.8B ($180M/year for 10 years)</td>
<td></td>
</tr>
<tr>
<td>Remote Areas Fund (RAF)</td>
<td>Best efforts</td>
<td>$560M ($530M/year for 6 years)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>4.4M to 6.1M</td>
<td></td>
</tr>
</tbody>
</table>

Total Funding: ~$12 billion

USF, which totals about $10B annually for all programs, is funded through an assessment of about 17% on the amount customers' pay for interstate telecommunications services.
Principal #4: Provide broadband subsidies efficiently. The FCC has essentially provided the roadmap for this approach with the Connect America programs it initiated in its major reform in 2011. The FCC has reshaped these programs — and continues to refine its policies — so that its limited support is awarded much more efficiently. It has sought to target support only to unserved areas, and it is about to begin awarding support using a reverse auction. ACA believes you should adhere to the following guidelines with regard to distributing any new money to close the remaining digital divide.

- **Provide subsidies for broadband only in unserved, high-cost areas.** ACA supports the FCC’s current definition providing that an area is unserved if no provider offers 10/1 Mbps broadband service. While ACA understands the urge to “bid-up” these speeds, ACA cautions that we should not divert our attention from bringing service to those areas currently deemed unserved. In addition, any change in the definition of unserved must not result in any overbuilding of providers that are investing private capital. That would be especially counterproductive. Finally, as the National Broadband Plan made clear, wireline deployments become much more expensive as the speed of service increases, because more copper plant needs to be replaced with fiber. Accordingly, assuming we do not have unlimited funds, as you increase the speed threshold for determining whether an area is unserved, you lower the number of unserved locations that will receive service.

- **Limit the amount of federal support for broadband buildout in an area to account for subsidies provided by states, unless any additional broadband performance is required.** It would be inefficient and a waste of scarce federal support to enable recipients of such support to also receive state funding if they are only required to meet the federal broadband public interest requirements. This is because the federal program already
contemplates these requirements would be met. To receive funding from state program on top of federal support, a recipient should do more, such as provide higher speeds or meet faster deployment deadlines. For instance, the FCC and New York State developed (and ACA supported) an approach where providers in that state could receive support from both the FCC’s Connect America program and New York State’s Empire State Development program to deploy broadband networks that are faster than those available under the FCC's Connect America program alone. 4 Such an approach is a potentially valuable model for propelling higher performance networks sooner in unserved areas. But, absent such enhanced obligations, a recipient of federal support should not receive state support to provide the same service.

- Use reverse auctions to distribute support to maximize cost-efficiency. Prior to 2011, the FCC provided high-cost universal support only to incumbent telephone companies and determined the proper level of support by using a complex array of factors as part of a cost model that were out of sync with how modern networks were built and operated. In its 2011 USF/ICC Transformation Order, the FCC recognized that bringing broadband to unserved areas would be very expensive and, to maximize use of its limited funding, it needed to award support much more efficiently. Conservative estimates suggest that using reverse auctions over cost models can lower the amount of subsidy needed to serve an area by 20%. 5 The FCC therefore decided to begin using reverse auctions that are open.

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to all providers, irrespective of technology, to award support. The first such auction is scheduled to take place later this year. ACA urges that any new funding be given out using a reverse auction approach (as adjusted for the removal of barriers to deployment).

ACA has established its principles by learning from the experiences and expertise of its members and by seeing over the past decades policies that have – and have not – worked. From what we have seen of the measures introduced by Members of the Subcommittee, you too understand what it takes to bring broadband to all Americans. We support the resolutions introduced by Chairman Latta to ensure that all federal policy is technology neutral, Vice Chairman Lance to direct federal support to unserved areas, and Representative Bilirakis to ensure that federal, state, and local tax, permitting, and other requirements are coordinated. And we applaud Chairman Blackburn for seeking to reward private investment, remove barriers to deployments, and bridge the digital divide.

At the end of the day, the principles in these measures will maximize consumer welfare, increase economic growth, and make communities throughout the country thrive. As for additional legislation, we urge the Subcommittee to examine the approach we have just set forth. We believe it will enable you to bridge the digital divide sooner and with more sustainable results.

In closing, I want to commend the Chairman, Ranking Members, and other Members of the Subcommittee for their intense and well-considered focus on accelerating high-performance broadband deployment to all Americans. ACA and its members stand ready to assist you in this endeavor.

countries, the cost-savings may be even greater. The FCC has noted that Rural Broadband Experiment bids produced discounts off model-based subsidies of greater than 50%.
Mrs. BLACKBURN. Ms. Bloomfield, you are recognized for 5 min-
utes.

STATEMENT OF SHIRLEY BLOOMFIELD

Ms. BLOOMFIELD. Thank you, Chairman Blackburn, Ranking
Member Doyle, members of this committee, I can't tell you how ex-
cited we are that you are actually talking about this incredibly im-
portant topic of broadband and how we ensure all Americans actu-
ally have access. I am Shirley Bloomfield. I am the CEO of
NTCA—The Rural Broadband Association, and we represent ap-
proximately 850 small businesses who are providing broadband
across this country in 46 states.

For decades, these small community-based telecommunications
providers like my membership have really led the charge in terms
of connecting rural Americans with the rest of the world by deploy-
ing advanced networks that respond to the need and the demand
for cutting edge, innovative technology. These companies serve
areas where the average density is about seven customers per
square mile, and we actually have a rough density, as Chairman
Walden had referenced that, but that is essentially in the entire
average population density of the State of Montana.

To emphasize the work that these hometown providers have
done, a recent survey found that 87 percent of NTCA members' custom-
ers can actually purchase broadband at 10 megabits or high-
er, and 67 percent can access speeds above 25 megs. But the job
is simply far from done. With the statistics I noted, they are good
news, but unfortunately, they also still tell the story of a lot of
rural consumers that need access. And the story is still bleaker for
those who are not served by NTCA member companies.

Finally, it is not as if the job is done once the network is actually
built. There is a lot of ongoing work to ensure that quality service
is still available in very rural areas. So the question remains, how
do we overcome these challenges of deploying and sustaining rural
broadband? In the first instance, you actually need a business case
to even consider deploying rural broadband. Questions relating to
permitting and regulation are very important, of course, but if you
can't afford to build or sustain a network, these questions never
ever even come into play. The economics of broadband are very difficult,
if not impossible, in many rural markets. The rates that rural con-
sumers actually pay is rarely sufficient to cover the actual cost of
operating in these rural areas, much less the large capital expendi-
tures required to deploy the broadband.

I wish I had an easier answer for you but, frankly, the infra-
structure is expensive and you simply have fewer consumers
spread across to actually cover the costs. And that is why the ongo-
ing support of the High Cost Universal Fund Program overseen by
the FCC is so critical in making a business case for rural
broadband.

A bipartisan letter last year, led by many on this subcommittee,
was signed by 101 Members of Congress in the House encouraging
the FCC to ensure sufficient resources are available to enable the
USF mechanisms to work as they are designed. This incredible
show of support by Congress was greatly appreciated by NTCA and
our members, and reaffirms the fact that the USF high-cost program is the foundation for rural broadband in America.

If the foundation is strong, we can then focus on the next most significant challenge, and that is the barriers to deployment itself. And this is where the questions and the legislation presented in today's hearing become so very important, especially with the potential infrastructure package hopefully on the horizon, and Chairman Blackburn, I had the privilege of being with you in Tennessee when the President signed the memorandum and executive order on broadband. It is encouraging that the members of this committee are considering measures that are aimed at some of the very unique challenges presented by rural broadband.

Many of your initiatives also mirror some of the work that was done on some of the FCC BDAC working groups that I had the privilege to serving on, addressing permitting reform, disaster relief, broadband mapping, and supporting innovation on a technology-neutral basis must be the central part of a coordinated and comprehensive effort to help address challenges across the broadband landscape.

Smaller providers, like those in NTCA's membership, have neither the staff nor the resources to navigate complex Federal agency structures for companies and cooperatives who have an average of about 25 employees per system. That time and money that is spent on navigating the effort relates to money and time that is not spent on deploying broadband.

This committee's desire to obtain better mapping data is also much needed and greatly appreciated. We need accurate, granular data. We need transparency on availability to ensure the government resources are used to support broadband build-outs that are deployed as efficiently as possible. And we also welcome the subcommittee's consideration of innovative ideas to support and enable broadband. Today's small rural broadband providers are using all communication technologies available to them to provide world class service to their members and to their customers.

Just as we transition from telephone-focused to broadband-focused companies, we need flexibility and access to additional support and resources to deploy new technologies and address the remaining challenges.

In closing, small rural broadband providers, like those in my membership, have made great strides in reducing the digital divide in rural America, but the job is far from done. With millions of rural Americans still without access to robust, high speed broadband and millions more served only through the help of the FCC's Universal Service Programs, we must continue to work diligently to ensure that no child is left behind without internet access for homework, no rural area is left behind without access to tele-health capabilities, no farmer is left without precision agriculture tools, and no main street business is prevented from participating in a global economy.

On behalf of NTCA—The Rural Broadband Association, your leadership and your commitment to this issue in identifying these challenges and looking for creative solutions is so greatly appreciated.
I appreciate the invitation to be here with you, and I am looking forward to engaging with all of you further.

[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

Closing the Digital Divide: Broadband Infrastructure Solutions
Washington, DC

January 30, 2018
INTRODUCTION AND BACKGROUND

Chairman Blackburn, Ranking Member Doyle, and members of the subcommittee, thank you for this opportunity to testify today to discuss 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, hometown 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 more than 35 percent of the U.S. landmass — where the average density is about seven customers per square mile, or roughly the average population 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 are working to help 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.

Indeed, NTCA members have led the charge in deploying broadband in rural America and closing the digital divide for rural areas fortunate enough to be served by these hometown providers. Despite the many challenges, a survey of NTCA members conducted in 2017 found that 41 percent of respondents’ customers are served via fiber-to-the-home, up 20 percent from 2013. Thirty-six percent of customers are served via copper loops, 12 percent cable modem, 9 percent fiber-to-the-node, 1.1 percent fixed wireless, and 0.2 percent satellite.1 Due in no small part to increased fiber deployment, rural customers have access to faster broadband speeds. In fact, the survey concluded that 87 percent of NTCA members’ customers can purchase broadband at speeds of 10 Mbps or higher, and 67 percent can access speeds above 25 Mbps. These statistics confirm what we already know, but occasionally overlook — that through the work of small, local telcos we are making strides year-over-year to reduce the digital divide, despite an uncertain regulatory environment.

But there is more to do – the job is far from done. The statistics noted above are good news, but they also tell a story of many rural consumers and communities still left behind. Thirteen percent of consumers served by NTCA members still cannot get even 10 Mbps broadband, while 33 percent are unable to obtain 25 Mbps broadband – a speed considered average for urban Americans today. And the story is even worse in areas that are not as fortunate to be served by cooperatives and other small hometown-based telecom companies like those in NTCA’s membership; in other rural communities, we know that many more consumers, businesses, schools, and medical facilities lack access to even basic levels of broadband.

And, finally, even where broadband is available, sustaining it and upgrading it to keep pace with today’s economy and user demands is a challenge unto itself; the job is not done when networks are deployed, because consumers’ use of broadband depends upon reliable and affordable services that will stay high-quality and keep pace with advances in technology and user needs. Thus, 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 also to sustain robust and affordable rural broadband where it is available today.

So how do we overcome these significant challenges of both deploying and sustaining rural broadband infrastructure? The first step is to clearly identify those challenges and think carefully and creatively about measures to address them.

In the first instance, the economics of rural broadband are difficult, if not impossible, in many rural markets. The rates that rural consumers pay are rarely sufficient to cover even the costs of operating in rural areas, much less the enormous capital expenditure required in the first instance to deploy reliable, high-speed broadband in rural America. While obtaining permits to build new infrastructure and navigating complex bureaucratic application processes can be difficult for many of the small businesses in NTCA’s membership, the single biggest challenge in rural America is simply making the business case to build any broadband at all.

Without a reasonable business plan, providers are hard-pressed to justify borrowing funds or using one’s own capital to build, and then even harder-pressed to sustain networks in areas where densities are low, distances are great, and terrain and topography complicate operations. Put another way, permitting barriers are no barrier at all if one cannot justify building the network in the first place. Ongoing support from the High-Cost Universal Service Fund (USF) program overseen by the Federal Communications Commission (FCC) has therefore been essential to making the business case for and then sustaining rural broadband. The program allows providers to keep rates affordable for consumers and to help justify financing from the few lenders that tend to serve rural Internet service providers – the Department of Agriculture’s Rural Utilities Service (RUS), CoBank, the Rural Telephone Finance Cooperative (RTFC), and some community banks.
After the initial business case can be made for rural broadband, we come to the next significant challenge – the barriers to deployment itself. This is where the questions and legislation presented in today’s hearing then become so important, helping to reduce the costs and time associated with deployment and allowing providers to get back to the business of building broadband networks in rural America. I will now turn to a discussion of the ideas being reviewed in today’s hearing, and describe how action in many of these areas would be welcomed to stimulate and accelerate deployment.

CURRENT EFFORTS TO HELP OVERCOME A DIGITAL DIVIDE

Especially with the potential for an infrastructure package on the horizon, it is encouraging that members of this subcommittee are considering different measures aimed at tackling the many unique challenges presented by rural broadband – introducing bills to streamline regulations for providers and thinking innovatively about how to address the challenges of building and sustaining both middle mile and last mile networks. As an overarching matter, these ideas are welcome, much-needed additions to a comprehensive conversation on promoting broadband buildout across rural America. From my work on behalf of and interaction with our members, I can tell you that addressing permitting reform, disaster relief, broadband mapping, and supporting innovation – concepts raised by the bills that are the subject of today’s hearing – is an essential part of a coordinated and comprehensive effort to help address challenges across the broadband landscape.

Permitting Reform

Smaller providers like those in NTCA’s membership have neither the staff nor the resources to navigate complex federal agency structures in search of permissions to build broadband; for companies and cooperatives with an average of approximately 25 employees, time and money spent on such efforts translates to time and money not spent building broadband. At the same time, in serving many of the most remote parts of the United States, our members have deep experience with the Bureau of Land Management (BLM), U.S. Forest Service, National Park Service, and many other land-owning and property-managing agencies across the federal government. Especially when crossing federal lands or railroad rights-of-way in rural America, small, rural providers must address environmental and historical permitting concerns or contractual obligations that can delay projects and increase their already high costs.

These issues are very real and affect broadband network operators and the consumers they seek to serve. To provide just a few examples that we have heard about within the past year, one BLM state office adopted a unique bonding policy and application process that appeared to equate deployment of telecom facilities with installation of pipelines transporting hazardous substances, dramatically increasing the application burdens and potential costs. Meanwhile, in South Dakota, a small, rural
provider’s multimillion-dollar fiber deployment requiring U.S. Forest Service approval encountered permitting holdups delaying completion more than a year.

For these reasons, NTCA and its members have consistently urged that differences in agency policies and procedures should be the exception rather than the rule, applying only where needed to implement a unique statutory directive to the agency in question. A lack of coordination and standardization in environmental and historical application and approval processes across federal agencies increases the cost and further complicates and delays the deployment of broadband infrastructure – especially for small providers.

Thankfully, we are seeing increasing levels of attention paid to such concerns. Several NTCA members joined me in working on the FCC’s Broadband Deployment Advisory Committee’s (BDAC) Streamlining Federal Siting Working Group, and we strongly supported the report and recommendations of that group, including suggestions to:

- Standardize and publish fee schedules, and utilize revenue in a way that promotes expediting federal siting processes.
- Harmonize permitting processes across agencies to the extent feasible and ensure the process is uniformly applied across regional and state offices.
- Recognize and accept existing completed studies in previously disturbed areas.
- Harmonize environmental assessments across federal landholding or managing agencies, further streamline National Environmental Protection Act and National Historic Preservation Act exclusions, and eliminate duplicative environmental studies.
- Make current environmental and historic review streamlining mechanisms mandatory for all agencies.
- There should be a single, easily accessible online-tracking mechanism at each federal agency for the permitting process. All agencies should regularly report on permit status and the number of permitting applications they have processed.
- A common application form should accommodate changes to existing installations and applicable leases and easements. Agencies should accommodate and incorporate new broadband infrastructure technologies into their review processes.

It is encouraging to see many of these same ideas reflected in the bills being considered by this subcommittee, indicating that “all roads” seem to be leading to similar destinations in terms of what might be done to improve the processes and policies for permitting on federal lands and properties. NTCA is eager to see such recommendations become part of a comprehensive and coordinated national strategy that tackles both the economics of rural broadband deployment in the first instance and then the barriers that hinder such deployment once the business case is made.
Finally, as Congress moves forward on reform, it is important to note that any changes and coordination with respect to permitting should be made on a “technology neutral” basis. While some current federal permitting processes and forms were developed initially to accommodate wireless infrastructure and attachments, in today’s converging world where data demands are increasing at exponential rates and “densification” of wireless networks is a national priority, all wireless systems will need closer and more robust connections to wireline networks. For example, an engineering study last year indicated that successful 5G wireless deployment will depend upon substantial future-proof backhaul capability for small cells placed within just several hundred feet of each other; this conclusion has been independently validated by others interested in promoting 5G who have noted the need for “densification” (i.e., increased small cell deployment backed by fiber penetration) of wireless networks. It is therefore imperative that any reform of permitting applications and processes expressly accommodate both wired and wireless technologies.

**Broadband Mapping**

This committee’s attention to mapping and the desire to obtain better data is much-needed and greatly appreciated by NTCA and its members. We need accurate, granular data on availability to ensure that government efforts to support broadband target resources as efficiently as possible. Such data would help ensure both that support and programs are not withdrawn when they are still needed in an area, while also avoiding the prospect of duplicative infrastructure deployment to the very same locations being promoted by multiple different federal programs.

Under the FCC’s High-Cost USF program, our members are now required to geocode individual locations where new broadband is installed (and, in some cases, for prior deployments too). Such measures – particularly the geocoding of new installations and upgrades going forward – can bring us closer to identifying where broadband exists with much greater precision, which would then allow us to target support and other efforts to promote broadband deployment where needed most. In the end, however, it will also be important to reconcile and coordinate data-gathering and mapping efforts among agencies to avoid facing duplicative reporting requirements and the prospect of generating inconsistent data due to differing measures among multiple reports at different agencies. In short, there is great need for a single, authoritative source that can provide accurate data at a granular level and on a consistent basis to help drive better informed decision-making.

**Supporting Innovation**

NTCA welcomes the subcommittee’s consideration of ideas as well on supporting innovation in enabling rural broadband. Today, small, rural broadband providers are using all communications...
technologies available to them to provide world-class services to their members and customers. Just as we transitioned from telephone-focused to broadband-focused companies, we will need flexibility and access to additional support and resources such as spectrum and robust middle mile networks to develop and deploy new technologies and address the challenges remaining.

OTHER MUCH-NEEDED NEXT STEPS

As I mentioned earlier in this testimony, although obtaining permits to build can be difficult for small businesses like those in NTCA’s membership, the most fundamental challenge to rural broadband is simply making the business case to build broadband at all—being able to justify borrowing funds or using one’s own capital to build and then sustain networks in areas where densities are low, distances are great, and terrain and topography complicate operations. With millions of rural Americans still lacking access to robust, high-speed broadband, and millions more only receiving affordable access now through the help of the FCC’s USF programs, we must continue working diligently to ensure no child is left without Internet access for homework, no rural area is left without life-saving access to telehealth capabilities, and no Main Street business is prevented from utilizing e-commerce to compete in a global economy. To realize these goals, it is essential that Congress not only look at new ideas for building out rural broadband, but also focus on ways to leverage those programs that have already been most successful in doing so.

Recognizing the foundational nature of the challenging business case for rural broadband, policymakers throughout the federal government, including many of the leaders on this subcommittee, have expressed tremendous interest in pursuing broadband initiatives as part of a broader national infrastructure initiative. In fact, just last week, House Rural Broadband Caucus Co-Chairs Cramer, Welch, Latta, Loebssack, Kinzinger, and Pocan sent a bipartisan letter to President Trump requesting that a broadband-specific funding mechanism be included in any such package. An infrastructure bill represents a rare opportunity to make great headway on rural broadband deployment, and we hope that the promise of broadband is not lost among the many other compelling infrastructure priorities also in need of attention (and funding). We greatly appreciate the work of this subcommittee and the congressional rural broadband caucuses more generally in keeping broadband “top of mind,” and in leaving no stone unturned in considering all the ways in which conditions can be improved to enable broadband deployment that will benefit rural Americans now and into the future.

Beyond such new initiatives, however, few steps could be more important for policymakers to take than to ensure sufficient, sustainable funding for the High-Cost USF Program, which has served as the foundation for the most successful builds to date of broadband across rural America. While often lost in the shuffle of new initiatives, this program is the primary tool to ensure consumers and businesses in rural America can purchase communications services that are reasonably comparable to what urban Americans receive at rates reasonably comparable to what urban consumers pay. The USF program is therefore critical and foundational to making the business case for rural broadband
investment. Moreover, USF is perhaps the best, most successful, proven example of a public-private partnership that exists in the broadband space, having helped to justify private network investments that can total tens of billions of dollars per year when measured as gross plant in service.

But the USF program has encountered difficulties in recent years even as policymakers cast about for new ways to overcome rural broadband challenges. Enabling the business case for deployment of networks and delivery of broadband across rural America is a big job to say the least, and yet the High-Cost USF program has been confined under a flat budget (without even an inflationary adjustment) for years. This is true even as small, rural carriers like those in NTCA’s membership have sought to deliver more robust networks that will scale to meet the anticipated enormous consumer demands for bandwidth in the future and far outlast the timeframes of the loans taken out to build them. A strict budget control mechanism adopted in 2016 by the FCC—based upon 2010 support levels and applied only to smaller rural carriers—has only exacerbated this problem.

While the FCC took steps to provide some additional funding last year within the fixed overall USF budget for a subset of small carriers that elected a certain kind of High-Cost USF support, even that funding remained insufficient to achieve the goals of the very model the FCC designed for it. As a result, tens of thousands of rural consumers will see lower speeds or no broadband at all—precisely what the reforms were intended to alleviate. And the concerns are just as significant, if not greater, for rural areas served by small carrier recipients of High-Cost USF that could not or did not elect this model-based support. These small, rural telecom operators have had their support slashed by more than 12 percent on average, denying recovery of actual costs for private broadband network investments that they have already made. Even worse, this specific USF budget control has been growing unpredictably, undermining access to capital and the business case for sizeable long-term infrastructure investments in rural America. In short, not only is the insufficient budget undermining recovery of past investments and making rural consumer broadband prices higher, but it is also deterring future investment by hurting the business case for broadband.

These concerns have been confirmed both in the individual stories of NTCA members and in a survey we conducted last summer to determine how insufficient funding and unpredictable budget cuts were undermining rural broadband availability and affordability. Individual examples of reduced investment or other customer impacts we heard about in 2017 included: a cooperative in the Southeast that put on hold a new multi-million dollar loan to build 1,000 miles of high-speed broadband infrastructure to more than 7,000 rural consumers due to the USF cuts; another small locally-owned provider in the Southeast that suspended plans to upgrade two rural communities and instead simply maintained older network plant for fear of support reductions; a Midwestern small operator with only 12 employees that had recently finished a fiber project but then declined to fill open jobs due to the need to conserve funds in the face of USF budget cuts; and another small Midwestern carrier that continues to charge high standalone broadband prices because the USF budget effectively wipes out support for such connections.
Such stories are consistent with NTCA's summer 2017 survey, where 183 small business member companies reported facing annual USF support reductions of more than $500,000 on average, with a corresponding average decline in planned network investment of nearly $950,000 that translated to more than 850 customers on average being denied near-term access to upgraded broadband services. This support reduction also led to standalone broadband prices for rural consumers $50 higher per month than they would have been for urban consumers.

Fortunately, Congress and members of this subcommittee recognize the problems this hard cap has placed on rural providers. Last year, a bipartisan letter led by Congressman Cramer and co-led by Reps. Loebsack, Latta, Welch, Kinzinger, and Pocan, was signed by 101 members of the House of Representatives encouraging the FCC to ensure “sufficient resources are available to enable the USF mechanisms to work as designed.” (A similar letter was sent by several dozen Senators.) The FCC has taken notice of these concerns, and just this month Chairman Ajit Pai announced the potential for more than $500 million to be injected into the High-Cost USF program. The Chairman's proposal is currently circulating among the commissioners at the FCC, and also includes a notice that poses crucial questions on what the High-Cost USF budget should be going forward and how to ensure the program can consistently support and provide certainty for robust network deployment over time.

NTCA applauds this announcement, and we are grateful for the leadership of members of this subcommittee and many others in Congress for helping to elevate this concern. We hope that more sufficient support through the USF program — together with the prospect of a comprehensive infrastructure strategy that includes ideas like many of those before this subcommittee today and additional funding resources — will stimulate investment and eliminate deployment barriers. Achieving this goal through such a coordinated, comprehensive approach is the key for success in the years to come, and will help us deploy and sustain broadband throughout rural America.

CONCLUSION

Due in part to the leadership of this 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. Many of the ideas being discussed here today would represent important steps forward in promoting broadband deployment and addressing challenges we face for the broadband of the future — and together with the High-Cost USF program, and in coordination with a comprehensive infrastructure package that recognizes the importance of broadband to rural communities — we believe we can make great progress on tackling our nation’s broadband challenges.

On behalf of NTCA—The Rural Broadband Association, your commitment to identifying and solving these challenges is greatly appreciated. Thank you for inviting me to be with you today and I look forward to your questions.
STATEMENT OF SCOTT SLESINGER

Mr. SLESINGER. Thank you, Chairman Blackburn, and Mr. Doyle. Thank you for the opportunity to testify today. My name is Scott Slesinger. I am the legislative director of the Natural Resources Defense Council. I will concentrate my oral remarks on the impact of Federal environmental reviews on new infrastructures, including broadband.

The poor state of our infrastructure is not because of Federal environmental reviews or permitting. Our problem is cash. The solution is a political will to appropriate the needed dollars.

Numerous studies from GAO and CRS show that it is not Federal rules that are causing delays. The number one problem is lack of funding, followed by state and local laws, citizen opposition to projects, and zoning restrictions. Mr. Chairman, broadband deployment is not delayed by environmental impact statements. In fact, no broadband project was ever required to do one by the FCC. Drinking water projects suffer from a lack of financing, not environmental reviews. Scapegoating NEPA may be a cheap applause line, but we cannot streamline our way to universal broadband access, new tunnels under the Hudson, or bridges over the Ohio River, or new sewer systems.

I would like the committee to appreciate why NEPA is so important. In many cases, NEPA gives your constituents their only opportunity to voice concerns about a Federal project's impact on their community. Because informed public engagement often produces ideas, information, and solutions that the government might otherwise overlook, NEPA leads to better outcomes for everyone. The NEPA processes save money, time, lives, historic sites, endangered species, and public lands, while encouraging compromise and resulting in better projects with more public support. Most recommendations to cripple the process try to limit public notice and comments and are undemocratic.

The first time a rancher learns of a pipeline going through his property shouldn't be when an attorney shows up at his door with an offer to purchase under threat of taking the property by eminent domain. Because many congressional committees have tried to assert jurisdiction over NEPA, there has been numerous and contradictory changes in the NEPA process made by Congress in 2005, 2012, and 2015.

Various provisions have shortened public comment periods, changed the statute of limitations to four different time periods, limited access to courts, and set up arbitrary deadlines for permit approvals.

DOT can now find other agencies that miss deadlines, a provision that makes as much sense as debtor's prison. The FAST Act, based in large part by the Rapid Act promoted by Mr. Shimkus, was passed in 2015, made dramatic changes in the process. The law created a new interagency administrative apparatus called the Federal Infrastructure Permitting Improvement Steering Council, which is largely controlled by OMB, to set deadlines, push through
resolution of interagency disputes, and allocate funds and personal resources to support the overall decisionmaking process.

President Trump's first infrastructure permitting executive order—as the chief sponsor, Senator Portman wrote in a letter to the President—contradicted authorities and responsibilities already in FAST-41 to the consternation of project sponsors that were already participating in the permitting board's existing process, and this slowed projects. Even the business roundtable has said that we should be looking at existing law, not layer on new laws to the NEPA process.

Despite enactment of these laws, the Congress has many bills go to the House floor that would further amend the NEPA process without regard for their impact on process changes already made. Rather than simplifying current processes, these bills would create new conflicts, sow confusion and delay project reviews. The recent draft infrastructure proposal from the White House should not be taken seriously. The leaked provisions would repeal critical clean air, clean water, and endangered species protections. It would also set up a process guaranteed to neuter public input into Federal actions, such as giving agency heads free rein to virtually exempt any project from NEPA free from court challenge.

To fix our infrastructure, we don’t need to give the Interior Secretary carte blanche to build pipelines through every National Park. We do need NEPA to help build a modern infrastructure system that is resilient, energy-efficient, and takes into account the impacts of a changing climate in the needs of the 21st century. We can do this smarter and better by using, not crippling, the environmental review process.

Thank you for the opportunity to testify, NRDC looks forward to working with the committee on bold and effective solutions to our Nation’s infrastructure challenges. Thank you.

[The prepared statement of Mr. Slesinger follows:]
TESTIMONY BY
SCOTT SLESINGER
LEGISLATIVE DIRECTOR
OF THE
NATURAL RESOURCES DEFENSE COUNCIL

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

January 30, 2018
Thank you for the opportunity to testify today. My name is Scott Slesinger, and I am the Legislative Director for the Natural Resources Defense Council (NRDC). NRDC is a nonprofit organization of scientists, lawyers, and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 3 million members and online activists nationwide, served from our offices in New York, Washington, Los Angeles, San Francisco, Chicago, and Beijing. I appreciate the opportunity to testify and will concentrate my remarks on the LIFT Act, H.R. 2479 and the supposed barriers to new infrastructure environmental reviews.

This Congress has a very important responsibility to address the failing infrastructure that has made America less globally competitive and is undermining our quality of life. Our airports, our transportation system, our sewer and drinking water systems have been systematically underfunded since 1993 when the gas tax was last raised. Inflation has eroded the Transportation Trust Fund by over 40 percent. The funding for sewers and drinking water systems have suffered similar erosion. Any world traveler, and in fact, President Trump himself, has noted that the airports and roads of our country now suffer in comparison to other developed and even some developing countries. Lack of access to broadband limits economic vitality and limits educational opportunities in many underserved communities.

Every conversation on Capitol Hill about solving our infrastructure crisis begins with earnest statements that "all options are on the table" before immediately rescinding the solution.

The poor state of our infrastructure is not because of environmental reviews or permitting. Our problem is cash. The solution is the political will to appropriate the needed dollars. Environmental reviews and permitting are scapegoats.

A recent hearing of the Transportation and Infrastructure Committee on Army Corps of Engineer projects highlighted this point. The Corps has over $60 billion in approved, authorized projects—virtually all with completed environmental reviews. Some members
and witnesses argued for less environmental reviews as a solution. One of the
witnesses, Nicole Carter of Congressional Research Service, was asked if NEPA is the
cause of delay. She responded that in a study of 40 projects, 39 projects were slowed
by a lack of federal funding. With an annual budget of $5 billion, the problem is the
missing $85 billion, not NEPA.

It’s as though our house is burning down and instead of calling the fire department, our
solution is to lower the thermostat.

Numerous studies from GAO and CRS show that it is not federal rules that are causing
the delays. The number one problem is lack of funding, followed by state and local
laws, citizen opposition to projects, and zoning restrictions. The widely quoted “Two
Years Not Ten: Redesigning Infrastructure Approvals” is based on questionable logic
and outdated statistics debunked by Kevin DeGood of the Center for American
Progress. For instance, the “Two Not Ten” study claimed the average permit time was
10 years for completion of an EIS but those statistics covered 1999 to 2011. DeGood’s
analysis shows the average length is down to 3.6 years between 2012 through 2016.
We believe newer data within the administration will show the trend toward faster
processes is continuing.

Broadband deployment is not delayed by Environmental Impact Statements; in fact, no
broadband project was ever required to do one by the Federal Communication
Commission. Drinking water projects suffer from a lack of financing, not environmental
review.

2 Philip K. Howard, “Two Years Not Ten: Redesigning Infrastructure Approvals” (New York: Common
Good, 2015), available at http://commongood.3cdn.net/c613b4cda258a5fcb_e8m6b0i3x.pdf
3 https://www.americanprogress.org/issues/economy/reports/2017/05/03/431651/debunking-false-claims-
environmental-review-opponents/
Scapegoating NEPA may be a cheap applause line, but we cannot “streamline” our way to universal broadband access, new tunnels under the Hudson, a bridge over the Ohio River, or new sewer systems.

Why NEPA Matters
I would like the Committee to appreciate why the National Environmental Policy Act (NEPA) and the federal permitting requirements to protect our air, water and wildlife are so important. With an emphasis on “smart from the start” federal decision making, NEPA protects our health, our homes, and our environment. Led by Representative John Dingell and Senator Scoop Jackson and signed into law by President Nixon, the law was prompted in part by concerns from communities whose members felt their views had been ignored in setting routes for the Interstate Highway System. NEPA has empowered the public, including citizens, local officials, landowners, industry, and taxpayers, and demanded government accountability for more than 40 years.

NEPA is democratic at its core. In many cases, NEPA gives citizens their only opportunity to voice concerns about a federal project’s impact on their community. When the federal government undertakes a major project such as constructing a dam, a highway, or a power plant, or if a private entity needs a federal permit so it can pollute the air or water, it must ensure that the project’s impacts — environmental, economic and otherwise — are considered and disclosed to the public. And because informed public engagement often produces ideas, information, and solutions that the government might otherwise overlook, NEPA leads to better decisions — and better outcomes — for everyone. The NEPA process has saved money, time, lives, historical sites, endangered species, and public lands while encouraging compromise and resulting in better projects with more public support. Our website https://www.nrdc.org/resources/never-eliminate-public-advice-nepa-success-stories highlights NEPA success stories that prove this point.

Most recommendations to cripple the process try to limit public notice and comment are undemocratic. The first time a rancher learns of a pipeline going through his property
shouldn’t be when an attorney shows up at his door with an offer to purchase under threat of taking the property by eminent domain. Thanks to NEPA, tens of thousands of Americans have participated in important federal decisions and projects have been made better because of it. And yes, some wasteful projects have died.

Recent Changes to the NEPA and Permitting Process
“Streamlining” or, more accurately, “steamrolling” has been an easy, no-cost way to pretend we are addressing delays in project delivery. Because many congressional committees have tried to assert jurisdiction over NEPA, there have been numerous and contradictory changes to the NEPA process made by Congress since 2005. Various bills have shortened public comment periods, changed the statute of limitations to four different time periods depending on the project, limited access to courts, and set up arbitrary deadlines for permit approvals. USDOT-led projects can now fine other agencies that miss deadlines; a provision that makes as much sense as debtors’ prison

Major changes occurred in October 2015 with the passage of the Fixing America Surface Transportation Act (The FAST Act). Title 41 of that bill, mandated a new inter-agency administrative apparatus called the Federal Infrastructure Permitting Improvement Steering Council—largely controlled by the Office of Management and Budget (OMB)—to set presumptive deadlines, push the resolution of interagency disputes, and allocate funding and personnel resources to support the overall decision-making process.

This infrastructure council was barely operational when the Administration changed. President Trump’s first Infrastructure Permitting Executive Order— as the chief Senate sponsors, Senators Portman and McCaskill wrote in a letter to the President—contradicted authorities and responsibilities already in FAST-41, to the consternation of project sponsors that were already participating in the permitting board’s existing process. If the objective is to improve infrastructure project reviews and permitting,

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Congress' most important challenge is to exercise oversight over implementation. While we don't applaud everything in the law, its robust provisions were enacted just two years ago. The House appropriation for the steering council was a meager $1 million; probably not even enough to carry out the council's statutory requirement to track project schedules online. Why pass changes to NEPA to "reform", when Congress then fails to appropriate money to effectuate those changes but continues to try to layer on additional changes?

The President's revised Infrastructure Executive Order of August 15, 2017, ameliorated most of the inconsistencies with the earlier order. However, that EO also gave a green light to wasteful federal construction in areas susceptible to flooding by revoking an executive order (E.O. 13690) that previously updated flood protection standards. These standards would make sure that public schools, hospitals, military bases, water treatment plants — all public facilities and infrastructure built with federal funding — are constructed with a higher margin of safety for floods and future sea level rise. Revoking these standards will ensure that billions of dollars are wasted rebuilding vulnerable public facilities that could have been built with greater resiliency features or in a safer location.

Despite enactment of this legislation in 2015 and other recent changes to NEPA, this Congress has seen many bills introduced in both chambers that would further amend the NEPA process without regard for their impact on process changes already made in FAST-41. Rather than simplifying current processes, these bills would create new conflicts, sow confusion, and delay project reviews.

Legislation has reached the House floor that would establish new and different and inconsistent permitting and NEPA processes for hydroelectric power projects, water supply projects, natural gas pipelines, international pipelines, fisheries and timber management, and other projects. Besides threatening our environment and natural heritage adopting new measures now would exacerbate effective administration of existing law. For example, USDOT’s Inspector General confirmed the agency has been
hamstrung by repeated policy changes in recent Congresses. Although USDOT had completed most of the reforms mandated by MAP-21 in 2012, the Department was forced to delay implementation of others because they had to be revised to comply with additional requirements of the FAST Act.5

The recent draft infrastructure proposal from the White House is not a serious proposal but follows a pattern of falsely blaming project delays on basic environmental protections. The leaked provision would repeal critical clean air, clean water and endangered species protections and undermine basic environmental statutes. It would also set up a process guaranteed to neuter public input into federal actions and give agency heads free reign to virtually exempt any project from NEPA, free from court challenge.

Polling shows that Americans rightfully believe we do not have to sacrifice our environment to have a modern infrastructure system. We don’t need to give the Interior Secretary carte blanche to build pipelines through every national park. We do need NEPA to help build a modern infrastructure system that is resilient, energy efficient, and takes into account the impact of a changing climate.

**What should a new infrastructure bill do?**

Last spring, NRDC released 21st-century infrastructure principles that we believe would produce real benefits to the nation. These principles that are detailed on our website6, include:

- Public dollars must be used for the public good. When taxpayers pick up the tab, the public should be the beneficiary of that investment. We must prioritize performance-based infrastructure and projects that deliver economic, social and

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environmental benefits—such as jobs, improved mobility, and climate resiliency. Innovative financing and management though public-private partnerships are encouraged. However, any project that gives private investors special incentives must demonstrate value to the community over the long term, result in fair but not excessive profits, and allow for joint management with the public sector to ensure the public purpose is maintained.

- Innovation in clean energy and water should be a priority. Water and energy systems should meet 21st century needs. Unfortunately, almost all of these critical infrastructure systems were built in the 20th or even 19th century, in many cases relying on outdated technologies and practices. Technological innovations like smart meters and energy storage as well as upgrades to the nation's power infrastructure will enable us to take advantage of the clean, reliable, and cost-effective energy resources. We need water systems that rely more on distributed green infrastructure, water efficiency, and water reuse to complement our existing investments in gray infrastructure systems.

- Investment in Climate Resilient Infrastructure Projects and Smart Technology is critical. Climate and living patterns are changing rapidly. Infrastructure needs to be designed to meet the challenges of the next century, including rising sea levels, more intense storms, and longer droughts. It also means investment in new technologies and increasing demands on infrastructure systems as urbanization increases. Deploying information technology like broadband and wireless will help us get the data to run our cities and towns more efficiently and decrease the wear and tear on infrastructure. These systems can be added at minimal costs today. Projects should include high-quality connectivity in communities that don’t have it, to promote affordable access for all.

- Accountability for Every Dollar. There must be public input and a public review of the project’s benefits and potential impacts on wildlife, air and water quality, jobs and public health before any work is undertaken.
• Flexible funding should be allocated for local and regional infrastructure planning. The stream of federal dollars for infrastructure should go directly to communities rather than solely to states. Metropolitan Planning Organizations in the nation's large and small urban areas should be able to have direct access to funding so that local communities can fulfill their own infrastructure visions. This addresses, for example, the historic challenge of implementation funding for innovative local plans—some of which were years in the making under the interagency Partnership for Sustainable Communities—but were not funded by states. This local focus should also include the hiring of local workers for community projects, putting economic opportunity in the hands of the very people affected.

• Good, forward-looking jobs are important. We must prepare Americans for the future. Infrastructure projects are an opportunity for good jobs beyond construction. It's important that for construction projects, costs aren't reduced on the backs of bad deals for workers. New industries that accelerate an entire supply, like clean energy jobs are our future. The growth in clean energy and sustainable jobs is one of the brightest spots on our economic horizon.

We believe one of the bills that is subject of this hearing, H.R. 2479 Leading Infrastructure for Tomorrow's America Act, is a positive alternative to the scapegoating and diversionary tactics of attacking environmental laws and properly addressing our infrastructure needs. For jurisdictional purposes, it only covers programs and projects in this Committee's purview but is a good template for the other committees with jurisdiction over infrastructure to really address the issue rather than pretend we can make a silk purse out of a sow's ear.

I want to specifically mention the LIFT's Act provisions addressing our drinking water problems including lead pipes. Toxic lead that impacts children's mental development cannot be a partisan issue. Making American children safe from lead poisoning needs to be addressed and addressed now. I have attached to my written testimony, the more detailed testimony of my colleague Larry Levine. This testimony addresses both
drinking and surface water infrastructure needs and recommendations to address the very important affordability issues.

We ask the Congress to seriously address our infrastructure needs, to take into account the threats from climate change and build resilient and energy efficient systems that improve the quality of life with an infrastructure plan attuned to the needs of the 21st century. We can do this smarter and better --by using --not crippling, the environmental review process.

Thank you for the opportunity to testify. NRDC looks forward to working with the committee on bold and effective solutions to our nation's infrastructure challenges.

[Mr. Slesinger's full statement can be found at: https://docs.house.gov/meetings/if/if16/20180130/106810/hhrg-115-if16-wstate-slesingers-20180130-u5050.pdf.]
Ms. Blackburn. The gentleman yields back.

Ms. Hovis, 5 minutes.

STATEMENT OF JOANNE S. HOVIS

Ms. Hovis. Chairman Blackburn, Ranking Member Doyle, members of the subcommittee, thank you for your commitment to bridging the digital divide. I am Joanne Hovis. I am President of CTC Technology and Energy, a communications engineering and planning consultancy. I am also CEO of the Coalition for Local Internet Choice, a coalition of public and private entities that believe solving our Nation’s broadband challenges requires a full range of options, including locally-driven efforts and public-private collaboration.

As we look forward to Super Bowl Sunday, I suggest today that our country’s drive to bridge the digital divide is a critical test of our ability to develop a winning strategy on one of the most important playing fields of the 21st century. Let me ask a couple questions in this regard. First, do we actually have a winning strategy? Much of the current discussion here in Washington seems premised on the idea that a winning broadband strategy will smash so-called barriers such as environmental processes, local process, and cost of access to public facilities. In my experience, the premise is wrong. As multiple members of this panel have said, the fundamental reason we do not seek comprehensive broadband deployment throughout the United States is that areas with high infrastructure costs per user, particularly rural areas, fail to attract private capital. To solve this, all levels of government can take steps to improve the economics of broadband deployment in areas where investment has been insufficient. These include not only rural communities, but also underserved urban areas, such as small business locations in cities and suburbs, and low-income areas where adoption is low and incumbents see no return that justifies network upgrades. Particular attention and support must be directed to those areas. Without such efforts, private dollars will continue to flow primarily to the most profitable areas.

A focused game plan would involve these plays. First, support public-private partnerships that ease the economic challenges in constructing rural, urban, and tribal infrastructure; second, incent local efforts to build communications infrastructure, infrastructure that private internet service providers can use by making bonding and other financing strategies more feasible, potentially through reduced interest payments or expanded use of tax exempt bonds or expansion of the new market tax credit programs; empower local governments to pursue broadband solutions of all types, including use of public assets to attract and shape private investment patterns so as to leverage taxpayer-funded property and to create competitive dynamics that attract incumbent investment; require all entities that benefit from public subsidy, including assets to publics assets, to make enforceable commitments to build in areas that are historically unserved or underserved; and maximize the benefits of competition by requiring that all Federal subsidy programs are offered on a competitive and neutral basis for bid by any qualified entity.

The current strategy doesn’t squarely face the challenge. Many current efforts at the FCC and in this body are focused on reducing
the private sector’s cost of doing business, such as by blanket re-
moval of local process and by forcing local communities to subsidize
carrier access to public property. All of this simply makes more
profitable the already profitable areas of the country rather than
changing the economics of broadband deployment in areas where
there is no return on investment.

And if these strategies are premised on the idea that removing
so-called barriers will lead to rural deployment of 5G, it is critical
to know that no credible engineer, market analyst, or investor, is
claiming that 5G deployment is planned or technically appropriate
for rural areas. This is because 5G is a wireless technology for very
fast communications over very short distances and is, thus, not
well-suited to low density areas.

If the goal is to attract private capital to rural communities,
making wireless deployment more profitable and high-return met-
ropolitan markets is exactly the wrong way to do it. Rather, this
approach is like moving the ball a few inches and calling it a touch-
down.

My second question is, do we have the right players on the field?
Let me suggest that local governments have been most valuable
players in creating and incenting broadband deployment for years,
and that it is counterproductive to vilify localities based on the evi-
dence-free assertion that local efforts and local processes restrict or
deter private investment. The assumption that the Federal Govern-
ment is more motivated to enable deployment of broadband, ig-
nores the immediacy of the digital divide for local officials. And the
assumption that the Federal Government is more competent to de-
velop strategies ignores the experience of the past decade, which
demonstrates across a wide range of public-private collaborations
that local governments, given the opportunity, will apply creativity,
local resources, physical assets and diligence to try to solve
broadband problems.

My testimony includes examples of a wide range of different pub-
lic-private collaborations that are in existence or in development in
communities ranging from West Virginia to Wyoming to New York
City, to the coastal cities on the West Coast.

Let me say, finally, that preempting local efforts and authority
is not a winning strategy, as it simply removes from the playing
field one of the most important players.

My thanks for your consideration.

[The prepared statement of Ms. Hovis follows:]
Testimony of Joanne S. Hovis
President, CTC Technology & Energy

before the

U.S. House of Representatives Committee on Energy and Commerce
Subcommittee on Communications and Technology

“Closing the Digital Divide: Broadband Infrastructure Solutions”
January 30, 2018
Chairman Blackburn, Ranking Member Doyle, Members of the Subcommittee—thank you for having me here. And thank you for your commitment to bridging the digital divide. My name is Joanne Hovis. I am president of CTC Technology & Energy, a communications engineering and planning consultancy serving the public sector.

I am also CEO of the Coalition for Local Internet Choice, a non-profit entity that brings together public and private entities that believe solving our nation’s broadband challenges requires a full range of options. And this includes locally-driven efforts to deploy networks and create public-private collaboration.

As we look forward to Super Bowl Sunday, I suggest today that our country’s drive to bridge the digital divide is a critical test of our ability to develop a winning strategy on one of the most important playing fields of the 21st century.

My comments focus on two critical questions about this essential effort. My first question is, do we actually have a winning strategy? Much of the current discussion here in Washington seems premised on the idea that a winning broadband strategy will smash so-called barriers, such as environmental permitting, local process, and costs of access to public facilities.

The premise is wrong. In reality, the fundamental reason we do not see comprehensive broadband deployment throughout the United States is that areas with high infrastructure costs per user, particularly rural areas, fail to attract private capital. This is not surprising. Nor is it a value judgment. It is simply how private investment works. If return on investment is low or nonexistent, the investment will not be made.
To solve this, state, local, and federal governments can take steps to improve the economics of broadband deployment in areas where investment has been insufficient. These areas include not only rural communities, but also underserved urban areas such as small business locations in cities and suburbs, as well as low-income areas where adoption is low and incumbents see no return that justifies network upgrades. Particular attention and support must be directed to those areas; without such efforts, private dollars will continue to flow primarily to the most profitable areas.

A better game-plan would involve these plays:

• First, support public–private partnerships that ease the economic challenges of constructing rural and urban infrastructure

• Second, incent local efforts to build infrastructure—ones that private service providers can use—by making bonding and other financing strategies more feasible, potentially through reduced interest payments or expanded use of tax-exempt bonds

• Third, target meaningful infrastructure capital support to rural and urban broadband deserts, not only to attract private capital but also to stimulate private efforts to gain or retain competitive advantage

• Fourth, empower local governments to pursue broadband solutions of all types, including use of public assets to attract and shape private investment patterns, so as to leverage taxpayer-funded property and create competitive dynamics that attract incumbent investment
• Fifth, require all entities that benefit from public subsidy, including access to public assets, to make enforceable commitments to build in areas that are historically unserved or underserved

• And, maximize the benefits of competition by requiring that all federal subsidy programs are offered on a competitive and neutral basis for bid by any qualified entity

Such strategies directly address the core reason the digital divide persists: lack of return on investment in many areas of the country.

Let me be very clear why the current strategy doesn't squarely face the challenge. Current efforts are focused on reducing the private sector's costs of doing business, such as by removing local processes, waiving environmental protections, and forcing local communities to subsidize carrier access to public property. All of this simply makes more profitable the already profitable areas of the country. Reducing those requirements does not fundamentally change the economics of broadband deployment in areas where return-on investment is challenging—because the local processes and environmental and historic protections are such a small part of the economics of reaching and serving a rural area. Rather, at best, these efforts tinker at the margins of broadband economics; at worst, they distract from the key issues and misdirect resources.

1 Please see the declaration and report written by my colleague, Dr. Andrew Afflerbach, for the Smart Communities Siting Coalition. http://www.ctcnet.us/wp-content/uploads/2017/05/Streamlining-Deployment-of-Small-Cell-Infrastructure-by-Improving-Wireless-Facilities-Siting-Policies.pdf. This report, which has been filed in multiple FCC proceedings and never countered or disputed by industry participants, discusses how reducing local processes and fees will have marginal impact on rural broadband deployment. It suggests, rather, that local coordination, public-private planning, and partnership are tested means of enabling deployment.
If we want to solve deployment issues in rural and low-income areas, we must target our solutions to those areas, and the solutions we choose must be adequate to the task. One-size-fits-all approaches will not bridge the digital divide because they effectively provide most of their benefit to providers in better-served areas that don’t need incentives, without requiring the providers to invest some of their windfalls in more challenging areas. In other words, legislation or regulatory activity that purports to remove so-called barriers like local processes and fees may make for more profitable carriers in well-served areas. But they won’t be sufficient to incent deployment in rural and urban broadband deserts.

Furthermore, if these strategies are premised on the idea that removing so-called barriers will lead to rural deployment of the emerging wireless technologies known as “5G,” it’s critical to know that no credible engineer, market analyst, or carrier is claiming that 5G deployment is planned or technically appropriate for rural areas. This is because 5G, which is still in developmental stages, is a wireless technology for very fast communications over very short distances. No wireless carrier would use 5G to serve low-density rural areas, any more than a team would focus on short-yard plays when far from the end zone, behind at the end of the fourth-quarter. If the goal is to attract private capital to rural communities, making wireless deployment more profitable in high-return metropolitan markets is exactly the wrong way to do it.

In summary: Doubling down on existing broadband investment patterns by making them even more profitable will not close this nation’s digital divide. Rather, this approach is like moving the ball a few inches and calling it a touchdown.
My second question about our digital divide strategy is: Do we have the right players on
the field? Let me suggest that local governments have proven themselves most valuable players
in creating and incenting broadband deployment for many years—and that it’s counter­
productive to vilify localities based on the evidence-free assertion that local efforts and local
processes restrict or dis incent private deployment.

The assumption that the federal government is more motivated to enable deployment of
this critical economic development infrastructure ignores the immediacy of the broadband need
and the digital divide for local officials. And the assumption that the federal government is more
competent to develop strategies to incent broadband deployment ignores the experience of the
past decade, which demonstrates that local governments, given the opportunity, will apply
creativity, local resources, physical assets, and diligence to try to solve broadband problems. For
example, when Google Fiber first got started, more than 1,100 communities offered access to
infrastructure, data, and other help to try and attract the company.

And they are not alone. Hundreds of localities have reached out to companies like AT&T
and other incumbents, C-Spire, Ting Internet, Metronet, ALLO Communications, and many others
to offer what amount to economic development packages and other incentives in return for
commitments to deploy broadband infrastructure. Local collaborations are in formation between
public and private sectors in hundreds of communities, to the benefit of both. The federal and
state governments should not disrupt them.

Make no mistake: It is in areas where localities have been free to use their creativity,
public assets, and legal authority to incent opportunity where we have seen some of the most
robust broadband deployment. Observe the small towns in the Tennessee Valley that are
connected with ubiquitous community-owned fiber optics; the Google Fiber cities where
incumbents, led by AT&T, have greatly increased their upgrade investments to react to the threat
of competition; the communities in Mississippi that competed to attract C-Spire investment; the
Indiana towns that developed economic development packages to attract Metronet; and so
many others. The data are clear: The areas of the country with the best infrastructure and the
liveliest competition are areas where localities have been able to engage in addressing their
broadband needs based on local strategies and local needs.

Is it wise or appropriate for the federal government to interfere with those and many
other potential local initiatives? Is the federal government better able to understand how to work
with companies to meet both private and community needs? And is it really accurate to assume
that industry giants like AT&T and Verizon cannot ably negotiate with localities—and require the
intervention of the federal government to protect them?

Broadband is an existential issue for many local governments. No one recognizes better
than an elected local official the importance of broadband to the economic vitality of a
community, and its attractiveness for residents, workers, and businesses.

In short, it’s counter-productive to tie the hands of the public officials—the very people
who have the greatest incentive to solve these problems effectively and efficiently.

Let me share a few examples of the local motivation and creativity I see throughout the
country:

• In Spring Hill, Kansas and Pikeville, Kentucky, local communities are seeking to deploy
fiber optic infrastructure to enable private sector service provision and competition as
part of a broader economic development strategy. In Pikeville, the goal is to replace the
declining coal economy with a coding economy, which is possible only with robust and plentiful broadband.

• Seattle has sought ideas from the private sector and has developed strategies for enabling wireless broadband service to low-income communities and users; the City is considering strategies to incent companies to serve lower-income parts of the City.

• In Gallup, New Mexico, the city’s utility seeks to deploy infrastructure for public safety that will also enable private sector services in an area where private sector infrastructure deployment has not emerged.

• San Francisco is considering establishing an innovative public–private partnership that would ensure deployment and provision of ubiquitous best-in-class services with particularly attractive and affordable pricing for the 150,000 San Francisco residents who are not currently able to purchase existing high bandwidth products.

• In Michigan, a number of rural townships that are unserved with broadband are seeking to build broadband infrastructure in their rights-of-way and partner with private entities for service provision. A local non-profit, the Michigan Broadband Cooperative, formed to work with and coordinate among the townships so that they can learn from each other and build sustainable partnership strategies.

• In Sublette County, Wyoming, and Huntington, West Virginia, the local governments are seeking to deploy infrastructure to business districts to enable private sector services in an area where private sector infrastructure deployment has not emerged. Bowling Green, Kentucky has done exactly that: the city built fiber infrastructure to businesses and has enabled local companies to compete in the global marketplace.
• Boston has developed an innovative partnership with an open access fiber and wireless infrastructure provider in which the City incented new, open fiber deployment by leveraging the needs of schools and public safety facilities for fiber-based services.

• Rural Queen Anne’s County, Maryland has been working with local incumbents seeking partnership opportunities to support broadband deployment.

• New York City late last year released a request for information seeking industry ideas for how the city and private entities can collaborate to bridge the considerable digital divide in which low-income New Yorkers have fewer broadband choices and challenges affording high bandwidth options where they exist. In a clear indication of the potential for city-led public-private collaboration, the city received more than three dozen substantive responses.

• In Wilson, North Carolina, the public utility extended gigabit internet to rural areas in its electric footprint. It enabled a large family farm to export its sweet potatoes to the European market by meeting Europe’s high food monitoring requirements. At the same time, the utility was the only carrier to help the 600-home rural town of Pinetops with free connectivity to the local church and shelter during the 2016 flood following Hurricane Matthew.

• In Lafayette, Louisiana, Chattanooga, Tennessee, and dozens of other communities, local governments have developed their own advanced communications networks after finding the incumbent providers unwilling or unable to upgrade their networks in a timely manner to meet local needs.
Blaming localities for the digital infrastructure divide ignores these and thousands of other local efforts. At the same time, tying the hands of localities reduces their ability and incentive to work creatively with partners of all sorts to solve these problems. And preempting local authority over infrastructure assets such as light poles removes from the local toolkit incentives that localities can use to attract and shape private broadband deployment.

In short: Preempting local efforts and authority is not a winning strategy; it simply removes from the playing field one of the most important players: local government. Let me suggest that the urgency of this task, bridging the infrastructure digital divide, calls for all players to take the field.

My thanks for your consideration of my comments and for your commitment to this enormously important issue.
Mrs. Blackburn. The gentlelady yields back. Ms. Swanson Katz, you are recognized for 5 minutes.

STATEMENT OF ELIN SWANSON KATZ

Ms. SWANSON KATZ. Good morning, Chairman Blackburn, Ranking Member Doyle, and distinguished members of the committee. I am the consumer counsel from the State of Connecticut—go Patriots—you brought it up. I am head of a small, independent, non-partisan state agency that advocates for consumers on issues relating to electricity, natural gas, water, and telecommunications.

In that capacity, I serve as Governor Malloy’s designee to the Intergovernmental Advisory Committee to the FCC, in which I serve as chairman. I am also President of the National Association of State Utility Consumer Advocates, an organization of 44 consumer advocates across the country, including the District of Columbia. And in that capacity, I serve on the FCC’s Joint Board for Universal Service. So my interest in this and my time spent on this is deep.

So I thank you for your interest and your attention to this important issue of the digital divide. As you know, there are, as we have heard, there are many, many Americans who—and particularly small businesses—that do not have access to broadband.

According to Pew Research Center, that is about 25 percent of Americans do not have a broadband connection in their home. That number rises to an astonishing 39 percent in rural America. And there is approximately 5 million homes with school-aged children which are equal over 17 percent of those homes with school-aged children do not have a broadband connection. And it is particularly egregious in low income households.

In Connecticut, we wanted to learn more about the digital divide, particularly as it impacts children. And you may be surprised by that, since Connecticut is generally seen as an affluent state with generally-sound broadband infrastructure. However, like every state, we have unserved and underserved communities. We, therefore, commissioned a report with the Hartford-based group called Strategic Outreach Services to assess the affordability of an accessibility of broadband for students in the north end of Hartford. That is a predominantly ethnic minority community with predominantly low income but, nonetheless, an area known for its community pride and commitment to its schools.

And we worked in that partnership with Janice Flemming-Butler, who is the president of that organization, and founder. And I mention her, because she is in the room today, which is a testimony to her commitment. And for those of you who are interested, I urge you to talk with her.

So we met in that capacity. We met with educators and parents and students. We met with church leaders. We met with neighborhood watch site organizations. We met with city leaders. We talked to literally hundreds of people in the North End of Hartford. And what we learned is that many students in the North End suffer from the Homework Gap, that area that we define as generally between 6:00 to 10:00 p.m. When students need access to connection to do their homework.
And what we heard is that many students take extreme measures because they don’t have a broadband access at home, either for affordable or because of access. And we heard stories that students would go to fast food restaurants to try to do their homework. And in fact, one of the local restaurants changed its policy so you could no longer sit there that long, seemingly in response.

We also learned that students venture out at night into all kinds of weather trying to catch Wifi from other buildings. People were upset that the public schools shut down the Wi-Fi after hours, so students can sit nearby, although we learned they did it because of safety concerns.

We heard from parents who recognized that broadband was important to their children, but simply found it unaffordable or unavailable at any price, or the back balances prevented renewals. We saw long lines of students queued up at the public libraries to use their computers, although when they closed at 6:00, they had nowhere to go. And in fact, since we have done the reports, some of those branches have closed.

There is also frustration expressed that policymakers saw a smart phone as a substitute, but that is not an adequate substitute. It is very expensive to do your homework on a smart phone, and it is very hard to type a paper. So there is simply not an adequate substitute.

So what troubled me as a consumer advocate, as a former teacher, as a parent, and as a human being is that if it is happening in Connecticut, it is happening everywhere. And no child should have to sit in Dunkin’ Donuts or McDonald’s to do their homework, or sit outside in the dark trying to finish a project. And the implications for our education system and the quality of education that we deliver to children in low income urban communities, and rural communities, is profound.

We would never say to students whose parents can’t afford textbooks, “I am sorry, you don’t get to learn history, or math, or English. Or if you don’t live near a library, I am sorry, you don’t have access. But that is, in effect, what we are saying to these children, to the entire generations by failing to address the Homework Gap in so many areas.

So my ask for you today is that you consider the urban communities as well as the rural communities. We are working with both in Connecticut. And it is not just this question of adoption. It is not just simply that they can’t afford it, it is also a question of quality. And that makes a difference as well.

So thank you very much.

[The statement of Ms. Swanson Katz follows:]
Testimony of Elin Swanson Katz, Connecticut Consumer Counsel

before the

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

hearing entitled

“Closing the Digital Divide: Broadband Infrastructure Solutions”

Good morning, Chairman Blackburn, Ranking Member Doyle, and distinguished members of the Subcommittee on Communications and Technology. Thank you for the opportunity to testify on the important topic of closing the digital divide.

Since 2011, I have served as the Consumer Counsel for the State of Connecticut. I head the Office of Consumer Counsel (OCC), a small, independent, and nonpartisan state agency that serves as the public advocate on matters relating to electricity, water, natural gas, and telecommunications. Within the OCC is the Connecticut State Broadband Office. I also serve as Connecticut Governor Dannel P. Malloy’s designee to the Federal Communications Commission’s (FCC) Intergovernmental Advisory Committee (IAC), and serve as its Chair. I am also the President of the National Association of State Utility Consumer Advocates (NASUCA), an association of 44 consumer advocates in 40 states and the District of Columbia. I also represent
NASUCA on the FCC's Joint Board for Universal Service. Except as noted, my remarks here today are in my capacity as Connecticut's Consumer Counsel.

I am grateful for the Committee's attention to the disparities in access, availability, speed, and cost that we see across our nation with respect to broadband internet services. As noted in the Committee's background memo, "The importance of broadband in modern American life and the economy cannot be overstated."

Broadband has revolutionized how we communicate, conduct commerce, educate our children, engage with health care providers, and participate in government. Unfortunately, as you know, there are millions of Americans who do not have broadband internet access in their homes, and tens of thousands of businesses (or more) -- typically small businesses -- that also do not have access to broadband internet services. According to the Pew Research Center, 25% of Americans still do not have broadband internet access service in their homes.1 Approximately 5 million households with school-age children, equating to 17.5% of such households, do not have a broadband internet connection at home2; with low-income households accounting for a disproportionate share.3 The problem is also particularly acute in rural America, as 39% of rural Americans lack access to broadband internet access service.4

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1 Pew Research Center, Internet/Broadband Fact Sheet, January 12, 2017.
But these statistics are just numbers, and as members of this Committee, I am sure you have heard them or similar numbers before. Today, I'd like to tell you a little about the people; that is, the stories behind the numbers. Let me start with what we have found in Connecticut as part of our effort to study and address the "Homework Gap," the households with school-age children that do not have a broadband connection.

It is perhaps surprising to think about Connecticut as a focus of the Digital Divide, as overall, we are generally an affluent state with sound broadband infrastructure. Nonetheless, like every state, we have underserved and unserved pockets, particularly in urban and rural communities. In particular, we found that many legislators and policymakers were not aware of the fact that there are large numbers of children in our cities who do not have broadband access at home. We therefore commissioned a report with a community-based communications company in Hartford, Connecticut, Strategic Outreach Services (SOS), to assess the affordability and accessibility of broadband internet service for students in the North End of Hartford, an area of the city predominantly low-income, demographically made up entirely of ethnic minorities, and also one known for its community pride and commitment to ensuring its students reach their full potential. SOS was founded by Janice Flemming-Butler, who is also founder and CEO of The Voices of Women of Color, a social justice organization that teaches leadership skills to women of color. Ms. Flemming-Butler is in the audience today, along with her colleague Andrea Comer.

In order to collect first-hand accounts and data, over the course of many months in 2017, we met with community groups in Hartford, attended Neighborhood
Revitalization Zone (NRZ) meetings and other stakeholder meetings, and spoke with parents, educators, and students in the North End.

What we learned is that many students in North Hartford suffer from the "Homework Gap," in that after school hours, and particularly from 6 p.m. to 10 p.m., they lack the home internet access enjoyed by their suburban peers. In fact, the SOS report found that students in the North End face a "broadband desert," which forces them to continually search for safe, reliable broadband service connections outside of their homes. For example:

- Students used the Wi-Fi access at a local fast food restaurant to do homework (however, the restaurant subsequently changed its policies so as to limit the time a patron to could stay at a table);
- Students venture out at night, regardless of the weather, in an attempt to access Wi-Fi near buildings;
- The public schools shut down Wi-Fi access after-hours, so that students cannot sit nearby and complete homework;
- Many parents recognized that broadband internet access was important to their children, but found it simply unaffordable or unavailable at any price, or that back balances prevented renewals;
- There are long lines of students (and adults) queued up to use the public libraries' computers before their 5 p.m. closure;
- There were also numerous expressions of frustration that a "smart phone" is often viewed by policymakers and the public as a substitute for a home
connection for broadband internet access, when smart phones are typically expensive and difficult to use to complete written schoolwork or write papers.

The report concludes:

It is clear that broadband internet service plays a significant role in educational progress in North Hartford. The limited access to quality technology impacts the learning experienced by many students who attend Hartford schools. This often results in a lack of equity for North Hartford students, which impacts their ability to leave school with the requisite tools needed to move on to higher education and to contribute to the state’s workforce. Families affected by the Homework Gap, the majority of whom are minority and low-income, struggle to find access to affordable broadband internet services in their home, and also may require training and technical support once they obtain access. Surprisingly, such services are not available to many North Hartford residents at any price.5

What we learned about and heard from students in North Hartford is deeply troubling to me as a consumer advocate, a former teacher, a parent, and as a human being. No child should have to do their homework at a McDonald’s or Dunkin’ Donuts, or sit outside, in the dark, trying to finish a school project using someone else’s Wi-Fi. The implications for our educational system and the quality of education that we deliver to children in low-income urban communities is profound. We cannot hope to lift children out of poverty, to realize their potential, and to prepare them to participate in our global economy, if we do not provide them with basic educational resources like reliable, affordable access to broadband internet services.

We have never said to children whose parents cannot afford textbooks, "Sorry, you don't get to learn math or history or science."\(^6\) However, by failing to address the fact that too many students live in neighborhoods with low-quality broadband internet access and families that can't afford even a basic broadband internet connection, we are in effect sending the same message.

This situation is by no means limited to Hartford. I have worked with municipal officials, educators, small businesses, and other stakeholders in other cities and towns as they work to bring attention to the lack of affordable, reliable access to broadband internet services in certain low-income portions of their communities, and to identify solutions, both short-term and long-term.

It is a question not just of affordability, but of access and the quality of access. We heard, as discussed in the Homework Gap report, that residents, schools and business owners experience challenges with connectivity and access. This situation was also documented in a 2016 report from my office, "A Brief Overview of Broadband Deficiencies in Connecticut," prepared by CTC Technologies.\(^7\)

\(^6\) As one student told me, "It's not that my mom doesn't know it's important, but sometimes after she pays the rent and buys food and gets whatever my little brother needs, there just isn't any money left over. This underscored to me one particular difficulty faced by families that live paycheck to paycheck, and sometimes can't afford the monthly bill for Internet services: it's not generally a portable commodity; you can't purchase some broadband at the store like a loaf of bread when you have the available funds. This makes providing this essential educational resource even more challenging for low-income families.

That work also focused in part in Hartford, Connecticut. Prior to the Strategic Outreach Services study and report, my office worked in late 2015 and early 2016, with CTC Technology & Energy (CTC), a telecommunications engineering and consulting firm. A CTC engineer conducted site visits at business locations suggested to us by Hartford officials. We visited urban areas of the state on December 14, 2015 and rural areas on January 6, 2016. We met with a range of users and institutions, discussed broadband capabilities and challenges, performed speed tests, and surveyed broadband physical plant.

While Connecticut is lauded by incumbent providers as having access to fiber services in excess of 90% across the state, CTC found a range of broadband challenges in pockets of Connecticut, including:

1) Maximum speeds far less than what businesses need for current operations;
2) Limited or no affordable competitive options for broadband services;
3) Growing needs for broadband that will further exceed the current broadband services; and
4) Long delays in obtaining services.

From our urban surveys we found evidence of high-quality fiber and cable broadband services in proximity to the poorly served locations. However, the individuals at those locations reported that service providers decline to connect users to those services, or will do so only at a prohibitively high cost—approximately $10,000 to $30,000 for a short street crossing. Also, services are costly—from $1,000 to $2,000 per month.
Our survey work found businesses operating at the equivalent of dial-up internet speeds. For example, Scotts' Jamaican Bakery (801 Windsor St., Hartford) is locally famous for its products and operates in a former manufacturing facility. Scotts' has multiple locations in Hartford for food preparation and retail sales. In addition to typical business Internet communications, Scotts' needs broadband for its telephone system, to update its website, and for USDA inspectors to connect. Scott's cannot operate a unified telephone system or an interconnected point-of-sale system across its locations. The owner, Gordon Scott, reports he has had serious problems with broadband since 2008 and needs to do all but the most rudimentary Internet tasks from his house. In fact, he told us that to send an email from this facility, he has to have everyone hang up any phone calls. When we tested his connection, we found a download speed of 1.44 Mbps, the functional equivalent of dial-up speeds. At the time, Scotts' was paying $290 per month for service, and had been quoted a connection cost of $8,000 to connect to a fiber node that was already located on his street.

In addition, we documented challenges faced in rural parts of Connecticut. As discussed in the Deficiencies report, members of the Northwest Hills Council of Governments (NHCOG), which is a coordinating body for chief elected officials from twenty-one rural Connecticut towns, attended a meeting in Caanan, Connecticut. They reported that it is difficult for residents in the surrounding areas to get quality broadband. In rural housing distant from the town center, only dial-up connections are

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available in some areas, lower speed DSL in others. Individuals have received quotes from incumbent providers as high as $60,000 for fiber connections to their residences.

While this report received significant pushback from some industry representatives and claims that I was "cherry-picking" data to overstate the problem, at the same time, I received a number of inquiries from disgruntled mayors in other Hartford municipalities asking why I hadn't also profiled the underserved areas in their communities. So these underserved urban pockets are a problem in many, many cities. In preparing my testimony, I also went back and checked on the locations which we tested, and for all but one of them, the situation remains the same. So progress is not coming, or certainly is not coming quickly enough for these small businesses.

There are challenges in identifying a path forward for urban communities like North Hartford and certain rural towns such as those in the NHCOG, but there is also much reason to be hopeful. The fact that legislators such as yourselves are taking notice and looking for options is a very positive sign. Based on the work we have done in Connecticut, as well as the work I have done at the national level through the FCC committees and NASUCA, I suggest the following:

- **Recognize that the Digital Divide exists in urban as well as rural communities.**

  There has been widespread recognition that many rural American communities, whether small towns, isolated hamlets, or Tribal areas, are at a crisis point. A lack of access to, or availability of, affordable, reliable broadband internet
service is crippling the ability of many rural areas to participate in the digital economy; access health care, education, and other essential services; and attract or retain young people. Access to such service is vital to the economic health of our rural communities.

There has been less attention, however, to the problem faced by many low-income urban communities. These urban centers, which often include significant minority populations, are less readily visible, as they are often broadband “deserts” surrounded by or adjacent to wealthier neighborhoods and suburbs with greater options. However, lack of affordable, reliable access in urban communities is just as impactful on its residences as on their rural counterparts. Seemingly intractable problems such as the achievement gap in education and the urban cycle of poverty cannot be solved without the provision of reliable, affordable broadband access.

- **Acknowledge the role of federal, state, and local governments in ensuring affordable, reliable access to broadband internet services.**

I again thank the Committee for implicitly acknowledging that government at all levels has a role in ensuring that our citizens have access to broadband Internet service. It is also now time to explicitly recognize that role. Ensuring affordable access to essential services is one of the elemental obligations of government, and these are public policy goals that form the center of activities for the two state agencies I manage. Broadband internet service, as noted in the Committee’s background memo, is one such essential service. The existence
of the Digital Divide demonstrates that there is much work to be done to provide universal access throughout the country.

As noted in Resolution 2017-04 of the National Organization of State Utility Consumer Advocates (NASUCA), URGING LOCAL, STATE, AND FEDERAL OFFICIALS TO ENSURE RELIABLE BROADBAND INTERNET ACCESS SERVICES ARE ACCESSIBLE AND AFFORDABLE TO ALL CONSUMERS, "universal access to affordable communications service is a bedrock principle of the policies of the United States, including the Communications Act of 1934 and the Telecommunications Act of 1996."9

Legacy phone service carries with it a regulatory universal service obligation requiring phone companies to provide service to consumers. Internet service providers (ISPs) have no such regulatory service obligation. They can and will generally choose to serve only areas which serve their economic interest, i.e., where they can make a profit. This does not make ISPs selfish or unreasonable – it makes them businesses. However, as federal, state, and local officials did with electricity, it is incumbent upon government officials to work with ISPs and promote competition to ensure that underserved or unserved areas are able to obtain reliable, affordable broadband internet service.

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9 This NASUCA resolution is available at this link: http://nasuca.org/wp-content/uploads/2017/01/2017-04-NASUCA-Broadband-Resolution.pdf.
• Support Ongoing Mapping of the Availability of Broadband Internet Services

In order to effectively deploy resources, it is essential that government officials, policymakers, citizens, and industry stakeholders understand the availability of broadband internet services, including speed, reliability, and cost of such services. Mapping of such services is thus necessary. For such maps to be accurate, the data must be independently verifiable and provided to the public in a fair and transparent manner.

• Support self-help efforts by state and local governments

Many government officials and stakeholders in our cities and towns recognize the essential nature of affordable, reliable broadband internet services. They are taking steps to help address the Digital Divide in their communities, including the Mayor's Office in Hartford, for example. These efforts include modeling of public-private partnerships with existing ISPs as well as new entrants; developing grant programs to support deployment to underserved and unserved areas; and developing regulatory mechanisms such as "Dig Once" policies and uniform pole access agreements that help speed the deployment of advanced networks. In another example, stakeholders from the rural towns in Connecticut's NHCOG (listed above) recognized that market forces alone have not brought and will not bring broadband internet access to their rural neighborhoods any time in the near future. They thus formed Northwest ConneCT, a non-profit organization that is analyzing public-private partnership models to build a fiber optic network covering the region, "with unlimited
capacity and an enhancement to our mobile network." As their website states, "We cannot stand still. We either slide down a long and painful slope or we make a change that turns the corner to positive."

Such efforts by state and local governments to ensure access to essential broadband internet services for their communities should be supported and applauded. Efforts to prohibit or curtail such actions by state and local governments will only harm these underserved and unserved communities, and delay or prevent the deployment of next-generation networks.

- **Provide financing, grants, matching funds, and other support for build-out of broadband infrastructure**

  It is clear that it will take action beyond reliance on traditional market forces to build out broadband infrastructure to these underserved and unserved urban and rural areas. The proof is that, despite an ever-increasing demand for affordable broadband internet service, there has been little improvement in these areas, except where there have been government-sponsored efforts to support infrastructure development. If market forces do not support build-out of infrastructure for this essential service, government has an obligation to step in. This is how we ensured every citizen has access to affordable electrical, how we ensured they had access to affordable telephone service, and this is how we will ensure that they have access to affordable broadband internet service.

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99 The Northwest ConneCT website can be found at this link: [http://northwest-connect.org/](http://northwest-connect.org/).
CONCLUSION

I thank you for your time and attention to this issue. I am heartened by your interest, as evidenced by the plethora of legislative proposals before you. If we move away from a regulatory scheme that provides a guarantee of universal telephone service, it is vital that we look at new roles for government and new models for partnerships with industry to ensure we do not lose the promise of access to essential communication networks for every citizen and in every community.

[Ms. Swanson Katz’s full statement can be found at: https://docs.house.gov/meetings/if/if16/20180130/106810/hhrg-115-if16-wstate-swansonkatze-20180130-u5060.pdf.]
Mrs. BLACKBURN. The gentlelady yields back. And Ms. Swanson Katz, would you please recognize your guest again?

Ms. SWANSON KATZ. Yes, Ms. Janice Flemming-Butler.

Mrs. BLACKBURN. Janice, would you please stand?

Thank you for your good work.

By way of correcting some statements that were made earlier, and for the information of those with us today, I wanted to reiterate the subcommittee hearing activities relative to infrastructure that have taken place.

You had November 16th, a hearing on The Race to 5G; October 25th, FCC Oversight Hearing; July 25th, we had the FCC Reauthorization Legislative hearing; June 21st, the hearing on Defining and Mapping Broadband Coverage; and actually, we had some on the committee that felt that one was redundant because we had already had a March 21st hearing. An April 5th, Fueling the Wireless Economy hearing; March 29th, Realizing Nationwide NG911; March 21st, hearing with the discussion draft, some of those bills were now in bill form; and Ms. Eshoo’s Dig Once bill, which has bipartisan support was a part of that; and then February 2, Reauthorization of the NTIA.

So it is time for us to stop talking and get bills in front of us and pass them and get to work. And I am going to yield first to Chairman Walden for questions.

Mr. WALDEN. I thank the gentlelady for her leadership on these issues but also for yielding, as I have another commitment I have to go to.

I just want to ask a couple of questions and, first of all, thank you all for your testimony and your shared commitment with us to get broadband out to all Americans: students, seniors, everybody in between.

Mr. Slesinger, in your testimony, I was intrigued, on page 3 you said, “Broadband deployment is not delayed by environmental impact statements. In fact, no broadband project was ever required to do one by the Federal Communications Commission.”

You are not really saying no broadband deployment project has ever been required to do an EIS, are you?

Mr. SLEINGER. That is correct. Many have had to do environmental assessments and some may have done——

Mr. WALDEN. Yes. So——

Mr. SLESINGER. Excuse me. Of the 50,000 Federal activities a year, there is only about a couple hundred EISs, and none of the ones that we could find in the FCC has never required a full environmental impact statement.

Mr. WALDEN. Yes. Reclaiming my time, because I think it is actually required through other agencies. Again, 55 percent of my district is Federal land, so I am somewhat familiar with this, and as I said, it is 69,341 square miles. By the way, Connecticut is about 5,544, not that we are counting. New Jersey, 8,722, Mr. Pallone.

But the point is, I run into this all the time on siting. We are trying to get broadband out there. We are trying to get three-phase power into—some of our communities have waited 3 years to get an EIS to do four power poles on BLM land, and so I think there
is an issue here with siting. I just think there is more there than what you represent in your testimony.

I want to go to Mr. Gillen. Thank you for your testimony as well. As you know, we have seen these situations with various Federal laws and State laws that have delayed. I know Mr. Shimkus will probably speak to this because it was in his district, I guess. 2016, a company was looking to expand by adding a 14-by-10-foot area of land adjacent to its existing facility in a parking lot. The study they were required to do took 5 months to complete and cost thousands of dollars.

Have you or Mr. Polka or anybody else on the panel who actually does deployment, tell us about the things you have run into. Tell us what you like about these bills. You have referenced some in the testimony, but your member companies and all, what are you seeing? Is this a problem or isn’t it? Because on one end of the panel we hear it is not a problem. On the other end we hear it is a problem. I sort of live in a district like mine firsthand. So, Mr. Gillen, do you want to start off?

Mr. Gillen. Thank you, Mr. Chairman. Your example is a good one. It is something we face every day throughout the country. Carriers are running into challenges that, particularly when we start talking about things like this, that to install 23 of these in a parking lot costs $173,000 in environmental and historic reviews and takes many months. We don’t think that makes any sense. There are times where it is appropriate to have those types of things—and Mr. Walden. Right.

Mr. Gillen [continuing]. But streamlining that Representative Shimkus and others are pursuing is the type of things that will actually expedite deployment now.

Mr. Walden. Could you say that again, that was in a parking lot?

Mr. Gillen. In a parking lot at NRG Stadium for the Super Bowl last year.

Mr. Walden. And it cost how much?

Mr. Gillen. $173,000 to site 23 of these.

Mr. Walden. Wow.

Mr. Polka, do your folks ever run into any siting problems that we could address?

Mr. Polka. Absolutely, Mr. Chairman. I have visited with members all across the country. Our members literally build into their budgets time and money because of how long it takes for attachments to poles to produce broadband to be approved and permitted and to move forward. Thousands and thousands of dollars where application fees are made for makeready, then additional engineering studies are made. Further requests for engineering studies, duplicating the process. The fact that a member company has to build in at least 6 months of time, at least, before they can move forward on a broadband deployment is actually causing broadband deployment not to be deployed in these most important areas.

Mr. Walden. Ms. Bloomfield?

Ms. Bloomfield. I would love to jump in on that as well. Just to cite a couple of examples, I have a company up in South Dakota that had a year-long delay because of needing to get some U.S. Forest Service permitting through. You are in South Dakota. Your
build time is very short, as Congressman Cramer knows. You have got periods of time where you miss that opportunity.

Mr. WALDEN. Right.

Ms. BLOOMFIELD. In Wyoming, we have had a state BLM office that actually wound up treating the broadband build like it was a pipeline. So they actually had to get bonding to go ahead and do the construction when it was really just a broadband conduit. So, absolutely, there are instances. And to my fellow panelist’s point, time and money is needed to be built into the process.

Mr. WALDEN. I know my time is about expired. I would argue, I am probably one of the few if only chairs of this committee that has ever actually been through a tower siting process and antenna sitting process. I was in the radio business for 20-plus years. And while I never climbed a tower, I was involved in a lot of that. So I share your pain.

And I don’t think any of your companies want to do environmental damage. I think it is a complete false argument that somehow we are going to run roughshod over the environment. I reject that. That is not the point. The point is that we can streamline the discussion process, the siting process in the Federal Government that is an analog process in a digital environment.

With that, Madam Chair, I yield back.

Mrs. BLACKBURN. The gentleman yields back.

Mr. Doyle, 5 minutes.

Mr. DOYLE. Thank you, Madam Chair.

I want to start by recognizing a great Pittsburgher on the panel and great CEO of the American Cable Association, Matt Polka. Matt, welcome. I think Matt will agree with me, most of us from Pittsburgh rarely root for the Philadelphia Eagles, but when they are playing the New England Patriots, we are all Eagles fans. I hope they win.

Mr. POLKA. Don’t forget the Steagles too, back in World War II.

Mr. DOYLE. That is right. Exactly.

So, Mr. Gillen, I want to make sure I just understood. You were holding that box up and said you don’t need any money from the Federal Government, just make it easier to streamline, deployment of that. And you are not suggesting that you are going to—your member companies would take care of the deployment in unserved areas in all of rural America or are you talking—are those little white boxes going to solve our problem in rural America if we just streamline the process?

Mr. GILLEN. We think there are two separate and important problems. This helps us drive 5G. It certainly will be in dense areas in cities and towns, but, no, it won’t solve the problem for unserved——

Mr. DOYLE. OK. I just wanted to clarify that, that this is not a solution to rural broadband.

And, secondly, are some of the impediments to deployment state and local issues or are they all Federal issues?

Mr. GILLEN. Absolutely it is a mix of both.

Mr. DOYLE. It is a mix of both. OK. Thank you.

I want to ask Ms. Hovis, in areas that are unserved or underserved we see municipalities, either through public-private partnerships or even on their own, provide broadband to their commu-
nities. And in some cases when a municipality offers broadband as an alternative to an incumbent that may be there, we have seen the incumbent actually lower prices. It has been better for consumers. But we are also seeing a number of states are passing laws to prevent municipalities from providing broadband or engaging in a public-private partnership. What effect do you think these state laws are having on broadband deployment?

Ms. Hovis. I think it is detrimental to deployment because, as I said earlier, it takes important players off the field, but it also stops a competitive dynamic from emerging. The cities and towns and communities where we have the most robust broadband and the most robust competition are places where some kind of competition has come into that market and incumbents have reacted to that competition and invest as a result.

I will say also that for smaller and rural communities that are unserved and underserved, sometimes the only entity that is willing to step up and invest is a community either by itself or through a public-private partnership, and I hate to think that we here in Washington would try to interfere with local collaborations and processes when we are seeing, frankly, a thousand collaborative processes bloom around the country.

Mr. Doyle. Thank you.

Let me ask everyone on the panel, and this is just a yes-or-no question, does anyone here on the panel believe that we can successfully deploy unserved areas in rural America or underserved areas without some sort of Federal investment, that it can just be done through streamlining regulation and making deployment easy, which I think is important too and we should be doing that. But is there anyone here that thinks that we don’t need to appropriate any money to solve this problem? Just yes or no.

Mr. Spalter. No. We need direct funding by a universal service funding mechanism.

Mr. Doyle. Thank you.

Mr. Polka. Agreed.

Mr. Doyle. Mr. Gillen.

Mr. Gillen. Funding would be helpful on a technology-neutral basis.

Mr. Doyle. So you agree that we need funding, though? I understand your technology.

Mr. Gillen. Yes, absolutely. Sure.

Ms. Bloomfield. Support is needed to make the business a case model in rural America.

Mr. Doyle. Thank you.

Mr. Slesinger. Yes, definitely needed.

Mr. Doyle. Thank you.

Ms. Hovis. I agree.

Ms. Swanson Katz. Yes, I agree.

Mrs. Blackburn. OK. And lastly, Mr. Gillen, we saw this memo that leaked out of the White House, the 5G memo that focused in detail on our network cyber vulnerabilities particularly when it comes to foreign actors and the proposal of nationalizing our wireless telecommunications infrastructure. I think many of us here on the committee on both sides of the aisle seems uninformed. I am concerned that the White House and the President have not fully
addressed and rejected this very troubling proposal. We heard some of that today.

That being said, the security of our nation's broadband issue is critical. And at the beginning of his tenure, FCC Chairman Pai rolled back a number of Commission items related to cybersecurity, including a notice of inquiry specifically questioning how the FCC could best secure 5G networks. I am concerned that rolling back these measures is part of what has caused so much concern amongst members of the National Security Council.

Mr. Gillen, I just want to ask you, do you think it is wise for the FCC to roll back cybersecurity initiatives such as this 5G notice of inquiry? I mean, if the relevant Federal agency cannot merely ask questions about how best to secure 5G networks, how can we hope to address this problem?

Mr. Gillen. Thank you, Congressman. It is a great question. Cybersecurity is critical to everything we do. If you don't have a safe and secure network, we are not serving the American people and we are not doing our jobs.

With respect to the specific question you asked, we think that cybersecurity is best handled through a partnership with the Department of Homeland Security. They are the experts in those we work closely with. And I think the White House proposal, I think Chairman Walden and all five FCC commissioners have characterized it very well, so I won't say anything further about that right now. But in terms of the cybersecurity, that is something we work on every day and we do need a partnership with the Federal Government to make sure that we understand the threats, and a lot of what this community and other committees have focused on information sharing is critical to doing that.

Mr. Doyle. Thank you. Thank you, Madam Chair.

Mrs. Blackburn. The gentleman yields back.

I will recognize myself for some questions, and I want to start with Mr. Spalter, Gillen, and Polka. You all talked a little bit about tax reform and how that would help with investment. And sometimes I think as we talk about the changes in regulatory relief and tax reform, people focus on big companies and not on the smaller companies. So if you would take just a moment and talk a little bit about how tax reform regulatory relief affects your companies in the deployment of broadband.

Mr. Spalter. Thank you, Chairman. They affect our companies both large and small across the board. I had the opportunity recently to visit with some of our smaller companies in western New Mexico, western Wyoming, Alaska, and Montana. And to a company, each of them have been elated by the idea that they are going to be able to invest more in deploying more broadband to unserved communities, invest more in research and development to be able to expand next generation networks, and also provide new incentives for their employees, even though they have not met many employees. This is a meaningful step forward and augurs well for the future of closing the digital divide.

Mrs. Blackburn. Great.

Mr. Gillen.

Mr. Gillen. I agree with Mr. Spalter. In terms of the wireless industry, it means we have seen promises of new jobs, we have
seen commitments to build out more networks and add capital expenditures, bring money back home. And really it does underscore the capital-intensive industries like wireless. This tax reform regulatory relief will make a real difference. Particularly for smaller carriers, a lot of the regulatory relief we are talking about—as my colleagues have said, they don’t have the staff to manage these processes, so any types of streamlining or standardization helps them actually do their day jobs and serve consumers.

Mr. POLKA. Thank you. As I said in my testimony, let’s take a count of the successes that exist. Our member companies certainly use private funds to deploy broadband, but the benefit of the recently passed tax act cannot be underestimated when you look at the investment that now our members as smaller internet service providers have to put back into their systems, which they are doing. I have heard from members all over the country who have said to me that the difference in the corporate tax rate will make more money available for the company to reinvest broadband serving now hundreds, thousands more homes that would otherwise be uneconomical to serve. So that has helped tremendously already to give a boost to smaller businesses, not to mention the deregulation that has already occurred.

For smaller companies, regulations affect them disproportionately. They have fewer customers per mile over which to pass that cost of regulation. When the Federal Government takes into account that there was a difference between small and rural and big and urban and allows for those smaller companies to be able to deploy sensibly and take into account the burden of regulation, it makes a big difference on getting rural broadband out there faster.

Mrs. BLACKBURN. Thank you all.

And, Ms. Bloomfield, I want to come to you now. We spoke briefly about some of the good things in Tennessee. I know north central Tennessee spent like a quarter million dollars on historical reviews and $14 million in investment just to build out this. And Mr. Welch mentioned 39 percent of rural America is without broadband, and I think people lose sight of that, that there is just not that access there. And in Tennessee, we were talking about the first round of grants, almost $10 million that has gone out, and we have got the Scott County Telephone Co-Op got $1.9 million. They are going to use that in Hawkins County. DTC Communications, $1.765 million to use in Smith and Wilson Counties, and Sunset Digital got $1.4 million to use in Claiborne and Hancock Counties to expand that footprint and to bring more people online, and that type investment we want to see.

At the Federal level, of course, we have got $4.53 billion that is there in the USF that is going to be over 10 years to expand this service, and $2 billion for rural broadband deployment that should come from the competitive reverse auction.

So I want you to talk just a little bit on specifics of how this serves to get more people online.

Ms. BLOOMFIELD. So, Chairman, I think you raise a really important concept, and that is coordination. How can we ensure that what is going on at the Federal level coordinates with what can happen on the state level? And I think that is where some of the things the committee is looking at, like accurate mapping and mak-
ing sure we know where the underserved and unserved areas are, so that we can focus those limited resources, whether they are universal service dollars. And we are pleased that the FCC is currently circulating an order that looks to restore some of the funding that had been subject to the budget mechanism, which will go a long way in terms of giving folks regulatory certainty. How do they know that they have got the resources to actually deploy? And you combine that with some State initiatives.

What Tennessee has done is really interesting. Minnesota has done something similar. Wisconsin has done something similar. How do you actually take all of these different pieces so that we can thoughtfully, as a country, build out to those consumers that actually have not had the opportunity to have access. CAPTA is going to be really important. We look at those areas, when that auction comes up, as an opportunity for my companies to potentially edge out into communities that are unserved that are neighboring their areas where they may have an opportunity to bring robust broadband like they have to their own incumbent areas out to those who are waiting for service. So we are hopeful that those rules will be helpful.

Mrs. BLACKBURN. Thank you.

At this time I yield Mr. Welch 5 minutes.

Mr. WELCH. Thank you very much.

I want to talk about two things. One is a bipartisan bill that I have with Mr. McKinley, and then second is this question of the rural broadband buildout. And by the way, thank you all for what I thought was very, very good testimony.

Mr. McKinley and I have a bill that would require the FCC to define, on an ongoing basis, what is reasonably comparable service and reasonably comparable prices in rural and urban America. And we have seen, from my perspective, an alarming approach by the current FCC chair that is essentially dumbing down, as I see it, with successes in rural America.

Ms. Bloomfield, could you just respond to your view about the value of having the FCC, on an ongoing basis, give a concrete and scientific answer to the question of reasonably comparable in rural versus urban areas? Would that be helpful?

Ms. BLOOMFIELD. As I mentioned in the statistics that we have in terms of the number of my carriers and what the capacity is, I think we do have to figure out how you ensure that particular consumers’ demands increase. The bandwidth demands that people are looking for grows exponentially. So how do we make sure that you are not creating two different services between rural and urban America, and how do you make sure there is comparability there?

Part of the issue that continues to be the underlying problem, however, is the high cost of deploying that network. So, for example, when you look at something like the ability of a rural provider to do standalone broadband for the consumer who simply wants the ability to access broadband, they may not want the telephone service, they may not want some of the other things that come with it. Right now, based on support—sorry. It is going to be very important, but it is going to take resources and it is going to take support from things like universal service.

Mr. WELCH. Thank you.
Now, Mr. Doyle asked the question that everyone said affirmatively we do need Federal funding, and I want to go back to that, because I have heard a lot about regulatory reform and I have heard a lot of good ideas. That makes sense to me. I have heard a lot, by the way, that the local efforts are very important, so what we do should enhance them, not diminish them. But bottom line, there has got to be money just like there was with rural electrification.

And, Mr. Gillen, in your written testimony, as I read it, you didn’t believe there was a need for Federal funding to deploy 5G. So if that is the case, would your folks be able to commit that you will be deploying 5G services at the same speed and pace in rural America as in urban America?

Mr. Gillen. 5G will start in dense areas throughout the country. A rural town in Burlington, Vermont, will see it. University of Vermont will see 5G. It really is to start dense. When you talk about reaching the unserved households, you are going to need money.

Mr. Welch. That is obvious, right? I mean, you go where the market is. And there is no expectation, on my part, that anyone who has shareholders and has some obligations to the shareholders would do anything different. There is a fundamental policy question that only Congress can answer. Are we going to show us the money in rural America.

So there is a bill that Mr. Pallone has that is based on a study that the FCC did saying that we really need $40 billion. And Mr. Walden raised questions about spending that wisely, and we want to do that, make sure it is done right. But of the panelists here, does that FCC figure, $40 billion for this buildout for reasonably comparable service in rural America, sound like a good number to you? I will start with you Jonathan, Mr. Spalter.

Mr. Spalter. Congressman Welch, there are numbers of studies that have indicated that more monies are needed for reaching ubiquitous access for Americans, a goal that we all share. Not necessarily agreeing with one or another set of numbers, what we all agree to is that we do need direct funding where there is no business case to deploy high-speed broadband, especially in unserved areas, and using universal service fund as the platform for doing so we know is most efficient and most administratively logical.

Mr. Welch. And even assuming we do the things that have been recommended with regulatory reform and local partnerships, the number that we are going to have to spend is in the billions of dollars. Does anyone disagree with that?

Mr. Spalter. No.

Mr. Welch. Ms. Hovis?

Ms. Hovis. I do agree. Unfortunately, it is far more costly to build in rural areas on a per-user basis. It gets more and more costly with lower density, and not just for capital costs, but also for operating costs, and that is the fundamental challenge that we face. But directing the funding there and making sure that the funding is well suited to the needs there, and the needs are the same in rural America as in urban and suburban America. We all need high speed. We need scalable networks that are capable of
growing over time. We don’t need second-rate services in rural America.

Mr. WELCH. My time is up. I want to thank the panel.

Mrs. BLACKBURN. The gentleman yields back.

Mr. Latta. No, Mr. Lance, you are recognized. Five minutes.

Mr. LANCE. Thank you very much, Chairman.

Mr. Spalter, in your testimony, you mentioned that finite Federal resources should be targeted to ensure that funding to unserved areas, that that funding is prioritized, and I couldn’t agree more with that. And I have introduced a resolution stating as much. Could you please expand on the importance of prioritizing Federal funds to unserved areas of the country, and are we able to learn from past mistakes related to this issue when we are deciding how best to spend Federal resources?

Mr. SPALTER. Thank you very much for the question, Vice-Chairman Lance. As stewards of Federal dollars of broadband providers in Congress, all of the American republic have to be very, very cautious about how we use those dollars, and we have to make sure that they are being used efficiently and to targeted purposes. And we are all focused on doing so in ways that will achieve those goals.

With respect to reaching unserved areas where there is no access to broadband. Those high-cost areas require a partner in government-directed funds using universal service fund methodologies is, we believe, the appropriate way to go. And there is no doubt that in order to fulfill the obligation that we have of closing the digital divide, thinking very carefully, as we are doing here today and I hope we are going to continue to do, of how we actually can expand that universal service budget to—universal service fund budget to meet this great goal of closing the digital divide is, I think, a great priority for all of this.

Mr. LANCE. And, Mr. Spalter, do you believe that this will require statutory change or can this be done administratively or will it be a combination of both?

Mr. SPALTER. I believe it can be a combination of both. It will be left to Congress to decide its commitment to, in fact, fulfilling this great goal we have of closing the digital divide. To do so we understand it is going to cost tens of billions of dollars. Universal service funds and the universal service fund platform in the direct funding model has been proven to be most efficient in doing so. And we think both administratively and through statute there are going to be mechanisms of actually achieving this goal, and we are looking forward to working with you in doing so.

Mr. LANCE. Thank you.

Would other members of the panel like to comment?

Yes, Ms. Bloomfield.

Ms. BLOOMFIELD. I would just like to jump in and say, when I look at my membership, it is a combination of universal service along with support, like the USDA has with our U.S. So you build the business case with universal service that allows folks to get the capital funding through things like USDA to actually build these networks. And the one thing I would say is going to be really important for us to be thinking about building future proof networks, to make sure that as we look at that underserved and those finite
resources, that we are using them to build networks that will last into the future.

Mr. LANCE. Thank you.
Anyone else like to comment?

Mr. POLKA. Congressman, I would agree. I would totally agree. There certainly is a need, as has been demonstrated in very hard to reach unserved areas where Federal funds can be very important to closing that aspect of the digital divide. But then as we look at past programs, whether it is at the reform of the Connect America Fund, which is focused on unserved areas ensuring that we are using reverse auctions to spend money wisely, these are good ideas to employ.

The last thing we want to do, as I said, is to discourage private investment, and one way you would do that, and you recognize this because of your resolution, is by permitting any situation where an unsubsidized internet service provider would have to face subsidized competition. That is a disincentive to further investment in deployment of broadband.

So, otherwise, I think you are right on target as it relates to focusing on areas where broadband is unserved. Let's make sure that we are not overbuilding the unsubsidized providers.

Mr. LANCE. So we have to be careful regarding subsidies and those nonsubsidized.

Mr. POLKA. Correct.

Mr. LANCE. Yes. Anyone else on the panel care to comment?
Yes, of course.

Ms. HOVIS. Congressman, my perspective would be that competition in this environment, as in any environment, gets better results. And if there is going to be public funding for broadband deployment, then offering it on a competitive basis so that the best situated, most efficient, perhaps most motivated, strongest set of partners are able to bid for that kind of thing, rather than offering it to a single set of companies where there is no competitive benefit. I think that is a proven strategy.

Mr. LANCE. I would agree with that.

Yes, Connecticut near New Jersey, although we have to be careful as to whom we root for in New Jersey.

Ms. SWANSON KATZ. My remarks concerning the New England Patriots are my own and do not reflect the nonpartisan views of the Connecticut Consumer Counsel.

I would just like to add that I think when you are talking about effective deployment of dollars, Federal, state, at any level, we have to recognize the very legitimate important role of state and local governments in maximizing those dollars, and I would just encourage you to think about including them in this and not excluding them.

And as an example, in the northwest corner of Connecticut, we have 26 municipalities, all nonpartisan, have banded together and are looking at models for how they can get a network deployed into their neighborhoods. And it is much more efficient to have 26 small towns working together in trying to do things like streamlining, permitting, and finding siting for these companies then and working with private sector as their model. So, keep that in mind, that
we will be much more effective if we allow municipalities and local leaders to work on this level.

Mr. LANCE. Thank you. My time has expired. My thanks to the entire panel.

Mrs. BLACKBURN. The gentleman yields back.

Mr. Pallone, you are recognized.

Mr. Pallone. Thank you, Madam Chair.

I think we all agree that better broadband can help provide more opportunities for more people. And to make ubiquitous broadband a reality, Democrats on this committee have been working on ways to make sure everyone, whether they live in rural areas or urban areas, has access to better and more affordable broadband services, and that is why we introduced the LIFT America Act that would provide $40 billion through a mix of reverse auctions and state programs. The bill would prioritize sending money to underserved areas and then funding underserved areas, anchor institutions, and building our next generation of 911 systems.

I wanted to start with Mr. Spalter. In your testimony, you discuss the need for Federal funding to support a more expansive broadband network. Can you just elaborate on why this is necessary?

Mr. Spalter. There is a demonstrable need in America today because of the challenging business case of delivering broadband to our unserved areas, our hardest to reach areas for a direct funding model. We understand that with best intentions American broadband providers are doing everything they can to extend the opportunities that broadband can bring, but there still are areas that are going to require a partnership with government. We know that the direct funding model, again, using platforms like Universal Service Fund, is the most efficient and administratively logical way to actually advance that goal. Direct funding has been and will be the principal and most sound funding model for actually making the reality of closing the digital divide actually happen.

Mr. Pallone. Well, thank you.

Over the past year, Republicans have eliminated our privacy rights online and destroyed net neutrality, and now they want to eviscerate our environmental and historic preservation laws, and they have done all of this in the name of broadband deployment. So I wanted to ask Ms. Hovis, have you seen any evidence that elimination of these protections will bring broadband to the millions of Americans who are not yet served?

Ms. Hovis. No, Congressman. I think that this will make for more profitable companies, whether better profitability leads to more deployment, particularly in areas that are not going to result in profits themselves. It is just not clear to me that there is a link between those things. I am concerned frequently that certain kinds of regulatory relief, deregulation, or other kinds of things are extended to the companies based on the premise that it will lead to new deployment in rural areas, but there is no commitment or enforceable mechanism for making sure that that actually happens. And given greater profitability, companies may or may not further invest.

Mr. Pallone. All right. Thank you.
I understand that the elimination of our environmental laws will not make a meaningful difference in connecting the millions of Americans that don’t have access to broadband, but I do think we need to better understand what the effect of some of these proposals would actually be. So I wanted to ask Mr. Slesinger, if I could, in your opinion, what would be the effect of carving up longstanding environmental protections as some of the bills before us would do?

Mr. SLESINGER. Thank you, Mr. Pallone. I think that the impacts can be very big. Broadband cells that we are talking about are not large environmental problems to this country. There are ways that the Forest Service and BLM on their lands could do a programmatic impact statement that would make it very easy to get any required Federal approval. It is not a major issue. We have programmatic impact statements for solar; we could do it easily for broadband. And I don’t think that is a big problem.

However, I think we are missing the issue here. And in many of these cases, it is state and local zoning and other things that are the problem. But I think the issue that I was talking about was mainly in the LIFT bill where we are talking about things well beyond broadband that can have large environmental impacts, and in that case, we need to keep the environmental laws strong and enforced so that people’s communities are not adversely affected by large Federal projects. Clearly, the FCC, as I said, has never required an EIS. There is not a big burden in this, but it is an excuse not to do unprofitable broadband in rural areas.

Mr. PALLONE. All right. Thank you very much.

I yield back, Madam Chair.

Mrs. BLACKBURN. The gentleman yields back.

Mr. SHIMKUS. Thank you, Madam Chairman. Thanks for being here on an issue that we seem to continue to talk about.

I am pretty proud of my co-ops, my small telephone companies in these areas that are trying to do just that. So there is a need for government involvement to provide some certainty financially because the return on investment is just not there. I always talk about the need on the Universal Service Fund to get that right and start parlaying that toward a broadband deployment.

But I think when we hear the testimony—I am sorry, I am bouncing back like a lot of members between two hearings. When we just beat up large corporations and their profitability, we really want to incentivize these small co-ops and these small family privately owned companies to do what they are trying to do right now, and then bring competition. This came from my local newspaper just January 28, not that I solicited it. And I would like to ask unanimous consent to submit this for the record.

Mrs. BLACKBURN. Without objection.

[The information appears at the conclusion of the hearing.]

Mr. SHIMKUS. It just talks about a community in my district, Highland, Illinois, that because they felt they were held hostage to the local provider, they built their own fiber system.

Now, the editorial is pretty good because it says there was just a report out, the Harvard University study, and they were fifth out of 27 public utilities that said you are doing a good job. But at the
end of it, it also says, but there are hidden costs when you have a government run system, right, the government is assuming some of those costs just on payroll and insurance and all those other things. So I just thought it was timely, and I wanted to submit that for the record because this does really segue into this debate.

And I do believe regulatory burdens slow the process up, and especially for these smaller companies, whether privately or public. So that is why we did the SPEED Act, which is an attempt to alleviate some of these additional reviews, especially in the environmental and historic reviews.

Now, the key to this small provision of this package is that it is in right-of-way and it is already being used. So it is not like new. It is not like a green field area. It is not like you are building over new territory untouched pristine land. It is using current right-of-ways and current systems and with a focus on size.

So, Mr. Gillen, can you elaborate on the challenges of the environmental and historic reviews that present for a deployment and how this bill might address those?

Mr. GILLEN. Absolutely. Thank you, Mr. Shimkus. Thank you for your leadership on this issue. I agree with everything you said. When you are talking about siting rights-of-way or siting devices like this, like your bill addresses, right now, that adds thousands and thousands of cost and months and months of review that we don't get back that is delaying deployment and increasing the cost of deployment. So absolutely the SPEED Act would address a core impediment we face.

Mr. SHIMKUS. Let me follow up. And as you follow actions going around through the states, is this similar to what some of the states are doing in this venue in this way?

Mr. GILLEN. Absolutely. I think the notion that we need both state and local governments to tighten how they do this, and we need the Federal Government. It is going to take both for us to do this.

Mr. SHIMKUS. Mr. Spalter, how important is it for communications, this whole debate, a policy to apply equally regardless of technology?

Mr. SPALTER. Technology and neutrality is extremely important as we think about the opportunities of actually closing the digital divide. We support any innovation that actually will be able to deliver broadband through whatever technology that most suits community and the institutions that support that community. What we also realize, though, is in the current moment that we are living in, that the most effective mechanism is to pull broadband fiber to as many communities as possible, and to do so needs creative partnership that has to exist between private investment, which is on the table, with a strong partner in government through direct funding.

Mr. SHIMKUS. And let me follow up with Ms. Bloomfield. Are small providers disproportionately impacted by regulations?

Ms. BLOOMFIELD. Part of that is just that they have fewer staff and they have fewer resources so, obviously, time you spend dealing with regulations you are not dealing with building broadband. But I also do want to commend you for your leadership, because I think the other initiative in your legislation is you recognize that
it is also about upgrading the network. So it is not just building it, but what you are trying to address is the fact that these networks are living and breathing networks, and they need to constantly be upgraded, so that certainly eases the process.

Mr. Shimkus. Thank you. And, Madam Chair, my time has expired.

Mrs. Blackburn. The gentleman yields back.

Mr. McNerney, you are recognized for 5 minutes.

Mr. McNerney. Well, I thank the chair for holding this hearing, and the witnesses.

I am going to start with Ms. Katz. I am concerned that the FCC’s recent action of eliminating net neutrality and Lifeline will actually open the digital divide. Is the FCC’s current lifeline proposal to cut 70 percent of the Lifeline program counterproductive to closing the digital divide and making broadband widely available to lower income Americans?

Ms. Swanson Katz. Well, I think the short answer to that is yes. The rationale for eliminating, severely curtailing the availability of the lifeline is that it would enhance broadband deployment, but I think that is comparing apples and oranges. This is a situation we are trying to put communication capabilities in the hands of our lowest income people, and to take those away from them, yes, absolutely will aggravate the digital divide, exacerbate it, and have negative impacts on many different populations. There is just a lot of talk of how lifeline phones are being used by the homeless to connect with family and find resources. And so it not only broadens the digital divide, but it has a ripple effect on the way we can see our most vulnerable citizens impacted.

Mr. McNerney. Thank you.

Ms. Hovis, I appreciate your direct testimony. I heard in some places the best way to deploy high-speed internet access that Americans deserve is to go to public-private partnerships, and you stressed that in your testimony. Can you provide us with some illustrations from your work regarding the effectiveness of public-private partnerships?

Ms. Hovis. Absolutely. Thank you, Congressman. I am seeing around the country hundreds, possibly thousands, of local initiatives with the willing and enthusiastic participation of the private sector in communities like Sublette County, Wyoming, where the local community is planning to deploy infrastructure that will be made available to their private partners and to business areas, to business districts where there is no adequate broadband at all, just speeds of a megabit or two, at best, in order to allow businesses to thrive in that part of the community. There are efforts like that underway in parts of Kentucky and parts of West Virginia, all over the country. And then even more ambitious and farsighted efforts, the city of San Francisco is considering a public-private partnership that is focused on ensuring that the 150,000 people in San Francisco who don’t currently have broadband, mostly because they can’t afford it, have access to adequate speeds, not one megabit speeds but the same kinds of speeds that you and I consider to be appropriate for our families. There is enormous creativity on both the public and the private side, and the private sector is willingly participating and engaged.
Mr. McNerney. Thank you. I cosponsored a bill with Congressman Luján that would help public-private partnerships get low-interest financing. Would that be helpful for building out access?

Ms. HoVis. Yes. I think it is an incredibly helpful approach, because what it does is it makes it feasible for a local community to have low-cost financing to build infrastructure and then potentially to make that infrastructure available for private sector use. We have all agreed on this panel that the cost of infrastructure deployment in certain markets is prohibitive. If there is a way that public's state, local, and Federal efforts can be targeted toward infrastructure, then allowing for private sector service provision, in some cases public service provision, it is going to differ from community to community, but that is a mechanism for ensuring that we get infrastructure to places where it does not exist in an adequate way.

Mr. McNerney. Thank you.

Mr. Spalter, I am going to move to cybersecurity. We have had security experts testify in front of this committee that many or maybe most of the IoT devices are unsecure, Internet of Things devices. By 2020, it is projected there will be 20 billion to 50 billion IoT devices in use. Should we be concerned about the risks that unsecure IoT devices are posing to our broadband networks?

Mr. Spalter. Thank you for the question, Congressman. It is a concern that all broadband providers share, that we have to be much more focused and increasingly focused on the resiliency, the security, not only of our wired networks, but also of our wireless networks. The Internet of Things is an opportunity of great promise for the economic productivity of our country.

The focus that we have been giving as a broadband community to this initiative is also being done in partnership with a broader set of colleagues in the internet ecosystem. Our cloud companies, our internet information technology companies, internet companies increasingly are joining to share the responsibilities with us to extend greater security for our broadband networks, including for the Internet of Things, and we are doing so in partnership with the Department of Homeland Security and other agencies of government that we have to work closely with to solve this problem.

Mr. McNerney. Very good. Well, I have a lot more questions, but I have run out of time, so I am going to yield back.

Mrs. Blackburn. The gentleman yields back.

Mr. Latta. Well, thank you very much, Madam Chair, for holding today's hearing. This is very, very important.

As co-chair of the Rural Broadband Caucus and co-chair of the Rural Telecommunications Working Group, access to high-speed broadband in rural areas is a top priority of mine. I believe Congress should facilitate the development of robust broadband networks by creating a regulatory environment, promotes competition, and encourages innovation. That is why I introduced a resolution I expressed to be sent to the House that broadband deployment should be competitively and technologically neutral. I have also introduced the Precision Agriculture Connectivity Act with Congressman Loebsack to help close the digital divide faced by the agricultural communities in rural America.
And, Ms. Bloomfield, if I could pose my first question to you. Agriculture operations generate significant value to the national economy and are an essential source of revenue in jobs in our rural communities. Today, modern high-precision farming requires access to high-speed broadband to support advanced operations and technologies that significantly increase crop yields, reduce costs, and improve the environment. My bill, the Precision Agriculture Connectivity Act, requires the FCC to recommend steps to obtain reliable measurements of broadband coverage in order to gain a better understanding of the true lack of access in America. It is my understanding that finding adequate, accurate broadband mapping and coverage management is nearly impossible.

And so, Ms. Bloomfield, in what ways would it be beneficial for the FCC to obtain such data for the purpose of deploying high-speed broadband on agricultural croplands in other rural areas?

Ms. BLOOMFIELD. So, Congressman Latta, I appreciate the question, and greatly appreciate the leadership that you have shown on a lot of these issues. Smart ag is truly the next frontier when we think about economic development vitality for rural America, and I think a lot of the initiatives you are looking at is how do you gather more of that granular data so that we can really look at the census track level and figure out where is the infrastructure and where is the void. Because we certainly know that you need to be able to see it, whether it is street level or whether it is literally on the cropland, in terms of where that infrastructure resides.

So I think that when we look at the FCC and some of the work that they have been doing in gathering 477 data and trying to take that data and figure out in a granular, transparent, and accurate way and measuring apples to apples—and the thing I always worry about is when you get different entities trying to measure, they are measuring different ways of measuring where that deployment is. So I think your focus on how do we coordinate, how do we actually aggregate this will go a long way in terms of seeing where we really need to focus some of our future energy and resources.

Mr. LATTA. Let me ask you just to follow up when you talk apples to apples and not apples to oranges here. What should we be looking at then to make sure that they are looking at the right data and, everyone is on the same page here and they are not looking at two different things, the same coming with two different answers.

Ms. BLOOMFIELD. So I think we saw a little bit during the stimulus where there was actually national broadband map that was built, but it was very inconsistent, and it wasn’t checked, so people were kind of putting in their own data. There was really no resource to basically say is this the real data, is there really coverage there. And as somebody who represents small carriers, I understand that there is always that competitive concern about what data you are releasing. But I also worry that if you have got an entity like NTIA looking at data and you have got the FCC and they are using two different measurements, two different land tracks, different speeds, I think the ability to actually kind of house it in one place where you have got the ability to be consistent, you have got the ability to be transparent, I think folks need to actually see as it gets developed, and you need to be able to have the ability
to check it. I think those are things that are going to be very important check posts as we go forward on that. But it is going to be the foundation for where we go in terms of future investment.

Mr. LATTA. Thank you.

Mr. Polka, there is legislation as part of our hearing today which I support that incentivizes 5G wireless deployment. I have also introduced a resolution setting the policy of competitive tech neutrality so the government isn’t picking winners and losers out there. Is the cable industry doing anything comparable to the 5G rollout with similar speeds in coverage?

Mr. POLKA. Comparable and surpassing when you look at the amount of broadband service that is being delivered by our members in rural America. I had the chance yesterday to hear from a number of members all over the country telling us what they are doing. I heard from one small company in eastern Kentucky, Big Sandy Broadband. They are delivering gigabit speed in eastern Kentucky. I heard from a company called Hickory Telephone, which is building fiber to the home in underserved areas, one of our members in western Pennsylvania. We have members all over the country that are providing gigabit service: 100 megabit, 200 megabit, 300 megabit service. So we are building that service as our customers and our community want us to do. And what we ask, and which is why we appreciate your resolution, that as we go forward as a country and we look at regulations that apply to helping broadband be deployed more effectively, that we do so on a competitive technology-neutral basis.

I can tell you we have a lot of area out there that I have visited personally with our members. It is amazing how much rural area there is out there. Not one company is going to solve these problems, which is why our policy needs to encourage competitive technology-neutral proponents. So, yes, we are providing the service. We are building the backbone that actually can help to deliver 5G service down the road as it comes farther out into our areas. So we are up to the challenge.

Mr. LATTA. Well, thank you very much. And, Madam Chair, my time has expired, and I yield back.

Mrs. BLACKBURN. The gentleman yields back.

Mr. LOEBSACK, you are recognized.

Mr. LOEBSACK. Thank you, Madam Chair. This is really great.

Normally, I would be asking questions earlier, but I was a little bit late. I had some things in my office I had to do, some meetings, but I got to hear from so many of my colleagues and all of you folks. And the first thing I want to say is I guess when we talk about the funding, making sure that we do have broadband in these rural areas. I represent about a fourth of Iowa, not quite as much. The State of Iowa isn’t quite as big as Chairman Walden’s district, he likes to remind me, but we have a lot of rural areas in Iowa, as you might imagine. But it is pretty clear to me that we have got to have some public funding. We have got to have a lot of private investment. There is no doubt. We have got to make sure we deal with regulations. Chairman Walden and I have worked together on that to make sure that small internet service providers in particular are not unfairly subject to too many regulations so they can actually put their resources into building out and making
sure that rural America is served, instead of simply filling out paperwork regulations that are unnecessary, that kind of thing.

So I think we actually have more bipartisan support, and I think the chairwoman would agree that we actually have some bipartisan support on a number of these issues here.

Mrs. BLACKBURN. Oh, yes. I am accustomed to hearing from broadband Loeb...ack.

Mr. LOEBSACK. That is right. Exactly. And thank you very much, Madam Chair, I do appreciate that.

And working with Representative Latta; we talked this morning earlier today. I didn't realize he was going to quite steal so much of my thunder, but really happy to work with him on the Precision Agriculture Connectivity Act. Very important, obviously, in my district in Iowa.

But, of course, related to what he was talking about with mapping, I actually did introduce, and with Mr. Costello, last year, the Rural Wireless Access Act. And we got it out of subcommittee, but the FCC paid close attention to that. That comes down, essentially, to I like to call garbage in, garbage out. If we don't have accurate maps, then we are not going to be able to make accurate decisions and good decisions going forward.

And so a lot of people from Iowa like to say we have a lot of common sense, but a lot of what is going on here is just common sense that, if we don't have accurate data, whether it is an agriculture or that being a subset of something larger, then we are not going to be able to make a decision, public policy decisions, or even investment decisions on the part of the private sector.

One last point on that. Chairman Pai last year, I did ask him because I had heard he had been to northwest Iowa. He drove from my home town Sioux City up to southern Minnesota, and he found out just how many problems there are in rural Iowa with dropped calls and all kinds of things, not to mention, actual broadband service as well.

So I just want to ask, I guess, that, Ms. Bloomfield, you have already pretty much responded to what this is all about, so I am going to skip you for a moment, if that is OK.

I would like to go to Mr. Gillen, talk about that issue, if you would, mapping issue and making sure that we have good data.

Mr. GILLEN. As you said, Congressman, thanks to your leadership, I think we have all listened and heard. And I think working with both national and regional carriers, we have worked with the FCC, that will hopefully have a better map to inform the mobility fund going forward. And, what that $450 million a year the FCC is starting to give out will do is hopefully start serving those areas in those communities that don't have service today, but the condition precedent to doing that is the data that you have been looking for, and that will start very soon.

Mr. LOEBSACK. Yes, the 477.

And, Mr. Spalter?

Mr. SPALTER. I would agree with Mr. Gillen. And I also want to thank you for your leadership in understanding that important management principle: what you can't measure, you can't manage. And this is particularly true with respect to delivering broadband.
Form 477 has taken great strides as it has been streamlined to provide more precise geocoding longitudinally and latitudinally for customers that actually have service. The next frontier is to try to do so with that kind of geocoding specificity for locations that don’t have broadband yet. And we believe that we have to think creatively and innovatively and slightly out of the box in thinking how to do so, as long as we have uniformity of data.

One idea is as the Census Bureau itself is looking at its own 2020 effort. Their resources might be profitably brought to bear to actually bring that longitudinal and latitudinal specificity to help pinpoint areas where broadband is not yet.

Mr. LOEBSACK. I would even suggest, mostly jokingly, that the FCC talk to all of us who have rural districts, because we can actually identify where the gaps are and where they are not, if we get around our districts like I do all the time.

Ms. Bloomfield, would you like to elaborate a little bit?

Ms. BLOOMFIELD. The only thing I would add is we talk about your initiative on some of the wireless front is that, just a reminder, that wireless needs wires so that those networks can’t even be built if you don’t have the backhaul out there. And as we have more and more need for capacity and more and more ability for you, if you are like me and I have gotten lost in northwest Iowa, the ability to pull over and actually pull up a map and see where you are, to do that data you actually need that infrastructure, so they really go hand-in-hand. They are complementary services, and I think they are going to all be very important for rural Americans.

Mr. LOEBSACK. Thanks to all of you. And thank you, Madam Chair.

Mrs. BLACKBURN. The gentleman yields back.

Mr. OLSON. I thank the chair. And welcome to our seven witnesses. A special welcome, Mr. Gillen. And please give our warm regards to your boss, Meredith Attwell Baker. As you know that family is a legend in Houston, Texas, iconic. So please give our regards.

I would like to brag about Texas and give perspective on Chairman Walden’s comments about square miles. He talked about Connecticut and Oregon. For the record, Texas is 268,597 square miles. Now, my district, Texas 22, is a small portion of that, 1,032 square miles. Very small. Basically, it is split halfway between rural and suburban. But because it is so close to Houston, all the challenges with the telecom industry, the 5G aren’t really applicable. But we did suffer a disaster. Hurricane Harvey hit us in August, and we weren’t alone.

After that, Puerto Rico was hit with Maria and the Virgin Islands as well, and Florida was hit by Hurricane Irma. And we have seen catastrophic wildfires in California and subsequent floods and just rushes of mud because of the loss of the cover. And when these disasters hit, as you all know, it is critically important that we get the communications infrastructure up and running as quickly as possible to give these communities the help they need to recover as quickly as possible.

And that is why I have this bill that is probably on top of your pile. It is H.R. 4845. It is called the Connecting Communities Post
Disasters Act. And this bill makes a simple step by allowing local communities to bypass long and unnecessary environmental and historic views and to replace damaged or lost towers and communication infrastructure. Not to have new ones but replace ones that are hit by disaster.

My first question is for you, Mr. Gillen. Houston made a strong effort after Hurricane Ike to bury their communications cables, and that was very successful. In fact, FCC Commissioner Pai came down a couple days after the storm hit and wowed about our buried cables, but he also noted we have a lot of cell towers that are exposed to the storm, especially where she came ashore there by Corpus Christi. How important is it for you to get communications up and ready following a disaster? How important is that to fight the disaster?

Mr. GILLEN. It is critical. And I think it is critical for, particularly, temporary facilities to be marshaled immediately, because as we learned in these most recent storms, that smartphones is what Americans need to reach public safety, to reach their families, to let people know that they are safe, and that cell coverage is critical. And that bill is very important because when the storm is over, our jobs are really just getting started. And it is how do we restore services, and not only restore them, but make them better, and that we have the opportunity in your district to start giving you the most advanced networks. And thanks to your bill we can start doing that more quickly.

Mr. OLSON. They go off the whole night for three straight nights, got all these warnings on a cell phone about tornado watches, flood warnings. That was valuable information that was coming, not from the phone lines, not from the TV, it was coming from the cell phones that my kids had, I had, my wife had, so it was very important.

Do you agree that it makes sense to suspend parts of the NEPA review when reconstructing these telecommunications towers, the infrastructure, just to suspend them a certain amount of time to get rolling quickly, as opposed to dragging this thing out month after month, year after year?

Mr. GILLEN. To bring back your economy, to bring back your constituents, absolutely, and I think it is a very targeted relief you are proposing.

Mr. OLSON. Mr. Spalter, Ms. Bloomfield, any comments on this issue about disaster?

Ms. BLOOMFIELD. I would just add that we had about four carriers that were in the path of Harvey, and I checked in with each one of them. Thanks to the ability to build these future-proof networks and the bury plant and the ability to put their switches underground, we actually, every one of my companies that were in the path actually were able to be up and running instantaneously, actually never even lost service, so very important.

Mr. OLSON. Mr. Spalter.

Mr. SPALTER. Congressman, your initiative to actually move forward with H.R. 4845 is meaningful, not only, I know, to citizens in your community which were served by companies in U.S. telecom like Consolidated and Smart City that were running towards danger to support the broadband needs, but also your initia-
tive is going to be meaningful for communities around the country, including places where I used to live near earthquake faults in California.

It is an absolute necessity that we as a Nation provide any mechanism to provide efficiencies so that broadband facilities can be put back into place to serve communities that have been affected by disaster, and your initiative is one such step, and we are grateful for it.

Mr. Olson. I am out of time, sir. I have one question before I yield back. There was discussion, some sort of concern, a little hostile, about the football game coming up, the Super Bowl, between the Patriots and the Eagles. I have a yes-or-no question for all the panelists. Are you all OK, do you have a problem with the Houston Astros being the world champs for 91 days now?

Mr. Spalter. As long as you legislate about it.

Mrs. Blackburn. The gentleman’s time has expired on that one.

Ms. Eshoo. Thank you, Madam Chairwoman. I am not going to get into that since I don’t have a dog in that fight, but good luck to all.

Thank you, Mr. Olson, for bringing up some of the issues that are related to disasters. And I know there was a response here, but I think that it is important to note that in the fires in northern California, in Napa and Sonoma Counties, the cell phones didn’t work.

Life is not tidy. Fires just don’t occur between the time people get up maybe 7 o’clock in the morning and retire at maybe 10 o’clock at night. Were it not for the public safety people actually going door-to-door and banging on doors in the middle of the night to arouse people to get them out of their homes, and they fled in their nightgowns, in their underwear, that was it, because the fires were even at the back of their houses and their roofs had started burning. And the other alert was dogs, their own dogs barking so much that it awakened them.

So we can’t live in a bubble that we have something, this one—which I think is wonderful. It is an American invention. It is a computer in our pocket. But we shouldn’t allow ourselves to dream on and say we have something, and it is going to alert everyone. So we have to think outside the edges of the envelope. But I want to thank the gentleman for raising that.

I want to go to Ms. Hovis and Ms. Katz. I have to go downstairs for another hearing of the Health Subcommittee and wanted to come back and ask a few questions here.

What do you think are the biggest impediments to deployment that you see in communities? It is certainly in rural communities. There are many specifics that belong to rural communities, but you spoke very clearly about the Hartford area. I was born and raised in Connecticut, so it is nice to have someone from Connecticut here, just outside of the Hartford area, actually. But I think what the committee needs is some pinpointing by you of specifics that will actually remove impediments to employment.

Now, I mean that as a softball question because I have legislation on it, and neither bill costs a dime. But anyway, to both of you, whomever wants to go first. You want to do it alphabetically?
Ms. HOVIS. Thank you, Ms. Eshoo. I couldn’t agree more about the importance of some of those particular issues. And we have talked a lot about rural challenges, but I would say that there are some very acute urban challenges that, unfortunately, get a lot less discussion. And I think sometimes they are not even recognized.

For example, small business areas in urban and suburban areas are remarkably less served in many cases than residential customers, and that is because the traditional footprint of the cable industry, to its credit, was to go to all of the residences in the community. That is great in most metropolitan areas because there will be a phone company provider and a cable company provider.

Ms. ESHOO. But you see all the advertisements on TV for the commercial site, come do business with us and we are the ones that can serve your small business the best. So——

Ms. HOVIS. If the infrastructure is not there, it is going to be incredibly costly to get the infrastructure there. A large business will be able to afford to pay whatever it takes, but a small business that can spend $79 or $99, $129 a month, there is simply not a business case for the private sector to build best-in-class infrastructure to them. That is not a slam toward the private sector. That is how private investment works, and the private sector is doing exactly what it should. But I think there is an undisputed conversation that should be had about the fact that small business areas struggle at remarkable levels, as do very low income neighborhoods, in many cases, because there is simply not business case for upgrade of the networks.

Ms. ESHOO. Thank you. I want to go to your——

Ms. SWANSON KATZ. Yes. If I could just——

Ms. ESHOO [continuing]. Seat mate there because I have 30 seconds.

Ms. SWANSON KATZ. Sure. If I could just add to that, the reason we focused on Hartford is that we were contacted by Hartford officials who had done a survey of their small businesses and found that they were unable, for the reasons Ms. Hovis was discussing, to connect to the internet because they were being quoted prices of $8,000, $9,000, $10,000, $30,000 for a street crossing. And, again, it is because of the high cost of the street crossings and things like that. So I don’t fault the industry, but I do note that that is a reality, and so that is where we need to make some progress.

Ms. ESHOO. Well, I think that that is very helpful.

Madam Chairwoman, I am going to ask unanimous consent that I be able to place the Harvard study that I referenced in my opening comments today that deals with communities being able to set up their own municipal broadband.

Mrs. BLACKBURN. So ordered, without objection.

[The information appears at the conclusion of the hearing.]

Ms. ESHOO. Thank you. Thank you to all of the witnesses. A good hearing. Important one.
It is very, very real. Places that businesses will not come into because they can’t get access to their suppliers, to their customers, provide training for their employees. You have got children that have to go to another county or to a local township or to a public library to get access so that they can do their school projects. We have got a lot of intellectual capital and a lot of economic potential in rural America that is being just ignored because of this rural urban divide.

And that is one of the main reasons that I was pleased to sponsor H.R. 4810, the Mapping Now Act. Because an important step to solving the rural broadband issue and expanding deployment is, first, accurately identifying where those unserved areas are. We need an accurate map to do that. And as some of you on the panel and I have discussed, just because one facility or one location in a census block says that there is coverage, that is not true. I can tell you from somebody that lives there, that is simply not true.

And so we need this legislation that directs the Assistant Secretary of Commerce for Communications and Information to create that national broadband map and reassert NTIA’s authority to do so. Many rural areas in Appalachia or Ohio find themselves on the wrong side of that urban rural divide.

We all know that high-speed internet is no longer a luxury; it is a necessity today for education, for business, especially in this technology-driven global marketplace. So I am going to continue to drive this issue very, very hard and working with my colleagues to break down the barriers to broadband deployment, particularly in rural areas.

Mr. Gillen, from CTIA’s perspective, in your written testimony, you mentioned that any new funding should also ensure that reaching areas unserved by wireless is reflected in the program’s objectives. In making funding decisions, better data is key, and rural broadband is no exception.

First of all, do you agree with my assertion that the maps are inaccurate, that we really don’t have a good definition of where the unserved and underserved areas are?

Mr. GILLEN. We certainly agree. We can and we need to do better.

Mr. JOHNSON. OK. All right. Do you have any suggestions on how we can ensure better data of unserved areas?

Mr. GILLEN. Absolutely. I think there are commercial tools available that we can start informing our process as well, but I think it really comes down to, we have to have a set idea of what we are measuring for? What do we decide broadband is? What is satisfactory coverage? Just a baseline of what we think we need to do and then measure it consistently across-the-board. And we think it is important to have one person in charge as you direct.

Mr. JOHNSON. I can tell you what satisfactory coverage is. Satisfactory coverage is coverage. That is what it is. It is access. But I appreciate your answer.

Ms. Bloomfield, could you please explain the benefits of having an accurate broadband map?

Ms. BLOOMFIELD. Absolutely. And I know we have all discussed this. And again, thank you for your leadership. But the ability to actually get granular, get clear, get transparent, and making sure
that you are coordinating, so when you talk about whatever Federal entity actually is controlling the mapping, the making sure that actually we are coordinating between all of those who are gathering data. So again, you are comparing. You don't have those inconsistencies, which I think have led to some of the confusion in the past. And I think the whole focus on the ability to access spectrum will also be very important in the future.

Mr. JOHNSON. OK. In your written testimony, Ms. Bloomfield, you mentioned the need for a single authoritative source that can provide accurate data at a granular level and on a consistent basis to help drive better-informed decision-making. So when updating the broadband map, should NTIA use Form 477 data? And is that data detailed enough? And if not, how would you recommend obtaining more granular detail?

Ms. BLOOMFIELD. So I think you make an excellent point, and I think 477 is the best data so far that really is collected from all broadband providers, which is going to be important so that you make sure that everybody that is in the pool actually is submitting the data.

Now, the problem is it is still self-reporting, so you are still going to have to make sure that there is some way to check to make sure that there is verification that what people report is actually true, other than driving through your district and actually doing it anecdotally. So I think that is going to be important. But I think having it spread across different entities is going to just lead to some confusion and not get the results that you are looking for.

Mr. JOHNSON. All right. Well, thank you very much.

I had a lot more questions but, Madam Chair, my time has expired. I yield back.

Mrs. BLACKBURN. The gentleman yields back.

Ms. CLARKE. I thank you very much, Madam Chairman. I thank our panelists for their expert testimony here this morning.

This Congress, I have had the honor of introducing and establishing the Congressional Smart City Caucus along with my colleague, Congressman Darrell Issa. As co-chair of this bipartisan Smart City Caucus, I know deploying broadband in our cities is critical.

We in Congress must do more to make sure that, first of all, the deployment is ubiquitous, but to address the 10 million Americans in urban areas who do not have access to broadband as defined by the FCC. And that is why I have cosponsored the Connecting Broadband Deserts of 2018, with my colleague, Congressman Bobby Rush. Under this legislation, the FCC will be tasked with reviewing the state of deployment in urban broadband deserts, and will be required to take action to help speed deployment if it is not occurring at a reasonable pace.

So, Ms. Katz, what types of issues—and we heard a little bit about this when the question was asked, I believe it was by Ms. Eshoo, what issues do we currently allow to fester when we assume that every part of a city is already connected? And what could we do to help address these issues?

Ms. SWANSON KATZ. Well, thank you for your leadership, and thank you for the question. It is an excellent one. I talked a little
bit about the homework gap. We have seen continuing impacts on small businesses. There is also in my testimony a report we did on that issue. And so we see that you continue the cycle of lack of opportunity for these areas when they don’t have access to broadband. This panel, it is delightful that it is almost undisputed that it is a utility at this point, that everybody needs access to it.

And so I think some of the most effective things we can do is to allow state and local governments to be part of the dialogue. It does concern me, as chair of the Intergovernmental Advisory Committee, when there is repeated references to removing barriers at state and local levels. And, in fact, state and local governments are trying very hard to move the needle on these things. For example, in Connecticut, we have been working for years on a single pole administrator, one-stop shopping for connecting to utility poles. That is one of the things that is most expensive.

We are also working, it is very important for smart cities, dig-once policies, how can we coordinate on the digging up of streets. These are very important but very complex issues, but these are some of the initiatives that state and local governments are working on.

Ms. CLARKE. Very well.

Ms. Hovis, did you have something that you wanted to add with respect to this, a concern?

Ms. HOVIS. I would say just that from the smart city standpoint, and the smart communities, because we are going to have smart counties and smart rural areas as well, the infrastructure is so critically important. And as long as a divide persists and who has access to the best infrastructure, then as services in a smart community environment move on to the infrastructure more and more, there will be less access by some members of the community.

So our risk here is that the digital divide, rural/urban, and that that impacts low income folks and that impacts small businesses will get more and more pronounced over time. We can’t double down on the existing divide.

Ms. CLARKE. The other concern that has been flagged and part of this conversation is one of cybersecurity. So that if we are talking about smart cities and we are talking about gaps in coverage, would any of you speak to what having those vulnerabilities could mean from a national perspective?

Ms. BLOOMFIELD. I would be happy to jump in. I have the opportunity right now to serve on the FCC CSRIC working group talking about, what is the importance of protecting those networks. And one of the things that we think is really important is to ensure—I have 850 carriers across 46 states. People tend to think of the large carriers, but we need to make sure that the small carriers have the ability to protect their networks, because sometimes it is the assumption that, you know, where the networks are vulnerable is where the problems will actually happen.

So we are spending actually a lot of time in resources this year educating our small network operators on how to protect their assets, how to protect their consumer assets. And that is going to be really important as we move on to the Internet of Things.

Mr. SPALTER. And if I could as well, I applaud your efforts to make our city smarter, and I also applaud your efforts to make our
broadband infrastructure for our cities and all of our communities safer, more secure. We at USTelecom are taking that mandate very, very seriously. We have recently launched a small and medium business initiative to make sure that, not just our largest companies, but also our smallest companies, as Ms. Bloomfield said, who share a vulnerability, can actually do incident response, reporting, and information sharing much more effectively.

But our enemies in this domain are getting smarter and more wily by the day. We have to think of this as not just a challenge carried by broadband providers, but by the entire internet ecosystem.

Ms. CLARKE. The ecosystem.

Mr. SPALTER. We have to join in common cause in doing so.

Ms. CLARKE. Very well. I yield back, Madam Chair.

Mrs. BLACKBURN. I thank the gentlelady.

Mr. Guthrie, you are recognized.

Mr. GUTHRIE. Thank you very much. Sorry, I have been bouncing between a couple of hearings today, so I apologize.

But I did hear Mr. Johnson’s questioning. And I understand there were some other questions about mapping. And I know that is what we are talking about, and the fact that we have to get more granular data and the 477 may not give enough information.

So this is really to the providers, so for Mr. Spalter and Ms. Bloomfield, the questions. Given the need for service providers to protect the proprietary asset information and our need as policymakers to get more granular broadband availability information, is there even a pathway forward to get to a street-level understanding of broadband service availability that meets both needs? I will just start with Mr. Spalter.

Mr. SPALTER. Technologically, I think there is a pathway forward. The technology is not only being deployed by our Federal Government, particularly by the FCC, but also by those that are being advanced by the private sector. I think that this is an opportunity going forward to think about how we can actually streamline and make a uniform approach to a mapping exercise so that we are not merely identifying addresses, but actually geocoding longitude and latitudinally relevant locations where we need to deliver broadband. Which is why I said earlier, first, that it is fantastic via H.R. 4810. You and Mr. Johnson are working to come up with creative solutions going forward, but also knowing that the FCC is going to be driving this process forward. To the extent the NTIA is going to be involved, it needs to meaningfully coordinate with FCC to avoid duplication and, therefore, confusion. And also, we collectively have to think about other assets can be put on to the table, including, as I mentioned, whether the Census Bureau can use its resources to help map and locate, again, longitudinally and latitudinally, areas where there are not institutions, residences where there is not yet broadband access.

Mr. GUTHRIE. OK. Thank you.

Mr. Gillen.

Mr. GILLEN. Thank you for the leadership on this issue to bring more attention to it. I think we are seeing progress. I would echo Mr. Spalter’s comments. I think it is important we marshal all resources, and it is going to take a partnership of all of these compa-
nies and the government to figure out how best to do this. But I think a lot of that, as Mr. Spalter said, are right on track.

Mr. GUTHRIE. Thank you.

Ms. BLOOMFIELD. And if I would just add, we talked a lot about streamlining. The one thing I would encourage is that we don’t look at creating multiple burdens so that you are not having small companies like the ones I represent having to do onerous reporting to three or four different agencies. So, again, that coordination is going to be important.

Mr. GUTHRIE. Are there mechanisms you would put in place that would relieve that burden?

Ms. BLOOMFIELD. I think it is actually helpful to figure out a way to designate who takes the lead. Not dissimilar to some of the other efforts that the committee has been looking at is how do you actually designate where that point is and agree to kind of one form of process, one form of data to be collected. And then certainly a challenge process so that folks can ensure that the data is accurate.

Mr. GUTHRIE. OK. Thanks.

Mr. Polka?

Mr. POLKA. Completely agree. Mapping is essential. We have to know where we need to build. There does need to be a partnership. There is no question about it. Whatever technological means that we can determine to help better determine where broadband is necessary, but ultimately this is going to come down to information from the provider.

In the hardest-to-reach areas, you are going to have small companies that do have very, very small staffs, very few people. The people that they employ are the ones that are literally climbing the poles and serving the customers at the counters. They don’t have deep legal staffs, nor regulatory staffs. So for them to take the time to fill out the information that is required is a burden. So that has to be factored in. Certainly, that self-reporting is important and essential as a piece of how we determine where broadband is and isn’t as part of the mapping process. But this has to be, I think, a much broader, deeper discussion on what is the baseline of information that we want to obtain, how can we obtain it, and who will be the providers to help provide that information.

Mr. GUTHRIE. From some of the previous mapping efforts, the SBI mapping that the NTIA administered from 2009 to 2014, what are some of the deficiencies and maybe lessons learned that can be applied? I only have about 45 seconds. So the providers can go as you want to go. But what are the deficiencies in that and what should we do different?

Mr. POLKA. I would say paperwork. It is as simple sometimes as paperwork. When you have forms to fill out, again, by small companies who do not have the background, the regulatory, the legal background, even then determining more particularly census block, census tracks, obtaining the data, the cost of the data to even populate the maps, it is extremely difficult for small companies to accomplish. It is vital, but here, again, it has to be part of a public-private purpose to deliver that information.

Mr. GUTHRIE. Thank you very much.

My time is expired, and I yield back.

Mrs. BLACKBURN. Mr. Collins, you are recognized for 5 minutes.
Mr. Collins. Thank you, Madam Chair. I would like to thank you also for just holding this hearing and having such a diverse group of witnesses.

Broadband access, as we all know, is important to our rural communities as our reliance on the internet continues to grow. Unfortunately, some states like New York are now working to complicate this issue, but we will set that aside for a second, and say I am at least glad to see some bipartisan bills here as the subject of this committee hearing.

And as we focus on infrastructure, the inclusion of broadband is something that I bring up again and again. It is not just roads and bridges and airports. Sixty-five percent of my district, eight counties, very rural, lot of dairy farmers, are certainly underserved.

My bill, H.R. 4798, is the bill that considers inventory of assets for the Communication Facilities Act of 2018. Let’s know what we have got. Let’s at least make it easier for some of the smaller carriers. Somebody, when we introduced this, made the comment, “Well, don’t the big guys already know what we have got?” And maybe they do, maybe they don’t. It never hurts to make it easier, but certainly some of the smaller suppliers, I think, may be those that end up coming into some of my rural communities, if they can see some value.

So, maybe specifically, Mr. Spalter, I will ask you. As common sense as some of this is, I am presuming you would support such an inventory of assets, and could you speak to how that might help?

Mr. Spalter. It is not only common sense, but it is music to our ears when the Federal Government wants to actually try to identify and map its assets. Great. And we encourage that to happen.

I would also say that we know that when and as that mapping takes place and as inventories are done, we will be able to deliver more broadband more efficiently with the speed to market that will be much more effective. When our Federal infrastructure and assets are connected to broadband, they became more cost effective, safer, and have longer lifespans. So this is an important initiative that you are undertaking, and we applaud your effort for thinking it through, and we are going to support you.

Mr. Collins. Good. Thank you.

Mr. Gillen?

Mr. Gillen. I think this is something actually both big and small companies don’t know where those assets are, so I think it is a critical resource to be able to know when you are trying to deploy, particularly trying to deploy as quickly as you want to deploy, where we can and can’t go. So I think it is a critical transparency vehicle for us to be able to start building faster.

Mr. Collins. Yes. Ms. Bloomfield.

Ms. Bloomfield. I was also just going to commend you for keeping it technology neutral, which I think is really going to be very important as we actually assess the assets.

Mr. Polka. Finally, I would just say access to technology is important. Particularly for a smaller company where you have fewer customers per mile, but the cost of technology that you need to deploy the same mile of broadband is just about the same, whether you are in rural New York or in the middle of Manhattan.
So having access to additional resources for small businesses is extremely important. In fact, I am not aware of any other idea like that before that has existed where such information would be made available to smaller companies. So we certainly appreciate the idea and really look forward to working with you on it.

Mr. COLLINS. So, Mr. Gillen, you brought your 5G device in. Is this even more critical as we are going to have a lot more 5G devices hanging out there than we are the big towers.

Mr. GILLEN. Absolutely. And I think when you talk about Federal assets, there is the post office, there is the Federal building in town, and it is critical for us to go in town and know exactly where we can start. Because if we want to win the 5G race against China and others, we need all the information we can get.

Mr. COLLINS. Do any of the other witnesses care to make a comment? I was going to say if not, but go ahead.

Ms. SWANSON KATZ. Yes. No, I think it is incredibly important to know where the assets are, where the broadband is, what is available to consumers. And I think it is also important that it be independently verifiable, because I think it is important for the public to know that they can rely on the data and it's transparently available.

Mr. COLLINS. We will make sure it is accurate.

Thank you, Madam Chair. I yield black.

Mrs. BLACKBURN. The gentleman yields back.

Now to the patient Mr. Cramer.

Mr. CRAMER. I have patience. I am not sick. But thank you. And by the way, Madam Chair, thank you for the hearing. And thank all of you for your testimony, for being here. And it really didn't require any patience at all. This is really quite interesting to me and fascinating. So I appreciate everybody being here.

I have to admit that sometimes when I hear about these sparsely populated states like Vermont and their digital divide, I start feeling a little guilty, because when I look at North Dakota, it is hard to claim a divide. Now, there are some places, but we have over 90 percent of our population that has 100 Mbps or more, and 93 that are over 25. So while there are still a few spots, our folks do a great job.

And, Ms. Bloomfield, you know well that, and this is one of the concerns I want to get to here with regards to some of this policy, that many of your members in North Dakota were broadband before broadband was cool. They were efficiently using Federal support funds to build out broadband long before it was mandated by either tradition or policy. And one of the things I worry a little bit about, as we talk about, and I support, let's get to unserved before underserved. That is really important. We want to have that bridge. It would be kind of crazy to have an interstate that if they decided to gravel for a couple miles in Montana or something. But as each generation comes and the demands get greater in places like North Dakota, where it is not just education, it is not just health care—huge, really huge—other business, really important, access to market is really important. But even safety, environmental safety, SCADA systems that have to work on our oil pipelines and our gas pipelines and, of course, our big transmission
lines as we generate a lot of electricity. All of that will require up-
grades.

And so as we talk about the efficient deployment of Federal
funds, I want to make sure that we have protections for upgrading
as well. Does that make sense? Maybe I will start with you, Ms.
Bloomfield, to comment, and anybody else that would like to.

Ms. Bloomfield. You are absolutely spot on. And again, thank
you for your leadership on all of these issues. And I think people
are always surprised that North Dakota actually has probably one
of most fiber-rich states in the country, because when you look at
that land mass, it is pretty amazing. But in part, when you are
really that rural, you actually see what broadband can do to kind
of narrow that gap that geography creates. So the ability to do tele-
medicine, the ability to actually bring communities together, to do
economic development. And then when you had the oil industry
coming in, the ability to make sure that that economic enterprise
was absolutely able to be supported.

So the fact that people get so focused on building and they forget
about the fact that you have got to maintain that network, other-
wise, down the road, you don’t have anything but a capacity that
is limited by what it was when it was actually built. So the ability
to live and breath.

The other thing that I would tout, particularly in a State like
North Dakota, is the ability of the carriers to collaborate with one
another. They have created DCN, a State fiber network, the ability
for them to realize that all boats rise. If they are able to build that
infrastructure out further, all of the carriers in the State actually
benefit from it, and the State itself benefits from it.

Mr. Cramer. Well, I might, just to add a couple of statistics for
others to comment, there are only three states that have less popu-
lation density than North Dakota, but there are 20 states and ter-
ritories that actually have less connectivity than North Dakota, so
it can be difficult.

But I also wonder, some of these other states have a lot of Fed-
eral lands, and we have been talking about that. We do not. We
have some, but not a lot. It is not a barrier for us. I think state
policy does matter. And while I agree that communities ought to
have some competitiveness about how they—and some control over
their own regulation, there should be a minimum standard that
makes sure that the country is connected as well.

But Mr. Spalter, you wanted to comment?

Mr. Spalter. Well, I couldn’t agree with you more that the cost
of maintaining and upgrading networks for underserved areas is
only escalating. It is a multiplier of what the bill costs actually are.
And we know that particularly as we are seeing this extraordinary
spike in the data that is being put through these networks from
an increasingly small number of internet companies that are send-
ing video to customers around the country, that this is even becom-
ing more profound.

So I completely agree with your insight but also your initiative
via 4832 to not only think through opportunities to serve commu-
nities that have been impacted by disaster, but also to better serve
communities that already have broadband.
Mr. Cramer. Yes. Well, I think we have certainly learned some things in the last year that can be helpful in; that, so why not apply it across the board and avoid special circumstances.

Anybody else?

Mr. Polka. I would just offer, sir, when you talk about upgrades, it is really, really important to remember how these upgrades are accomplished. One of the things that I mentioned in my comments were about this sexy issue of pole attachments. It is incredibly important when you have either—whether it is an attachment to a pole or a conduit, it seems like our policy is any time something new happens to the pole or the conduit, that is a new starting point for a long application process, for fees and other things of that nature, rather than saying, how can we simplify this process? One Touch Make Ready, simplifying this to make sure that we get attachments on the poles, internet lines, through the conduits to get broadband out there faster. So I hope you factor that into your thinking as well.

Mr. Cramer. Another reason not to nationalize anything.

And with that, I yield back.

Mrs. Blackburn. The gentleman yields back.

This hearing is so popular today we have uc'd Mr. Tonko onto the committee for his questions. The gentleman is given 5 minutes.

Mr. Tonko. Thank you, Chair Blackburn. Thank you, Ranking Member Doyle, for hosting this hearing today.

I hear from constituents across my district all the time on the need for broadband expansion. I was excited to see that the ACCESS BROADBAND bill included in today's discussion, which I have sponsored, is part of the focus. But I fear that we don't have the time to have an in-depth discussion on many of these important issues.

I am proud to have worked on this legislation with Congressman Leonard Lance, and thank the bipartisan group of Members who have cosponsored the legislation, including eight members of the Energy and Commerce Committee who have worked together and agreed that this is an issue worth supporting.

I also want to thank Jonathan Spalter with USTelecom for your call to action to move forward on vital bills like ACCESS BROADBAND that offer responsible solutions. I have engaged with industry and many organizations and believe this is a bill we can all work on together and support.

Chair Blackburn and Ranking Member Doyle, I ask that as we move forward, we take a closer look at pieces of legislation like ACCESS BROADBAND that have strong bipartisan support. Let's have a discussion on what we can improve and let's move the bills forward.

H.R. 3994, the Advancing Critical Connectivity Expands Service, Small Business Resources, Opportunities, Access, and Data Based on Assessed Need and Demand, or ACCESS BROADBAND—that acronym took a bit of work—would establish a coordinating office for Federal broadband resources. It would use existing resources to streamline management of Federal broadband resources across multiple agencies and simplify the process for small businesses and local economic developers to access them.
Broadband internet access is often the difference between success and failure for students doing homework, job seekers training for a new career, doctors reading a medical scan, or entrepreneurs starting a small business. However, to date, the Federal Government has done a poor job of tracking broadband deployment.

Currently, there is no comprehensive system that tracks where Federal dollars are going and how the funding is impacting communities. Investments are made with little accountability and oversight on behalf of the taxpayer.

So, Ms. Hovis, can agencies do a better job of coordinating Federal resources? And what are some of the current problems we see with a lack of coordination?

Ms. Hovis. Congressman, I think coordination would be exceptionally helpful. It is obviously not a simple matter in any large organization, whether public or private, but it would be helpful, not only because we would be collecting better data of all types and knowing exactly how public funds are being spent and the impact they are having on the broadband environment, Federal Government is a big buyer of services and so its dollars are being spent to deploy infrastructure in certain places and to make it more economical in other places. It would be helpful from that standpoint, but it would also be helpful with things like—and I think many of my colleagues have spoken to this sort of thing—knowing where public assets are and knowing how public assets can be used.

An example of this would be that there is at the state and local level, I think, some confusion among private companies, but also departments of transportation about whether assets built with Federal funds for transportation purposes can be used, excess capacity can be used for broadband purposes, whether public or private.

Clearing up some of that confusion, having coordination among different levels of government and among different government entities would be enormously helpful and timesaving.

Mr. Tonko. And, obviously, that coordination could unlock more broadband development?

Ms. Hovis. Yes, I think it could. That information is always going to be better, and lack of information, like a map that is insufficiently granular, or lack of information about what different agencies are doing and spending makes it just that much harder to plan in an efficient and pragmatic way.

Mr. Tonko. I have a question for both you, Ms. Hovis and Mr. Spalter. Can we better coordinate to simplify the process for companies, for small businesses, and local economic developers to access Federal resources?

Mr. Spalter. Well, I think we can. And I must say, Congressman, that the ACCESS BROADBAND Act is an innovative step towards unlocking that opportunity. Not only do you recognize at its core that we have to do better in managing and streamlining and making more efficient Federal broadband resources, but the more that our smaller enterprises can have a greater understanding of how those resources are being directed and how they are being managed, there will be opportunities to create even more efficiencies for broadband deployment and for their participation in that process.
And so we are very grateful for your insight, but also your foresight in making sure that we can do better in unlocking the opportunities of managing our Federal resources in a more efficient way.

Mr. Tonko. Thank you.

And, Ms. Hovis?

Ms. Hovis. I totally agree. And I would just add to that that it is critically important, obviously, that those assets and resources were built for particular purposes having to do with the agencies that built them and their critical mission. And so it is critical that no asset is ever compromised by a secondary use, as important as these secondary uses are. Transportation, public safety, all of these kinds of infrastructure assets have that first primary use. But subject to protection of that use and security and so on, there is enormous potential value of this kind of coordinated planned approach.

Mr. Tonko. So I would assess that the Federal Government, knowing where it spends on broadband and understanding the impact of this spending, are going to provide a lot of direction as we go forward.

So were you going to add——

Mr. Spalter. I am just agreeing with you, sir.

Mr. Tonko. OK. Thank you. Thank you so much to our witnesses too, and thank you for allowing me to participate.

I yield back.

Mrs. Blackburn. The gentleman yields back.

And seeing that there are no further members——

Mr. Doyle. Madam Chair?

Mrs. Blackburn [continuing]. Asking questions—yes, Mr. Doyle, you are recognized.

Mr. Doyle. I would like to get unanimous consent to enter a few things into the record. A press release from PCCA on today’s hearing, an Axios story on the National Security Council’s plan to nationalize 5G networks, the PowerPoint slides and memo discussing that story, and a letter from Tipmont REMC.

Mrs. Blackburn. Without objection.

[The information appears at the conclusion of the hearing.]

Mr. Doyle. Without objection.

Mrs. Blackburn. And pursuant to committee rules, all members have 10 days to submit questions, and we would ask that you respond in 10 days to those questions.

Without any further business coming to the subcommittee today, the committee is adjourned.

[Whereupon, at 12:35 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]
January 29, 2018

The Hon. Greg Walden
Chairman
Committee on Energy and Commerce
UNITED STATES HOUSE OF REPRESENTATIVES
Washington, D.C. 20515

The Hon. Frank Pallone
Ranking Member
Committee on Energy and Commerce
UNITED STATES HOUSE OF REPRESENTATIVES
Washington, D.C. 20515

The Hon. Marsha Blackburn
Chairman
Communications and Technology
Subcommittee
Committee on Energy and Commerce
UNITED STATES HOUSE OF REPRESENTATIVES
Washington, D.C. 20515

The Hon. Michael Doyle
Ranking Member
Communications and Technology
Subcommittee
Committee on Energy and Commerce
UNITED STATES HOUSE OF REPRESENTATIVES
Washington, D.C. 20515

RE: Closing the Digital Divide – Broadband Infrastructure Solutions

Dear Chairman Walden, Chairman Blackburn, Ranking Member Pallone, and Ranking Member Doyle:

On behalf of the American Cable Association (ACA) and its nearly 800 members from across the country, I would like to thank you for your leadership and focus upon the challenges of providing 21st Century broadband to all corners of this nation. Over the past year the ACA has been meeting with policymakers on both sides of the Hill and both sides of the aisle to discuss how to address consumers’ needs for broadband infrastructure.

As we review the list of legislative ideas the Committee is considering, some mirror what our members consider priorities, and others reflect concepts we have discussed with the Subcommittee. ACA has members who operate in rural communities, suburban neighborhoods, and some who were devastated by the rash of natural disasters this year. Consequently, the array of bills before the Subcommittee impact many of our members in varying ways. However, we all share the view that taking steps to promote broadband upgrades and deployment in unserved areas is important.

From reading the list of measures before the Committee it is clear that you too understand what it takes to bring broadband to all Americans. While all have some merit, we particularly support the resolution introduced by Chairman Latta that any Infrastructure legislation to promote broadband Internet access or communications facilities deployment should treat all broadband and communications facilities in a competitively and technology neutral manner. We also support Vice
Chairman Lance's resolution expressing the sense of the House that broadband funds may not be used where there is an existing broadband provider. Both of these principles are foundational to our organization, and ones that must underlie any legislation because they will maximize consumer welfare, increase economic growth, and make communities throughout the country thrive.

H.R. 4813, introduced by Rep. Ryan Costello, would direct the GAO to conduct a study on the complementary role of unlicensed spectrum in assisting with Internet traffic management and the potential for Gigabit Wi-Fi service in spectrum bands below 6 GHz. This is yet another good idea. As for additional legislation, we urge the Subcommittee to examine the approaches I will discuss in my testimony on January 30th. We believe it will enable you to bridge the digital divide sooner and with more sustainable results.

We know there are many other good ideas being considered by the Subcommittee from Members representing all regions of the country and the ACA looks forward to working with you and each of your colleagues to develop a broadband network package of ideas ready to include in whatever Infrastructure Initiative the Congress undertakes.

Thank you for the time and leadership on these issues that are vital to ACA's members.

Most respectfully yours,

Matthew M. Polka

MMP/gb
January 30, 2018

The Honorable Marsha Blackburn
United States House of Representatives
2123 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Blackburn,

Thank you for the opportunity for CTIA to testify today before the Communications and Technology Subcommittee on “Closing the Digital Divide: Broadband Infrastructure Solutions.” We appreciate and support your focus on facilitating investments in mobile broadband, and more specifically for 5G, the next generation of wireless services.

CTIA strongly believes that changes to infrastructure policies, like siting reform, will clear the path for winning the global race to 5G. CTIA supports legislation, like those bills being considered before the Committee, that remove regulatory barriers, spurs investment, and unleashes innovation.

We look forward to continuing to work with this Committee to enact legislation that achieves these goals.

Regards,

Meredith Atwell Baker
President and CEO
Dear Chairman Blackburn:

I am writing to express appreciation for the Subcommittee's attention to the important topic of broadband deployment and its upcoming hearing, "Closing the Digital Divide: Broadband Infrastructure Solutions." The cable industry agrees that broadband is a crucial driver of a vibrant economy and global competitiveness. In the last two decades, American consumers have witnessed enormous advances in the power and reach of Internet networks. The key ingredient for this expansion and growth has been the extraordinary level of private network investment by private companies, which has produced consistent increases in the capacity and speed of fixed and mobile broadband networks. Collectively, all U.S. broadband providers have invested $1.5 trillion in capital over the last twenty years to build out infrastructure and robust broadband networks. Cable networks now span more than 1,700,000 miles in total and include more than 490,000 route miles of fiber-optic cable, enough to circle the globe 19 1/2 times. In 2008, only about 16% of Americans had access to Internet service of 10 Mbps downstream. Today, 85% of U.S. homes are passed by providers offering broadband connections capable of 300 Mbps and faster speeds, and speeds keep growing.

Despite such success, we recognize that there are still some parts of the country — most often in less dense, often geographically remote areas — where market forces alone have been insufficient to date to drive the deployment of terrestrial broadband networks. We welcome the Committee's examination of this issue, and its consideration of measures that can help advance our country's goal of extending the benefits of Internet technology to all. In particular, we applaud the Committee's commitment to technological-neutrality in removing regulatory burdens that impede the effectiveness of private capital investment, and to its due attention to reaching Americans in unserved households. We are confident that such "common sense" approaches will assist all broadband providers in extending their networks, will help the government promote greater efficiency and accountability in broadband support programs, and
will result in tangible benefits for all citizens and the American economy.

The cable industry looks forward to working with you on the Subcommittee on pending legislation and other creative means of encouraging broadband deployment.

Sincerely,

Michael K. Powell
January 30, 2018

The Honorable Marsha Blackburn
Chairman
Subcommittee on Communications and Technology
Energy and Commerce Committee
U.S. House of Representatives
2125 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Mike Doyle
Ranking Member
Subcommittee on Communications and Technology
Energy and Commerce Committee
U.S. House of Representatives
2322A Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Blackburn and Ranking Member Doyle:

Competitive Carriers Association (CCA)\(^1\) commends the Subcommittee for its continued focus on improving and streamlining mobile broadband infrastructure deployment policies. Today’s legislative hearing marks an important step towards advancing legislation to accelerate mobile broadband deployment and connect all Americans regardless of where they live, work, or play. As I testified before this Subcommittee last March, to deploy broadband networks to meet today’s exponentially growing demands for mobile data, and to lead the world in 5G, action to address broadband infrastructure deployment challenges cannot wait.

Congress must act swiftly to enact policies that support deployment and close the digital divide that plagues rural America. CCA supports many of the legislative initiatives the Subcommittee will discuss today, and encourages policymakers to continue to find bipartisan solutions to the challenges of deploying critical broadband infrastructure in a timely manner. Specifically, CCA appreciates the Subcommittee’s focus on creating policies that:

- Foster creation of coverage maps using reliable, standardized data;
- Streamline deployment, including targeting and eliminating historical and environmental reviews where redundant or not necessary;
- Provide certainty for the application process, including streamlined and standard applications, timing, and appropriate fees;

\(^1\)CCA is the nation’s leading association for competitive wireless providers and stakeholders across the United States. CCA’s membership includes nearly 100 competitive wireless providers ranging from small, rural carriers serving fewer than 5,000 customers to regional and national providers serving millions of customers. CCA also represents associate members including vendors and suppliers that provide products and services throughout the mobile communications supply chain.
Promote mobile broadband in croplands and ranchlands to support precision agriculture; and,
Provide dedicated funding for mobile broadband in rural areas.

Barriers to infrastructure deployment and unnecessary complexities reduce certainty, increase costs, and delay broadband deployment, especially in rural areas. These policy solutions will reduce burdens on carriers and government resources alike. CCA supports efforts to streamline review and facilitate mobile broadband deployment to meet Congress’s mandate for reasonably comparable services in urban and rural areas. As the legislative process moves forward, CCA thanks the Subcommittee for its efforts and stands ready to support policies that accelerate mobile broadband deployment.

Please do not hesitate to contact me with any questions.

Sincerely,

Steven K. Berry
President & CEO
Competitive Carriers Association
January 29, 2018

The Honorable Marsha Blackburn  The Honorable Mike Doyle
U.S. House of Representatives  U.S. House of Representatives
2266 Rayburn House Office Building  239 Cannon House Office Building
Washington, DC 20515  Washington, DC 20515

Dear Chairman Blackburn and Ranking Member Doyle:

The Telecommunications Industry Association (TIA), the leading trade association for global manufacturers, vendors, and suppliers of information and communications technology (ICT), applauds you for holding a hearing this week on broadband infrastructure solutions. TIA has reviewed the bills under consideration for this week’s hearing and supports those listed on the attachment. We continue to evaluate the remaining bills for possible support at a later date.

More generally, as the Subcommittee’s work to advance broadband deployment continues, we urge you to address regulatory obstacles to broadband facility siting. Companies face numerous obstacles at all levels of government, including complete moratoria, zoning rules and arbitrary conditions, differential treatment of new entrants, delays, exorbitant site inspection and application fees, and unsustainable annual rents. Several of the proposed bills would help address these challenges.

Moreover, we urge that any infrastructure package include dedicated funding to address each of the following challenges:

- Reaching unserved areas with the FCC minimum level of 25 Mbps down / 3 Mbps up;
- Increasing service to underserved areas with 100 Mbps / 10 Mbps; and
- Maintaining U.S. long-term preparedness with service of 1 Gbps / 50 Mbps.

TIA thanks you again, and we look forward to working with you on these important issues. For more information, please contact Dileep Srijari at 703-907-7715 or by email at dsrijari@tiaonline.org.

Best regards,

Cinnamon Rogers
Senior Vice President, Government Affairs
Telecommunications Industry Association

Att: List of TIA-supported legislation
Cc: House Communications & Technology Subcommittee members
TIA-Supported Legislation

TIA supports the legislation listed below. We continue to evaluate additional bills for possible support at a later date. We look forward to working with the Subcommittee and the sponsors in refining and moving these bills forward.

Scheduled for consideration on January 30, 2018:

- H. Res. 687 (Bilirakis) – federal, state & local policies should be reconciled to maximize investment
- H. Res. 689 (Hudson) – funding should be prioritized to states that streamline small cell siting rules
- H. Res. 691 (Latta) – broadband deployment should be competitively and technologically neutral
- H. Res. 701 (Flores) – any FCC review under NEPA, NHPA, etc. should be limited to the actual area of impact
- HR 2479 (Pallone et al) – LIFT Act, $40 billion for broadband in total, use of reverse auctions, 100 Mbps required except for 25 Mbps in remote areas
- HR 4287 (Lujan et al) – $5 billion broadband finance program for loans, guarantees, and lines of credit
- HR 4795 (Walters) – common application forms and master contracts for federal siting
- HR 4798 (Collins) – inventory of federal assets for telecom infrastructure
- HR 4802 (Kinzinger) – tracking of applications to install broadband on federal property
- HR 4810 (Johnson & Guthrie) – broadband mapping by NTIA
- HR 4813 (Costello) – WIFI STUDy Act – GAO study on offloading to unlicensed
- HR 4814 (Eshoo et al) – Community Broadband Act re: no state restrictions on municipal broadband
- HR 4817 (Long) – PEERING Act, NTIA grants for Internet Exchange facilities in areas without one, allows E-Rate and rural health funds to be used for that purpose
- HR 4832 (Cramer) – allows high-cost USF support to be used in disaster areas
- HR 4842 (Shimkus) – SPEED Act, a House companion to the Wicker/Cortez-Masto Senate bill that waives certain requirements for small cell deployment
- HR 4845 (Olson) – waives NEPA and NHPA requirements regarding construction, rebuilding, or hardening systems in re: major disasters
- HR 4847 (Brooks & Matsui) – streamlining reviews by the Department of the Interior and the Forest Service; also creates 270-day shot clock and “deemed granted” remedy for federal siting applications

Other:

- HR 2425 (Huffman & LaMalfa) – Public Lands Telecommunications Act – separate accounts for agency siting fees, requiring that such fees are reinvested into broadband
- HR 4800 (Eshoo & McKinley) – Broadband Conduit Deployment Act re: “dig-once”
Tim Day  
Senior Vice President  
U.S. Chamber of Commerce  

January 30, 2018  

The Honorable Marsha Blackburn  
Chairman  
Communications and Technology  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515  

The Honorable Michael Doyle  
Ranking Member  
Communications and Technology  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515  

Dear Chairman Blackburn and Ranking Member Doyle:  

The U.S. Chamber of Commerce applauds the Subcommittee for taking up the critical issue of ensuring access for all Americans to the internet at its hearing entitled “Closing the Digital Divide: Broadband Infrastructure Solutions.”  

The Chamber created the Technology Engagement Center (C_TEC) to promote the role of technology in the economy and to advocate for rational policies that drive economic growth, spur innovation, and create jobs. C_TEC convenes a High Tech High Impact working group that demonstrates how technology addresses and solves everyday problems impacting Americans including those in the small business, rural health, and agricultural sectors.  

In order to train America’s future workforce, technologies such as autonomous vehicles, unmanned aircraft, and smart cities must become a reality. High-speed broadband deployment will be critical as we expand the adoption of advanced technology to rural, tribal, and underprivileged Americans.  

High-speed broadband powered in part by 5G will be an economic game changer for the American economy. As Federal Communications Commissioner Brendan Carr recently remarked at the Chamber, “if we get the right policies in place, 5G could mean $275 billion in network investments, three million new jobs, and a half a trillion dollars added to the GDP.”  

Additionally, rural telehealth is expected to generate tremendous savings for Americans with regard to lost wages, hospital costs, and travel expenses.  

Evidence is also mounting that internet connectivity is becoming increasingly necessary for entrepreneurs in today's economy to compete. C_TEC found that 84% of small businesses are using at least one digital platform to provide information to customers.1

Unfortunately, millions of Americans still do not have access to high-speed internet. Although a lack of funding in high-cost areas is part of the problem, many archaic siting rules on the federal, state, and local levels hinder the ability of internet and other wireless providers to expand service.

For example, localities are still charging providers revenue-based fees designed for larger cell towers to site small cells—which are about the size of a pizza box—on public rights of way. These types of fee structures exacerbate the high cost of deployment given the large number of small cells required to power 5G technologies and can be cost-prohibitive.4

Such innovation-stifling siting rules do not only affect the wireless industry. Local governments have charged cable operators duplicative siting fees, which are not based on costs, to install broadband in the same place that cable lines already exist.5

C_TEC believes that now is the time for Congress to step in to alleviate the permitting and other siting burdens, which are getting in the way of deploying broadband necessary to rural, tribal, and other underserved Americans.

While some laws like FAST-416 enable federal permit streamlining of some broadband projects, much more is needed to ensure the economically-vital deployment of internet service to all Americans. C_TEC looks forward to working with you on advancing legislation to expand broadband service that would power the technology that has a high impact on our economy and jobs.

Sincerely,

Tim Day
Senior Vice President
C_TEC U.S. Chamber of Commerce

Cc: Members of the Subcommittee on Communications and Technology

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5 City of Eugene v. Comcast of Oregon, 359 Ore. 528 (2016).

6 See 47 U.S.C. § 4370m
January 29, 2018

The Honorable Marsha Blackburn  
Chair, House Subcommittee on Communications and Technology  
2125 Rayburn House Office Building  
Washington, DC 20515

Dear Chairman Blackburn,

The Power and Communication Contractors Association (PCCA) represents contractors, manufacturers, and distributors who build and repair America’s power and communications infrastructure, including electric transmission, distribution, and substation facilities and broadband, telephone, and cable television systems. PCCA appreciates the bipartisan approach you and members of the subcommittee are taking by offering a range of legislative measures aimed at deploying broadband across America more effectively.

PCCA strongly supports the Communications Facilities Deployment on Federal Property Act of 2018 (HR 4795), which would require executive agencies to use common application forms and cost-based application fees for easements, rights-of-way, and master contracts for placement of communications facility installations on federal property.

The Streamlining Permitting to Enable Efficient Deployment of Broadband Infrastructure (SPEED) Act (HR 4842) is another bill of interest to PCCA. The legislation would exempt certain broadband facilities in existing rights-of-way from environmental reviews under the National Environmental Policy Act (NEPA) and exempt facilities from environmental reviews where other facilities on the same property have already been approved. Importantly, the SPEED Act would also exempt expansion of broadband facilities from NEPA reviews if the expansion of the broadband facility is no more than 30 feet in any direction.

Although PCCA does not have an official position on policy regarding “one-touch make-ready” (OTMR), we support HR 4858, the Clearing Local Impediments Makes Broadband Open to New Competition and Enhancements (CLIMB ONCE) Act, which would confirm state authority to adopt an OTMR policy for pole attachments. Allowing states to enact policy that would allow approved broadband and power contractors to perform this work would avoid multiple reviews and truck rolls for each of the providers already attached to the pole.

PCCA also appreciates the resolutions offered by Reps. Leonard Lance (R-N.J.), Bob Latta (R-Ohio), Richard Hudson (R-N.C.), and Gus Bilirakis (R-Fla.), which promote policy to ensure permitting and regulatory requirements are coordinated to maximize the benefits that come with broadband investment and to focus broadband deployment on underserved areas.

PCCA looks forward to helping advance these and many other bills under consideration by the subcommittee through the legislative process this year, and we thank you for your leadership on these important issues.

Best Regards,

Jim Dillahunty, President
January 30, 2018

The Honorable Marsha Blackburn
Chairman, Subcommittee on Communications and Technology
2266 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Blackburn:

On behalf of the Wireless Infrastructure Association (WIA), I would like to express strong support for your efforts to lower barriers to broadband infrastructure deployment so that communities across the country can enjoy the benefits that wireless broadband can bring. WIA is the principal organization representing the companies that build, design, own, and manage wireless facilities in the U.S. and throughout the world. Our mission is to expand wireless broadband everywhere.

Today’s hearing, entitled, “Closing the Digital Divide: Broadband Infrastructure Solutions,” will examine very important legislation to help deliver next generation wireless to all Americans, especially communities that lack access to high-speed internet. These measures will begin to narrow the digital divide.

WIA is especially pleased to support H.R. 4842, the Streamlining Permitting to Enable Efficient Deployment of Broadband Infrastructure (SPEED) Act of 2018, introduced by Rep. John Shimkus. This measure takes a balanced approach to infrastructure siting and would promote responsible and sustainable broadband deployment by encouraging collocation and respecting the rights of local communities. H.R. 4842 would exempt expansion of broadband facilities from environmental and historic preservation reviews if the expansion of the broadband facility is no more than 30 feet in any direction. Currently, any site expansion to accommodate additional equipment associated with the collocation of a new antenna or transmission equipment still requires a full environmental and historic review, even if the expansion is as little as one foot. This unnecessary requirement is expensive and time consuming. For example, one of our members has reported that an estimated 95 percent of all their historic reviews are triggered by expansions. And the fees associated with these reviews can quickly accumulate. By exempting expansions of 30 feet in any direction and streamlining the process of siting small wireless facilities in a responsible manner, H.R. 4842 will have a significant and positive impact in reducing delays and expenses.
WIA is also pleased that several measures designed to speed up infrastructure siting on federal lands have been introduced. Bills introduced by Rep. Mimi Walters, Rep. Adam Kinzinger, and Rep. Susan Brooks would address several problems infrastructure builders face with trying to site wireless facilities on federal property. The federal government owns or administers nearly thirty percent of all land in the U.S., as well as thousands of buildings, many of which are in desirable locations. Broadband providers currently face significant challenges when working to secure access to federal lands and buildings. These bills will help reduce those challenges and could help bring broadband access to rural areas.

Thank you again for your efforts and the efforts of your Subcommittee in lowering or eliminating many of the obstacles faced in deploying broadband infrastructure. WIA remains committed to delivering next generation wireless broadband to all communities and looks forward to working with this Subcommittee on how to close the digital divide.

Sincerely,

Jonathan Adelstein
President and CEO
Wireless Infrastructure Association
Encrypted Traffic Analytics

Introduction

The rise in encrypted traffic is changing the threat landscape. As more businesses become digital, a significant number of services and applications use encryption as the primary method of packet exchange. While encrypted, malicious activity, such as web-based encryption traffic, has increased by more than 10 percent year-over-year. In the next few years, 80 percent of web traffic will be encrypted.

Encryption technology has enabled both greater privacy and security for businesses but also for attackers who use the same technology to conduct their business. Malware, social engineering, and web applications rely on well-embedded encryption mechanisms. As a result, security and threat detection approaches have evolved to detect encrypted traffic. Threat actors have adapted these same techniques to evade detection and to achieve their malicious objectives. Figure 1 shows the dramatic increase in encrypted traffic.
Visibility across the network is getting increasingly difficult and our traditional means of detection cannot assume that data is available for inspection. We need to be able to simultaneously assess how much of our digital business is protected and unprotected by encryption while also assessing what traffic is malicious and what is benign.

Gartner believes that half of malware campaigns in 2019 will use some type of encryption to conceal malware delivery, command and control activity, or data exfiltration.

Figure 1. Economic impact of malicious attacks

Table 1 describes the new threat vectors that are based on the nature of encrypted traffic.

Table 1. New threat vectors based on nature of encrypted traffic
Challenges of encrypted traffic security

The majority of organizations today do not have a solution to detect malicious content in encrypted traffic. They lack the security tools and resources to implement a solution that can be deployed throughout their network infrastructure without slowing down the network.

Traditional threat inspection with bulk decryption, analysis and reencryption is not always practical or feasible, for performance and resource reasons. In many cases, however, advanced analytic techniques can be used to identify malicious flows for further inspection using decryption techniques.

On any given day, no one knows how much of their digital business is in the clear versus encrypted. If traffic is encrypted, the encryption is typically done to meet compliance requirements that mandate specific security policies.

Overview of Encrypted Traffic Analytics

Traditional flow monitoring provides a high-level view of network communications by reporting the addresses, ports and byte and packet counts of a flow. In addition, intraflow metadata, or information about events that occur inside of a flow, can be collected, stored and analyzed within a flow monitoring framework. This data is especially valuable when traffic is encrypted, because deep-packet inspection is no longer viable. This intraflow metadata, called Encrypted Traffic Analytics, is derived by using new types of data elements or telemetry that are independent of protocol details, such as the lengths and arrival times of messages within a flow. These data elements have the attractive property of applying equally well to both encrypted and unencrypted flows.

Using these data elements or intraflow telemetry to identify malware communication in encrypted traffic means Encrypted Traffic Analytics can maintain the integrity of the encrypted flow without the need for bulk decryption (Figure 2). Table 2 lists the benefits of using Encrypted Traffic Analytics.
Encrypted Traffic Analytics
- New data elements for encrypted traffic

Encrypted Traffic Analytics focuses on identifying malware communications in encrypted traffic through passive monitoring, the extraction of relevant data elements and supervised machine learning with cloud-based global visibility.

Transport Layer Security (TLS) is a cryptographic protocol that provides privacy for applications. TLS is usually implemented on top of common protocols such as HTTP for web browsing or Simple Mail Transfer Protocol (SMTP) for email. HTTPS is the use of TLS over HTTP. This is the most popular way of securing communication between a web server and client and is supported by most major web servers.

Encrypted Traffic Analytics extracts four main data elements: the sequence of packet lengths and times, the byte distribution, TLS-specific features and the initial data packet. Cisco's unique Application-Specific Integrated Circuit (ASIC) architecture provides the ability to extract these data elements without slowing down the data network.

- **Sequence of Packet Lengths and Times (SPLT)**: SPLT conveys the length (number of bytes) of each packet's application payload for the first several packets of a flow, along with the interarrival times of those packets.
  
  SPLT can be represented as an array of packet sizes (in bytes) along with an array of times (in ms) representing the time since the previous packet was observed.

- **Byte distribution**: The byte distribution represents the probability that a specific byte value appears in the payload of a packet within a flow. The byte distribution of a flow can be calculated using an array of counters. The major data types associated with byte distribution are full-byte distribution, byte entropy and the mean/standard deviation of the bytes. For example, using one counter per byte value, an HTTP GET request, "HTTP/1.1", can be calculated by incrementing the corresponding counter once for the "H" then incrementing another counter twice for the two consecutive "T"s and so on. Although the byte distribution is maintained as an array of counters, it can easily be turned into a proper distribution by normalizing by the total number of bytes.

- **Initial Data Packet (IDP)**: IDP is used to obtain packet data from the first packet of a flow. It allows extraction of interesting data such as an HTTP URL, DNS hostname/address and other data elements. The TLS handshake is composed of several messages that contain interesting, unencrypted metadata used to extract data elements such as cipher suites, TLS versions and the client's public key length.

Appendix A shows a detailed table of new data elements.

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Encrypted Traffic Analytics - Components

Enhanced NetFlow
In the NetFlow architecture, data is transmitted from exporter to collector in sets of records. Each record in a data set has the same format, which is specified by its template. The data record consists of a series of NetFlow information elements or "fields," and a specific ID value is assigned to each field. The ID values for information elements may be globally defined and archived by the Internet Assigned Numbers Authority (IANA), or they may be enterprise specific and defined by individual organizations.

NetFlow templates use several globally defined elements administered by IANA. Some of the global elements, such as IP addresses and Layer 4 port numbers, form a familiar 5-tuple that is used as a unique flow identifier (flow key). Additional elements are used to report basic packet/octet statistics and timestamps.

These globally defined elements are enhanced with vendor-specific (Cisco vendor ID) data elements described earlier and in Appendix A. The vendor-specific data elements provide insights into threats and vulnerabilities in encrypted traffic using Cisco Stealthwatch Enterprise®.

Stealthwatch Enterprise
Cisco Stealthwatch Enterprise uses NetFlow, proxy servers, endpoint telemetry, policy and access engines, traffic segmentation and more to establish baseline "normal" behavior for hosts and users across the enterprise. Stealthwatch can correlate traffic with global threat behaviors to automatically identify infected hosts, command and control communication and suspicious traffic.

Stealthwatch maintains a global risk map - a very broad behavioral profile about servers on the Internet, identifying servers that are related to attacks, may be exploited, or may be used as a part of an attack in the future (Figure 3). This is not a blacklist, but a holistic picture from a security perspective. Stealthwatch analyzes the new encrypted traffic data elements in enhanced NetFlow by applying machine learning and statistical modeling. The global risk map and Encrypted Traffic Analytics data elements reinforce using advance security analytics. Rather than decrypting the traffic, Stealthwatch uses machine learning algorithms to pinpoint malicious patterns in encrypted traffic to help identify threats and improve incident response.

Figure 3. Stealthwatch Enterprise Multi-layer Machine Learning
The Security Insight dashboard on the Stealthwatch Management Console (SMC) provides a view of affected users identified by risk type. An expanded dashboard provides detailed information regarding the top risk escalations and relative threat exposure. Table 3 lists some high-risk threats that use encrypted command and control communications.

Table 3. Examples of high-risk threats using encrypted command and control

Upon discovery, a malicious encrypted flow can be blocked or quarantined by Stealthwatch. Policy-driven remediation actions via pxGrid using Cisco Identity Services Engine (ISE) with Cisco TrustSec® and Software-Defined Access (SD-Access) simplify and accelerate network security operations.
Cryptographic assessment

Encrypted Traffic Analytics also identifies encryption quality instantly from every network conversation providing the visibility to ensure enterprise compliance with cryptographic protocols. It delivers the knowledge of what is being encrypted and what is not being encrypted on your network so you can confidently claim that your digital business is protected. This cryptographic assessment is displayed in Stealthwatch and can be exported via APIs to third-party tools for monitoring and auditing of encryption compliance (Figure 5).

Figure 5. Cryptographic assessment

Feature support

Cisco’s newest networking equipment, starting with Cisco IOS® XE 16.6, will support an enhanced NetFlow with Encrypted Traffic Analytics capability.

1. Compatible Cisco equipment supporting enhanced NetFlow with Encrypted Traffic Analytics:
   • Switches: Cisco Catalyst® 9300 Series (starting with the Cisco IOS XE 16.6.1 release) and the 9400 Series (starting with the Cisco IOS XE 16.6.2 release)

2. Stealthwatch gains additional machine learning and statistical modeling capabilities (in release 6.9.2) to analyze enhanced NetFlow with Encrypted Traffic Analytics.
Efficacy and Cisco research findings

In experiments based on real-world data, we were able to achieve over 99% accuracy with 0.01% false positives (only 1 false positive for every 10,000 TLS connections) seen. This was based on a large sample of real-world HTTPS sessions as described in Cisco research findings.

Conclusion

In summary, the network is now an even more advanced security sensor, capable of detecting threats in encrypted traffic. A Cisco Digital Network Architecture-ready infrastructure turns the network into an end-to-end sensor and enforcer that detects, contains and prevents emerging, sophisticated security threats.

Appendix A

Data Elements Extracted by Encrypted Traffic Analytics.

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence of Packets</td>
<td>A series of packets that make up a TLS session.</td>
</tr>
<tr>
<td>Length and Time (LTP)</td>
<td>The length and time of the LTP packet.</td>
</tr>
<tr>
<td>Time Difference</td>
<td>The difference in time between packets.</td>
</tr>
<tr>
<td>Initial Data Factor (IDF)</td>
<td>The initial data factor in the LTP packet.</td>
</tr>
<tr>
<td>TLS Version</td>
<td>The version of TLS used in the session.</td>
</tr>
<tr>
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<td>TLS Record Extensions</td>
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References

1. Gartner: Security Leaders Must Address Threats from Rising SSL Traffic
3. NSS Labs: TLS/SSL: Where Are We Today? The Encrypted Web Part 1 – An Upward Trajectory
4. Identifying Encrypted Malware Traffic with Contextual Flow Data, Blake Anderson and David McGrew, AISec ’16
Congress of the United States  
Washington, DC 20515  
January 23, 2018

President Donald J. Trump  
The White House  
1600 Pennsylvania Avenue NW  
Washington, DC 20500

Dear Mr. President:

A year ago, a bipartisan coalition of 71 Members of Congress wrote to you advocating for the inclusion of rural broadband connectivity investments in your infrastructure proposal. We strongly believe that high-speed Internet access is essential to ensuring rural residents are not left behind in this increasingly interconnected world.

We are concerned about recent reports that your forthcoming proposal may not include investments in rural broadband connectivity. We write today to reiterate our support for the proposal to include funding specifically for rural broadband deployment in unserved and underserved areas.

In the Information Age, the Internet offers endless possibilities. Unfortunately, these possibilities are not afforded to many rural Americans. This digital divide between urban and rural America is significant and demands a focused and aggressive response.

Rural communities must have adequate broadband infrastructure to attract and retain businesses and human resources, close the homework gap for students and teachers, open innovative and convenient pathways to telemedicine for seniors and providers, and help farmers increase efficiencies in their barns and on their land. The future well-being of our communities is dependent upon this technology.

We appreciate the Administration’s effort to promote policies that will streamline and incentivize rural broadband deployment; however, we also encourage the inclusion of connectivity investments in your infrastructure proposal. We remain committed to working with you to deliver the promise of robust broadband infrastructure in rural America.

Sincerely,

Petter Wielch  
Member of Congress

Kevin Cramer  
Member of Congress

Mark Pocan  
Member of Congress

Dave Loebsack  
Member of Congress

Robert E. Latta  
Member of Congress

Adam Kinzinger  
Member of Congress
When the city is your internet provider, the real cost may be hidden

By The Editorial Board

January 28, 2018 04:30 PM

In 2010 Highland leaders and residents decided they were not getting the broadband service they deserved, so they built their own fiber optic network.

Highland Communication Services competes with Charter, Frontier, WIFI, DirectTV and Dish Network, but most residents are choosing the local utility. It provides service to 53 percent of its potential customers, and it is getting ready to expand to another 785 potential customers.

The city’s fiber optic company was just cited in a Harvard University study as fifth for value out of 27 public utilities compared to private competitors. A resident will pay Highland $383 a year compared to $679 a year for Charter, the study said.

“The authors showed HCS was providing its customers better value for basic broadband service, as well as clearer pricing,” said study co-author David Talbot.
That means Highland is telling its 2,062 customers what they will pay without offering introductory discounts that vanish in a few years.

All of that is to the good, but there is another aspect to this public utility.

It is publicly funded, and is still paying about $1 million a year toward debt for the system's $12.2 million construction tab. It will continue paying until 2032.

Out of the $4 million current year's budget, Highland's fiber optic will run $1.63 million in the red. That cost is hidden on every resident's city utility bill.

Getting to those additional 763 customers will cost $53,000 in engineering. The construction costs have yet to be tabulated.

Plus, the market is changing.

Landlines are going away and television service is eroding as streaming services become prominent. Highland's triple play is too often down to a single — broadband internet.
1/30/2018

Opinion: Cost of Highland IL city Internet utility company | Belleville News-Democrat

So while Highland should celebrate the Harvard honor, their fiber optic company represents a cautionary tale for other cities pondering going into business. No matter how capable or efficient you might be, a changing market that shuttered a private business just turns into a never-ending ratepayer or taxpayer burden when it is a public utility.
Community Owned Fiber Networks: Value Leaders in America
Fiber rollout shows utility provides least expensive local broadband.
ABSTRACT

We collected advertised prices for residential data plans offered by 40 community-owned (typically municipally owned) Internet service providers (ISPs) that offer fiber-to-the-home (FTTH) service. We then identified the least-expensive service that meets the federal definition of broadband—at least 25 Mbps download and 3 Mbps upload—and compared advertised prices to those of private competitors in the same markets. We found that most community-owned FTTH networks charged less and offered prices that were clear and unchanging, whereas private ISPs typically charged initial low promotional or “teaser” rates that later sharply rose, usually after 12 months. We were able to make comparisons in 27 communities. We found that in 23 cases, the community-owned FTTH providers’ pricing was lower when averaged over four years. (Using a three year-average changed this fraction to 22 out of 27.) In the other 13 communities, comparisons were not possible, either because the private providers’ website terms of service deterred or prohibited data collection or because no competitor offered service that qualified as broadband. We also made the incidental finding that Comcast offered different prices and terms for the same service in different regions.
KEY FINDINGS

• When considering entry-level broadband service—the least-expensive plan that provides at least 25/3 Mbps service—23 out of 27 community-owned FTTH providers we studied charged the lowest prices in their community when considering the annual average cost of service over a four-year period, taking into account installation and equipment costs and averaging any initial teaser rates with later, higher, rates. This is based on data collected in late 2015 and 2016.

• In these 23 communities, prices for the lowest-cost program that met the current definition of broadband were between 2.9 percent and 50 percent less than the lowest-cost such service offered by a private provider (or providers) in that market. In the other four cases, a private provider's service cost between 6.9 percent and 30.5 percent less.

• While community-owned FTTH providers’ pricing is generally clear and unchanging, private providers almost always offer initial “teaser” prices and then raise the monthly price sharply. This price hike in the communities we studied ranged between $10 (20 percent) and $30 (42.8 percent) after 12 months, both imposed by Comcast, but in different communities. Only one community-owned FTTH provider employed this marketing practice for a data-only plan. This exception was a student discount offered by the M!NET network in Oregon.

• Language in the website “terms of service” (TOS) of some private ISPs strongly inhibits research on pricing. The TOS for AT&T, Verizon, and Time Warner Cable (now owned by Charter), were particularly strong in deterring such efforts; as a result, we did not record data from these three companies.

• While the United States has 40 community networks offering broadband FTTH service (many of them serving more than one municipality), we did not make comparisons with private competitors in 13 cases, either because the TOS prohibited data collection or because no competing broadband service existed in the community network’s home community.

• We noted that Comcast varied its teaser rates and other pricing details from region to region. Our sample size was small; just seven of the communities we studied were served by Comcast. Understanding Comcast’s pricing practices and their consumer impacts across the United States would require much deeper study.

• In general we found that making comprehensive pricing comparisons among U.S. Internet service plans is extraordinarily difficult. The U.S. Federal Communications Commission (FCC) does not disseminate pricing data or track broadband availability by address. Additionally, service offerings follow no standard speed tiers or definitions (such as the specifics of video or phone service bundles). We focused on comparing entry-level broadband plans in part because of these complexities.
INTRODUCTION

By one recent estimate, about 8.9 percent of Americans, or about 29 million people, lack access to wired home broadband service, which the FCC defines as an Internet access connection providing speeds of at least 25 Mbps download and 3 Mbps upload.1 Even where broadband is available, high prices inhibit adoption; in one national survey, 33 percent of non-subscribers cited cost of service as the primary barrier.2 Community-owned networks have been proposed as one driver of competition, resulting in better service and lower prices.3

But a lack of accurate and comprehensive data about the true state of Internet access speeds and pricing in communities across the country hampers research into the relative value of community networks, among other public-interest questions. Against this difficult backdrop, we attempted to manually examine the pricing on Internet access service plans of FTTH networks owned by cities, towns, counties, and cooperatives. (We refer to these as “community-owned FTTH networks.”)

We also examined pricing offered by the following private competitors that offer services competing with the community-owned FTTH networks: Comcast, Charter, MediaCom, Cox Communications, KTC Face, Interstate Telecommunications Cooperative, Zeto Media, Bernard Telephone & Communications, Emily Cooperative Telephone Company, and TDS Telecommunications. Due to restrictive website terms of service (described more fully below) we did not collect data from AT&T, Verizon, or Time Warner Cable.

We believe this study is the first to compare prices for Internet access services that minimally meet the FCC’s definition of broadband. Our limited scope and the unavailability of some data makes this study inherently incomplete. But our findings in communities served by 27 community-owned fiber networks are compelling enough to suggest the need for more data and research about broadband pricing, competition, and adoption in the United States. As we explain below, the FCC is the most appropriate body to undertake comprehensive data collection and dissemination; at the same time, nothing prevents state regulatory bodies from requesting greater disclosure by ISPs operating within state boundaries.

SCOPE AND SUMMARY OF METHODS

In order to identify which community networks to include in this study, we relied on a list of networks provided by the Institute for Local Self-Reliance (ILSR), a nonprofit research group that has identified approximately 400 U.S. community-owned networks.4 The Obama White House relied on ILSR’s list when it published a 2015 report on the value of community-owned broadband networks.5 We focused specifically on 40 community networks on the ILSR’s list that offer fiber-to-the-home (FTTH) service—as opposed to service from DSL, coaxial cable, or hybrid technology. These 40 networks serve at least 80 municipalities, but we made the comparisons in the community in which the network originated.

We focused on community FTTH networks because fiber will likely be the technology of choice for any new public or private networks (given its exceptionally high capacity, versatility, and scalability) and because fiber requires the highest up-front investment and installation costs (DSL and cable networks have often been repurposed from legacy phone and TV services). If anything, our focus on fiber may put community networks at a comparative disadvantage when making price comparisons. First, these communities are...
more likely to be still paying off debts, because fiber will have been more recently built. Second, the cost of installing fiber is significantly higher than the cost of upgrading existing cable networks.

To collect data, we visited the websites of the community-owned FTTH providers and recorded pricing information for Internet access only services, and employed a similar methodology to collect information from private competitors. (A full discussion of our methods is found at the end of this report.) However, for the private providers, we typically had to take the extra step of entering individual residential addresses to obtain prices.

We also did not collect or compare pricing of “bundled” packages because the complexity of these offerings makes direct comparisons difficult, if not impossible, given the lack of standard definitions of service offerings. In any case, and as noted later in this report, survey data suggests that consumers are increasingly “cord cutting” or taking Internet-only services. The extent to which this is occurring is unknown to us. What does seem clear from our research is that consumers seeking the cheapest plan that qualifies as broadband will end up with a data-only plan.

But data plans also follow no standard tiers. And some private providers’ websites made it challenging to find certain information. For example, Comcast often does not advertise its upload speeds on pages where it promotes its services to customers. In such cases, we found it necessary to turn to other sources, such as conversations with customer service agents or third-party reports.

Comparisons were not possible for all 40 community networks. In five cases, the community provider had no broadband-speed competition6 in the community network’s home community (we checked prices in one community per network), which likely explains why they entered the business in the first place. In eight other cases, we did not conduct any comparison with private competitors.6

We analyzed only data from providers that offer Internet access speeds of at least 25 Mbps download and 3 Mbps upload, described by former FCC Chairman Tom Wheeler as “table stakes for twenty-first century communications.”7 Put simply, our goal here was to determine what broadband actually costs and whether community-owned FTTH networks provide better deals than private competitors for this essential service. We conclude that they do.

6. Consumers in many communities we studied do have access to DSL. AT&T’s DSL service is available in at least 50 communities we studied and Verizon’s DSL is available in all 40 communities. We did not attempt to collect data on these services, but we did not seek pricing or service details.

MAIN FINDING
COMMUNITY FIBER NETWORKS OFFER BETTER ENTRY-LEVEL BROADBAND VALUES AND CLEARER, TEASER-FREE PRICING

Our major finding is that in 23 out of 27 communities where comparisons were possible, entry-level broadband service from a community-owned FTTH network—meaning the lowest-cost service that met the FCC’s definition of broadband (at least 25 Mbps download, 3 Mbps upload)—was less expensive, when considering the average annual cost of service over four years, than such service offered by a private competitor.

The benefits ranged from a savings of 2.9 percent, or $19, annually in Tullahoma, Tennessee, to more than 50 percent, or $600, annually in Lafayette, Louisiana. Twelve of the community-owned FTTH providers beat their private competitors’ prices by 20 percent or more for entry-level broadband service. In four communities, a private provider beat the community-owned FTTH network. In such cases, the benefits ranged from a 6.9 percent, or $50, saving for users of Charter Spectrum in Jackson, Tennessee, to about a 30.5 percent, or $298, saving, also for users of Charter Spectrum, in Churchill, Nevada.

The lowest-speed tier that met the broadband minimum varied from provider to provider. In 13 cases, the private provider’s lowest-cost plan that met the broadband threshold offered higher speeds than did the lowest-cost broadband service of community-owned FTTH networks. In six cases, the reverse was true; in five cases, the speeds were the same.

Our secondary finding was that community-owned providers furnish consumers with dramatically dearer pricing. Of the 35 private Internet access plans we encountered in our data collection, 25 offered low-cost initial promotional (or “teaser”) rates and then increased the rates substantially at the conclusion of the initial period (typically 12 months). In contrast, we encountered only three examples of promotional pricing among the community-owned ISPs we studied. And MINET, in the towns of Monmouth and Independence, Oregon, was the only one to offer such a deal on a plan offering Internet access only, in the form of a special promotion for students. The private providers’ price increases at the expiration of the promotional period ranged from 20 percent, or $10 monthly (Comcast Xfinity in Longmont, Colorado), to 42.8 percent, or $30.04 monthly (Comcast Xfinity in Concord, Massachusetts).

We do not know what fraction of broadband subscribers take data-only plans as opposed to bundles. However, surveys of U.S. consumers by the Pew Research Center indicate a trend toward “cord cutting” (the practice of canceling a cable TV subscription and merely taking a data plan). In late 2015, Pew reported that about 15 percent of Americans were cord cutters and that another nine percent had never taken a TV subscription. Younger people appear more likely to do without bundles. Pew’s most recent survey, in September of 2017, found that 60 percent of people aged 18-29 said they mainly watched TV by using services such as Netflix.

Our study, though limited in scope, contains a clear finding: community-owned FTTH networks tend to provide lower prices for their entry-level broadband service than do private telecommunications companies, and are dearer about and more consistent in what they charge. They may help close the “digital divide” by providing broadband at prices more Americans can afford.
Community Fiber Networks:
Providers of Entry-Level Broadband Savings

In the United States, about 40 community-owned (mostly municipally owned) fiber networks provide residential internet service. Of these, 27 (shown here) have competition from private competitors.

Of these 27, 23 offer the lowest annual average price for the least-expensive available plan providing at least 25 Mbps download, 3 Mbps upload, the FCC's definition of "broadband." 1

The numbers refer to the differences in cost per year, averaged over a four-year period, as advertised on the providers' websites during our review in late 2015 and early 2016. The full dataset we generated is available at this address:

http://dx.doi.org/10.7910/DVN/H4T77F

Some providers' entry-level broadband services offer higher speeds than others, the industry doesn't follow any standard speed tier. We focused on the plan that minimally met the FCC definition, regardless of exact advertised speed.

Our analysis is limited in scope. A deeper study would require comprehensive data to be made available on advertised prices, actual prices charged, and service availability and adoption by address.
## Cheapest Tiers Meeting Broadband Definition
Community Fiber Networks Tend to Beat Private Competitors

This table reviews advertised broadband prices in 27 communities served by community-owned FTTH networks and one or two private providers. The dollar figures present average cost per year over four years and take into account all fees and recurring costs.

<table>
<thead>
<tr>
<th>Basic Community</th>
<th>Entry-level broadband offering from community FTTH network</th>
<th>Entry-level broadband offering from private competitor</th>
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<tr>
<td></td>
<td>Download speed: 10 Mbps</td>
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<tr>
<td></td>
<td>Upload speed: 1 Mbps</td>
<td>Upload speed: 1 Mbps</td>
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<tr>
<td></td>
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**Key**
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</tr>
</tbody>
</table>

**Note:**
- Data includes all fees and recurring costs.
KEY

1. This community may also be served by AT&T. We did not collect data from AT&T because of prohibitions contained in the terms of service posted on AT&T's website.

2. This community may also be served by Verizon DSL service. We did not collect data from Verizon because of prohibitions contained in the terms of service posted on Verizon's website.

3. Because this community ISP offered only bundled phone/data, we used the phone/data price in place of a data-only price and did not attempt to subtract the value of the phone service.

4. This community provider also offered a higher speed that was closer to the entry-level speed of the private provider. However, we only compared the cheapest possible plans that met broadband definitions. We also did not attempt to verify actual delivered speeds for any ISP.

5. Longmont, CO, has a DSL provider whose website does not prohibit data collection and that offers broadband speeds. In this one case, we collected the pricing information in March of 2017.

6. Seven of the 27 communities were served by two private ISPs providing at least 25/3 Mbps service, resulting in the split row containing two sets of prices.

7. In August of 2016, Crosslake Communications was bought by Tri-Co Technologies, a partnership of three private companies. We collected our data before this occurred.

8. The Highland Fiber Network serves a community called Issaquah Highlands, a neighborhood within Issaquah, WA. It does not serve the larger municipality of Issaquah.
INCIDENTAL FINDINGS

COMCAST SUBSTANTIALLY VARIES PRICING AND TERMS BY REGION

We made an incidental finding: Comcast—which offers service in seven communities we studied—varies its teaser rates and other pricing strategies substantially from region to region. We don’t know if Comcast’s practice of varying pricing is common in the industry. (Charter Spectrum, present in 13 communities, appears to offer uniform pricing.) Many significant questions—such as impacts by region or demographic group—could be answered with better data. Here’s how Comcast Xfinity’s pricing differs by region:

- Discounting a middle-tier speed option—in four communities we studied, Comcast offered a middle tier of service at a promotional rate that was less expensive for the first year than was a slower plan. After the promotion expired, the price would rise sharply.

- Presenting prices as a range—Comcast sometimes defined a monthly price as a range (between $2 and nearly $15 monthly), leaving it unclear what consumers would be paying.

- Varying teaser rates—Comcast employed different teaser rate progressions, including a price increase after 12 months and two price increases over a period of three years.

- Discounts for paperless billing and automatic payments—in four communities, the promotional rate Comcast advertised in bold was only available to customers who allowed Comcast to automatically charge monthly payments to their credit card or bank. Prices were $10 higher for customers who did not agree, a practice that penalizes consumers without credit cards or bank accounts or who are reluctant to provide permission.

- Service with or without a contract—in Issaquah, WA, and Longmont, CO, Comcast offered consumers a choice of taking service through a 12-month contract or doing so without a contract (and its potential cancellation fees) for $10 more a month. As a result, anyone who chose the plan without a contract but didn’t end up canceling within the first year would spend an additional $120.
CONCLUSION

Studying the pricing practices of U.S. Internet service providers is challenging. Many ISPs defer data collection, service plans, and pricing strategies aren't standardized, and regulators don't collect and release enough relevant data. Against this backdrop, we did our best over more than 18 months to manually gather and harmonize data to explore whether community-owned FTTH networks or private providers offered the best values in providing a service that minimally met the FCC's definition of broadband.

We found that in 23 out of 27 communities where comparisons were possible, entry-level broadband service from a community-owned FTTH network was indeed less expensive than comparable service offered by a private competitor when considering the annual cost of service averaged over four years. What's more, the community providers were generally far clearer in how they presented pricing—steering clear of initial teaser rates that later rise sharply.

But the unavailability of comprehensive data leaves many fundamental questions unanswered. These include: What does broadband service actually cost consumers in the United States? To what extent do carriers actually charge the rates set forth in price lists? How many consumers attempt to renegotiate after teaser rates expire, and how many pay higher prices for many more years? Exactly how sensitive are consumers to pricing when choosing to adopt broadband service? Are publicly owned FTTH networks a better value overall than private ones? How frequently do companies vary pricing of the same service in different regions, and does this have a disparate impact on different demographic groups? Do municipally or other community-owned systems put downward price pressure on private company offerings?

Existing efforts at regulatory data collection fall far short of what would be needed to answer such questions. While the FCC collects data about advertised speed tiers and other service offerings through a telecom industry reporting document called Form 477, it does not comprehensively collect data on pricing. It does collect some pricing data in specific circumstances, such as from schools and libraries that participate in the E-rate program, which subsidizes Internet access to those institutions.

The FCC also only collects data by census block, not address. The FCC recently sought comment on proposals to expand the scope of data collection under Form 477 and specifically asked whether collecting data at the street-address level would be beneficial. Having gone through this data-collection exercise, we can report that the answer is yes. Street-address-level data, if available for study, would speak most clearly about the state of broadband service, price, and competition in the United States.

Some existing resources aren't useful in practice. The National Telecommunications and Information Administration (NTIA) in 2009 created a National Broadband Map, but among other problems with this resource, it provides no information about pricing, and data collection for the map ceased in June of 2014. The Commerce Department collects and publishes aggregate data about the state of broadband competition in the United States, but it does so only at the level of census blocks. In general, data is not collected in a coordinated manner, and omits critical information like price. Other independent organizations have attempted to fill

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24 The National Broadband Map is listing a lot of data on smaller ISPs, including municipally owned networks. At the same time, it overstates the degree of competition in many areas because it likely includes only the largest providers. In essence, according to the map it appears that someone who lives on a block that is on nearly any signed-in by one residential provider also has other competitors who choose the same.

25 The FCC, for example, has previously declined to collect pricing information from non-broadband providers through the annual Form 477 reporting requirement it imposes on Internet access providers, and has claimed that it does not have the "available data as to the actual prices that Internet access providers charge for service at the street address level." See Internet Access Providers: Price and Quantity Data Collection Order, Communication Bureau, Federal Communications Commission, 17 F.C.C. R. & T. 1299, Nov. 15, 2011, http://transition.fcc.gov/compliance/pricequantity.html.

Community-owned networks are facing pressure. State governments in at least 20 states have enacted restrictions on these providers, often with language drafted by cable and telecom lobbyists. During Tom Wheeler's tenure as FCC chairman, the commission pushed back: the FCC in 2015 moved to preempt state laws in North Carolina and Tennessee that restrict municipal broadband providers from offering service beyond current service boundaries, but a federal appeals court reversed the FCC's decision.

Our findings, though limited in scope, point to the benefits of community fiber networks in providing broadband to Americans at prices that are more affordable. The national interest would be served by deeper data collection and study.

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28 To make possible deeper study of comparative broadband pricing and the relationship between pricing and consumer adoption, the U.S. Tel­com and Communications Commission should consider evaluating advertised and actual speeds and assessing the impact of competition on service levels.

29 Our findings, though limited in scope, point to the benefits of community fiber networks in providing broadband to Americans at prices that are more affordable. The national interest would be served by deeper data collection and study.
APPENDIX

METHODS

The data in this study were collected between November 2015 and January 2016 for most of the community-owned FTTH providers, and between May 2015 and September 2016 for most of the private providers. We obtained these data by visiting the websites of every ISP included in the study, writing down what we saw, and preserving screenshots. We did not attempt to update pricing after initial collection. We did not involve any of the private or public providers for the collection or analysis of the data.

Communities Included in the Study

We limited the community-owned ISPs in our survey to those that provide fiber-to-the-home (FTTH) residential services. In this study, the term “community-owned FTTH providers” refers to FTTH providers owned by a city, town, county, cooperative, or other public body.

People of other community-owned ISPs operate coaxial cable, DSL, or hybrid infrastructure (such as which have been in operation for decades as television or phone service networking). We reasoned that a targeted study of community-owned FTTH networks provided a valid subset and would be far from the local private competition because fiber is the most expensive technology to deploy and would have been installed more recently (with capital costs still being paid off in many cases). In addition, fiber—particularly the most advanced and versatile technology—is likely the choice for any future network construction.

We collected pricing data from the websites of 40 community-owned FTTH providers and their competitors. Our sample for the existence of these community-owned FTTH providers was a list of municipal networks compiled by the Institute for Local Self-Reliance (ILSR), and a similar list compiled by the White House in 2015 that was based on the LIR data.22 Next, we identified competitors in those communities by using the National Broadband Map23 and a third-party site called BroadbandNow.24 We included all private fiber, cable, or DSL providers who provide broadband service, except those whose websites’ terms of service prohibited data collection. We did not collect data from Time Warner Cable, ATT, or Verizon, all of which included language in their terms of service/disclaimers on the website that prohibited collecting any pricing information from the site by anyone other than the individual and intended to purchase services. Therefore, some communities do not contain complete data about competitor ISPs, which we have noted in the data set.

Seven of the 12 private providers doing business in the communities we studied required a website visitor to enter a home address in order to see detailed pricing information (or in some cases, to see any price at all). In such cases, we used local residential addresses to get past this step and obtain pricing.

The Data We Collected

Below, we provide a detailed explanation of each category of information we collected. The data collection task was complex because the industry lacks a standardization in terms of speed labels, the specifics of video or phone offerings, and the existence and amounts of up-front fees or promotional discounts. Some of these ISPs and many of their competitors offered bundled services—packages offering some combination of Internet access, television, and telephone service—but the differences in number of TV channels, the details of phone plans, and other characteristics made apples-to-apples comparisons difficult.

Internet Service Only Plans

Given our resource constraints we decided to focus on information on Internet service only plans. For each such plan, we recorded the download and upload speed in megabits per second (Mbps). In two cases where a municipal provider did not offer any such plan, we recorded the least expensive plan bundled with telephone service, and indicated that it was a bundle.

Monthly Pricing

For each Internet access plan, we recorded the price the customer is charged for the first month of services. We then determined whether this monthly price was promotional and would expire after some period of time. In such cases, we recorded the duration of the discount in months and the price of service once the deal expired. If no promotion was available, in certain cases, the promotional price plan included multiple tiers of pricing; for example, one price for the first year of service, a higher price for the second year of service, and an even higher price for the third year of service.
third year of service. In those instances, we recorded the lengths of each promotional price interval in months and the new price after that period of time passed.

Contracts
We determined if an ISP required customers to accept the terms of a contract for its service, and if so, how long that contract lasts. In cases where service plans required contracts, we recorded the length in months.

One-Time Costs
In addition to recurring monthly charges, we also recorded any fees or costs that customers had to pay in the course of acquiring, setting up, or canceling service.

- Installation fees: Some ISPs require professional installation and charge for it; some provide installation for free; and some offer customers a choice between purchasing a professional installation or doing a self-installation for a lower price or for free.36
- Activation fees: These are the cost of turning on Internet access service, and are sometimes charged in addition to or in lieu of an installation fee.
- Equipment purchase cost: This is the cost of purchasing equipment necessary for setting up Internet access service, such as a modem or router, directly from the ISP. Some ISPs require users to buy equipment from them, while others give customers the option to purchase compatible equipment from another source.
- Termination fees: These are the cost of breaking a service contract early.

When we encountered costs that did not fit these definitions, we noted this as “other” and explained it in notes.

Recurring Costs
Many ISPs also had additional recurring costs, which we defined as fees or costs that customers pay each month in addition to the monthly Internet access service charge.

- Equipment rental fees: The cost per month of renting equipment for home Internet access service, such as a modem or router, from the ISP. Some ISPs require users to rent the equipment from them, while others give customers the option to purchase compatible equipment from another source. When customers were given a choice, the research team coded the equipment purchase as “not applicable” and recorded the cost of the optional equipment in the survey notes.
- Line access fees: Some ISPs charge a monthly fee to cover the cost of maintaining the connections from the ISP’s own infrastructure to the customer’s home, sometimes called a line access or line maintenance fee. We encountered only one example of line access charges, from TDS Telecommunications in St. Cloud, Minnesota.
- Customer support fees: Some ISPs charge customers an additional fee for the right to call a customer support line at any time, regardless of whether the customer actually uses the service.37

A recurring cost that didn’t match the above descriptions was recorded as “other” and explained in notes.

Network Details
We recorded the network infrastructure types: fiber optic cable, coaxial cable, or DSL. For hybrid networks, we did not have information in the data set. Some ISPs noted that they used multiple types of network infrastructure.

We documented the process by taking screenshots of all webpages from which we obtained information for the survey.39 We also ran calculations for three years (a period of time that would likely benefit private providers, given that they tend to offer initial lower rates) and found that the service of just one additional community-owned FTTH network (Cedar Falls, Iowa) became slightly more expensive on average.

Calculating and Comparing Pricing
We calculated how much a customer would pay each year for four years, on average, after accounting for promotional rates, subsequent post-promotional rates, and one-time costs. We reasoned that four years was a reasonable term to consider. A 2010 FCC working paper found that 62 percent of surveyed Americans hadn’t switched providers in the past three years.39 We also ran calculations for three years (a period of time that would likely benefit private providers, given that they tend to offer initial lower rates) and found that the service of just one additional community-owned FTTH network (Cedar Falls, Iowa) became slightly more expensive on average.

Comcast advertised the cost of standard service as a range. We opted to use the lower dollar figure in our calculations.

36 For the purposes of this survey, when ISPs offered customers a choice between self-installation and professional installation, the research team opted for the professional installation price but noted the cost of self-installation in the survey notes. This coding was based on an assumption that the average home Internet access customer might not want to know how to set up a home Internet access connection.
37 This kind of recurring cost is distinct from charges for on-site customer assistance or toll-based customer support hotlines, which charge for customer support as needed.
38 This raw data from our study is available here: http://bit.ly/2G720115X40
39 For the purposes of this survey, when ISPs offered customers a choice between self-installation and professional installation, the research team opted for a professional installation price but noted the cost of self-installation in the survey notes. This coding was based on an assumption that the average home Internet access customer might not want to know how to set up a home Internet access connection.
For Immediate Release

Contact:
Eben Wyman: (703) 750-1326

House Subcommittee Considers Several Measures to Facilitate Broadband Deployment
Legislation Addresses Permit Delays, Regulatory Hurdles

January 29, 2018

Washington, D.C. – The Power and Communication Contractors Association (PCCA) strongly supports several legislative measures introduced by the House Subcommittee on Communications and Technology that would establish priorities for broadband buildouts, including permit reform, streamlining environmental hurdles, and standardizing application forms for broadband infrastructure improvements.

“PCCA appreciates the bipartisan approach by Chairman Blackburn and the members of the subcommittee who are offering a range of legislative measures aimed at deploying broadband across America more effectively,” said PCCA President Jim Dillahunty, of Henkels and McCoy, Blue Bell, Pa. “Many of these bills would take needed steps to provide unserved and underserved areas the high-speed internet service that is needed now more than ever.”

PCCA strongly supports the Communications Facilities Deployment on Federal Property Act of 2018 (HR 4795), offered by Rep. Mimi Walters (R-Calif.). The legislation would require executive agencies to use common application forms and cost-based application fees for easements, rights-of-way, and master contracts for placement of communications facility installations on federal property.

PCCA also supports the Streamlining Permitting to Enable Efficient Deployment of Broadband Infrastructure (SPEED) Act (HR 4842), which would exempt certain broadband facilities in existing rights-of-way from environmental reviews under the National Environmental Policy Act (NEPA). The bill would also exempt facilities from environmental reviews where other facilities on the same property have already been approved. Importantly, the SPEED Act would exempt expansion of broadband facilities from environmental and historic preservation reviews if the expansion of the broadband facility is no more than 30 feet in any direction.
Although PCCA does not have an official position on policy regarding “one-touch make-ready” (OTMR), we support HR 4858, the Clearing Local Impediments Makes Broadband Open to New Competition and Enhancements (CLIMB ONCE) Act, introduced by Rep. Anna Eshoo (D-Calif.) The legislation would confirm state authority to adopt an OTMR policy for pole attachments, which allows attachers and pole owners to use a contractor or set of contractors, approved by pole owners, to coordinate and perform all work related to a new attachment. Under OTMR policy, new attachers could use a single or set of approved contractors to complete all of the work in a coordinated timeframe in lieu of several crews to perform sequential make-ready work on a given pole. Allowing states to enact policy that would allow for approved broadband and power contractors to perform this work would avoid multiple reviews and truck rolls for each of the providers already attached to the pole.

PCCA also appreciates the resolutions offered by Reps. Leonard Lance (R-N.J.), Bob Latta (R-Ohio), Richard Hudson (R-N.C.), and Gus Bilirakis (R-Fla.), which promote policy to ensure permitting and regulatory requirements are coordinated to maximize the benefits that come with broadband investment and to focus broadband deployment on underserved areas.

PCCA members work every day on projects that provide and enhance broadband services to localities across the country, both urban and rural, and we look forward to helping advance many of these bills through the legislative process this year.

The Power and Communication Contractors Association represents contractors, manufacturers, and distributors who build and repair America’s power and communications infrastructure, including electric transmission, distribution, and substation facilities and broadband, telephone, and cable television systems.

###
Scoop: Trump team considers nationalizing 5G network

Trump national security officials are considering an unprecedented federal takeover of a portion of the nation’s mobile network to guard against China, according to sensitive documents obtained by Axios.

Why it matters: We’ve got our hands on a PowerPoint deck and a memo — both produced by a senior National Security Council official — which were presented recently to senior officials at other agencies in the Trump administration.

The main points: The documents say America needs a centralized nationwide 5G network within three years. There’ll be a fierce debate inside the Trump administration — and an outcry from the industry over the next 6-8 months over how such a network is built and paid for.

Two options laid out by the documents:

1. The U.S. government pays for and builds the single network — which would be an unprecedented nationalization of a historically private infrastructure.

2. An alternative plan where wireless providers build their own 5G networks that compete with one another — though the document says the downside is it could take longer and cost more. It
argues that one of the "pros" of that plan is that it would cause "less commercial disruption" to the wireless industry than the government building a network.

**Between the lines:** A source familiar with the documents’ drafting says Option 2 is really no option at all; a single centralized network is what's required to protect America against China and other bad actors.

- The source said the internal White House debate will be over whether the U.S. government owns and builds the network or whether the carriers bind together in a consortium to build the network, an idea that would require them to put aside their business models to serve the country's greater good.

**Why it matters:** Option 1 would lead to federal control of a part of the economy that today is largely controlled by private wireless providers. In the memo, the Trump administration likens it to "the 21st century equivalent of the Eisenhower National Highway System" and says it would create a "new paradigm" for the wireless industry by the end of Trump’s current term.

- **But, but, but:** The proposal to nationalize a 5G network also only covers one part of the airwaves; there’d be other spaces where private companies could build.

The **PowerPoint presentation** says that the U.S. has to build superfast 5G wireless technology quickly because "China has achieved a dominant position in the manufacture and operation of network infrastructure," and "China is the dominant malicious actor in the Information Domain." To illustrate the current state of U.S. wireless networks, the PowerPoint uses a picture of a medieval walled city, compared to a future represented by a photo of Lower Manhattan.

The **best way to do this**, the memo argues, is for the government to build a network itself. It would then rent access to carriers like AT&T, Verizon and T-Mobile. (A source familiar with the document’s drafting told Axios this is an "old" draft and a newer version is neutral about whether the U.S. government should build and own it.)

- It’s a marked shift from the current system where those companies each build their own systems with their own equipment, and with airwaves leased from the federal government.
- Nationwide standard: the federal government would also, according to the memo, be able to use the banner of national security to create a federal process for installing the wireless equipment, preventing states and cities from having their own rules for where the equipment could go.

The **bigger picture:** The memo argues that a strong 5G network is needed in order to create a secure pathway for emerging technologies like self-driving cars and virtual reality — and to combat Chinese threats to America’s economic and cyber security. A PowerPoint slide says the play is the digital counter to China’s One Belt One Road Initiative meant to spread its influence beyond its borders. The documents
also fret about China’s dominance of Artificial Intelligence, and use that as part of the rationale for this unprecedented proposal.

- **There’s even** a suggestion that America’s work on a secure 5G network could be exported to emerging markets to protect democratic allies against China.

- "Eventually," the memo says, "this effort could help inoculate developing countries against Chinese neo-colonial behavior."

**AI arms race:** The memo says China is slowly winning the AI "algorithm battles," and that "not building the network puts us at a permanent disadvantage to China in the information domain." There is a real debate to be had over China and AI, but it’s unclear what at all that has to do with a mobile network.

**Reality check:** The U.S. wireless industry is already working on deploying 5G networks, with AT&T, Verizon and T-Mobile, for example, investing heavily in this area. The process for setting 5G standards is well underway. Korea has been at the forefront of testing, as have Japan and others. It’s not clear a national strategy would yield a 5G network faster or by the memo’s 3-year goal.

*Get more stories like this by signing up for our weekly political lookahead newsletter, Axios Sneak Peek. Go deeper:

1. How 5G works
2. The concerns raised about nationalizing 5G
3. Read the full memo below*
January 25, 2018

The Honorable Michael Doyle
Ranking Member
Communications and Technology Subcommittee
of the Committee on Energy and Commerce
United States House of Representatives
239 Cannon House Office Building
Washington, DC 20515

Dear Congressman Doyle,

Thank you for your efforts to influence policies and legislation to expand broadband access throughout our nation. Tipmont has been leading the effort for its own members and believes that cooperatives are uniquely positioned to help expand broadband into rural America. Though we’ve found FCC programs to be ineffective, we can demonstrate that benefits from public funding for broadband expansion far exceed the costs of that support.

FCC Programs are Ineffective

Tipmont REMC participated in CAF-I and is currently evaluating participation in CAF-II. Unfortunately, these programs are proving to be an ineffective solution for truly expanding broadband access. The FCC relies on census-block data self-reported by voice and broadband service providers on FCC Form 477, however it’s an inaccurate representation of service availability. Reporting service availability in a census block simply does not provide the granularity required to determine availability. If a service provider could demonstrate that they provided service to even one customer within that census block, they would get credit for serving the census block (Lennett, 2011). Although the FCC is investigating ways to improve data reporting accuracy, this dataset is the basis on which funding is distributed currently and in the near future.

Tipmont REMC performed extensive survey work in its own electric service territory demonstrating that the need for broadband in rural America is much greater than what service providers have been reporting to the FCC. According to the FCC data, 93% of our nearly 23,000 members should have high-speed, reliable wireline access over fiber, cable and DSL technologies as depicted below in Figure 1: FCC Reported Internet Availability. The chart uses FCC data to demonstrate the best technology available to each of our members. As you can see in Figure 2: Member Reported Internet Availability, the FCC data stands in stark contrast to what Tipmont members reported directly in 2017 when asked how they received internet access. Tipmont’s representative survey indicated that only 54% of our membership had access to high-speed, reliable wireline internet service. While there is considerable discussion about the FCC’s shifting definition of broadband, from 3 Mbps / 768 Kbps
(download/upload), to 25 Mbps / 5 Mbps and then jumping backwards to 10 Mbps / 1 Mbps, let's set aside the question of speed for a moment. Based on the survey data from our membership, wireline service availability in Tipmont's electric service territory is nearly 40% less than what is represented in the FCC's dataset.

Based on Tipmont's research to pursue funding through CAF-II, the FCC's data indicates that fewer than 300 locations in Tipmont's electric service territory lack access to infrastructure capable of providing 10/1 Mbps fixed broadband. Once again, according to the information we've gathered in Tipmont's service territory, we believe that the number is closer to 10,000 to 15,000 locations. This discrepancy alone signals the need for a better approach using more granular and reliable data to understand the problem.

As stated by the FCC, "Broadband has gone from being a luxury to a necessity for full participation in our economy and society—for all Americans," but the problem cannot be resolved if the information on which decision makers rely understates the true extent of the problem (FCC, 2018). The FCC's programs are the only ones available to fund broadband expansion into rural America. It causes us to question whether data at the census block level self-reported by service providers is really the best approach.

**Cooperatives Will Lead the Solution**

Electric cooperatives are in a unique position to solve the broadband needs in rural America. They already own the infrastructure connecting homes in those rural areas and their business model is designed to solve these problems. Cooperatives are mission-based, not-for-profit organizations.
Cooperatives, autonomously governed by the members they were created to serve. For decades, they've constructed capital-intensive infrastructure to serve their members' shared needs in areas where municipals and the private sector have chosen not to serve. Furthermore, cooperatives actively partner with governmental agencies, pursue regional economic development efforts, collaborate with community anchors and are trusted by their membership (Autry & Hall, 2009). Since their creation in the 1930s, cooperatives have proven to be a sound financial investment for the expansion of rural infrastructure to provide electric service. We believe that the same is true today, that cooperatives are a sound financial investment to expand broadband infrastructure to rural America.

**Economic Benefits Justify Support**

Cooperatives can lead the solution, but they will disproportionately bear the burden for the significant benefits returned to communities surrounding them. Tipmont and Indiana Electric Cooperatives (IEC) have commissioned a study with Purdue University to quantify the economic benefit the community derives from each dollar invested in broadband infrastructure. Preliminary results from the study already indicate that financial support for broadband infrastructure delivers significant economic gains for the community.

We look forward to sharing results with you from this study in the near future and any additional information that will assist your efforts to expand broadband access in rural America.

Sincerely,

Ron Holcomb
Tipmont REMC
403 S Main St, Linden, IN 47955

**References**


Mr. Jonathan Spalter  
President and CEO  
USTelecom  
601 New Jersey Avenue, N.W.; Suite 600  
Washington, DC 20001

Dear Mr. Spalter:

Thank you for appearing before the Subcommittee on Communications and Technology on Tuesday, January 30, 2018, to testify at the hearing entitled "Closing the Digital Divide: Broadband Infrastructure Solutions."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Monday, March 5, 2018. Your responses should be mailed to Evan Viau, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed to Evan.Viau@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

[Signature]

Michael Blackburn  
Chairman  
Subcommittee on Communications and Technology

cc: The Honorable Michael F. Doyle, Ranking Member, Subcommittee on Communications and Technology

Attachment
March 5, 2018

The Honorable Marsha Blackburn  
Chairman  
Subcommittee on Communications and Technology  
Committee on Energy and Commerce  
2125 Rayburn House Office Building  
Washington, DC 20515

Chairman Blackburn,

Please see the attached responses to Members’ questions for the record from the Subcommittee on Communications and Technology’s hearing entitled “Closing the Digital Divide: Broadband Infrastructure Solutions” on January 30, 2018.

It was an honor appearing before the Subcommittee on such an important topic, and I stand ready to work with you and any Member of the Energy & Commerce Committee on efforts to close the digital divide going forward.

Sincerely,

Jonathan Spalter
The Honorable Yvette Clarke

1. I have learned by representing the 9th Congressional District of New York and the Smart Cities Caucus that cities are eager to bring high-speed broadband and 5G technology to their constituents. I am concerned, however, by the recent adversarial tone between industry and cities. I think it is wrong to characterize cities and industry as adversaries and not partners.

   a. Can you all commit to helping reach a good faith consensus on how to bring high-speed broadband and 5G technology to cities aiming to deploy smart technology for their constituents? What are your plans for this commitment and engagement?

      Our member companies have long been committed to aggressively deploying broadband in cities and other populous urban areas and remain dedicated to connecting Americans from coast to coast and everywhere in between. The imminent move to 5G technology only increases the incentive for our providers of high-speed broadband connections to be the core delivery mechanism for smart technology, small cells, and the broader Internet of Things. Going forward, we will continue participating in the FCC's Broadband Deployment Advisory Council (BDAC) which fosters collaboration with parties from all communications sectors, as well as states and municipalities, to reach consensus for codes and regulations to incentivize optimal deployment strategies. BDAC allows both provider and government viewpoints to be heard and assessed, so all parties can collaborate and move forward to deliver next generation technologies as safely and efficiently as possible. We also look forward to working with Congress and the Administration to ensure the benefits and opportunities 5G network evolution will bring to our cities also can be equally enjoyed by all American families, communities and companies, including those in rural areas.

   b. Will you commit to working with my office to resolve some of these disputes, and find a path forward that works for all consumer, cities, and the industry?

      Absolutely.

The Honorable Anna G. Eshoo

1. It's been almost a year since Congress repealed the FCC's privacy rule with a CRA, partially based on the notion that the FTC would take care of privacy for consumers. FCC Chairman Pai also just repealed net neutrality, again kicking oversight over to the FTC. In the months since the repeal of the privacy rule, there have been no enforcement proceedings, working groups, or other types of actions has the FTC taken to address or give guidance about consumer privacy in the communications sector.

   a. Why should we believe that the FTC in the future will be diligent in providing the type of robust protections consumers need in a rapidly evolving communications environment, net neutrality, privacy, or otherwise, when it has so far failed to do so?

      The FTC has a long, successful history of assertively and aggressively protecting American consumers from unfair and anticompetitive practices in the communications sector, as well as related innovative technology industries. As an enforcement agency, the FTC evaluates the conduct of companies to ensure they are abiding by the promises they make to their customers and assesses company and individual actions to determine if any
acts or practices cause harm to consumers and competition. Enforcement action happens after someone brings a complaint, based on facts, that someone or something has harmed them or violated a promise made to consumers. Our member companies have publicly committed to the open internet principals that underpin the current net neutrality and privacy debates in our country, therefore it is no surprise that the FTC’s record is not full of enforcement actions in this regard. The same cannot be said about other parts of the internet ecosystem. Delivering on consumer demand for a secure, reliable and fast connection to the internet is a priority for our members, one that drives business decisions in this highly competitive industry.

The FTC is armed with the expertise, tools, and statutory ground to police the internet ecosystem without chilling innovative ideas, a balance that should be applauded from both sides of the aisle. If a practice is novel or complex in its utilization of new technology, the FTC can supplement its own internal technological expertise with outside experts, and coordinate with other government agencies familiar with specific industry practices. Additionally, the FTC recently hosted PrivacyCon 2018, an event free and open to the public and streamed over the internet, which marks the third annual gathering of scholars and practitioners focused on emerging privacy and data security issues.

Going forward, the resolution and certainty that the 9th Circuit’s February 26th en banc ruling provides for FTC enforcement over internet service providers sets a clear path forward for consumers in light of the 2015 Open Internet Order’s stripping of FTC authority. When asked about the possibility of this ruling in his Senate confirmation hearing on February 14, 2018, Chairman Designate Joseph Simons said he expects the FTC to be a “vigorous enforcer” in the internet ecosystem. The parity that the FTC provides in its enforcement capability offers the level playing field consumers demand, eliminating the confusion over who can do what (and for how much) with personal information. To the extent that any fact-based complaints arrive at the FTC concerning internet service provider actions, we fully expect the complete enforcement capabilities of the FTC will be utilized to protect consumers.
Mr. Brad Gillen  
Executive Vice President  
CTIA  
1400 15th Street, N.W.; Suite 600  
Washington, DC 20036  

Dear Mr. Gillen:

Thank you for appearing before the Subcommittee on Communications and Technology on Tuesday, January 30, 2018, to testify at the hearing entitled “Closing the Digital Divide: Broadband Infrastructure Solutions.”

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Monday, March 5, 2018. Your responses should be mailed to Evan Viau, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed to Evan.Viau@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

[Signature]

Michael Blackburn  
Chairman  
Subcommittee on Communications and Technology

cc: The Honorable Michael F. Doyle, Ranking Member, Subcommittee on Communications and Technology

Attachment
Questions for the record from Congresswoman Clarke

For Mr. Gillen

1. Can you all commit to helping reach a good faith consensus on how to bring high-speed broadband and 5G technology to cities aiming to deploy smart technology for their constituents? What are your plans for this commitment and engagement?

A. Yes. CTIA commends the Congresswoman for her attention to this critical issue, and agree that a close working relationship between operators and cities is key to unlocking the value of 5G for all Americans.

As you have observed, 5G will have a transformative impact on the way Americans live and work in communities throughout this country. The high speed and low latency promised by 5G will improve the responsiveness of wireless networks and devices, creating new use cases that will produce widespread benefits not just in the telecommunications sector, but also for public safety, health care, transportation, accessibility, and more. Moreover, with an anticipated $275 billion in investment from the wireless industry, 5G technology is expected to bring three million new American jobs and will help unlock hundreds of billions in new investments across the country. A report by Accenture shows Smart Cities solutions built on 5G infrastructure could produce $160 billion in benefits and savings for municipalities when applied to their electric grid and traffic management. This is just a small snapshot of what 5G services can bring when municipalities and industry work collaboratively.

A key piece of realizing the benefits of Smart Cities is education and outreach to local officials about the promises of 5G and the proactive steps mayors and local leaders can take to ensure their communities are 5G ready. Across the country, CTIA and our members have been reaching out to policymakers at all levels of government to encourage modernization of wireless siting policies, including efforts to ensure the rapid and efficient buildout of the infrastructure necessary for capacity-building.

The good news is because of this outreach we are already seeing investments flow to communities that are moving forward to capitalize on the 5G opportunity. Verizon, for instance, has announced it will be commercially deploying a 5G network in Sacramento in the second half of 2018. This deal sprung out of the close cooperation between Verizon and the Sacramento city government. AT&T also recently announced its plans to offer mobile 5G to its customers in a dozen cities by the end of 2018. Minneapolis is one of the cities in AT&T’s 5G Evolution Test Market, thanks in part to the city’s small cell ordinance designed to bring more investment to the city. The state of Minnesota also recently
Responses of Brad Gillen, Executive Vice President, CTIA
To Questions for the Record
Before the
U.S. House Energy and Commerce Subcommittee on Communications and Technology
March 5, 2018

passed a small cell law that establishes a clear timeline for cities to issue or deny small cell permits and sets a statewide annual fee for 5G small cell deployments. These are just two examples—and we are seeing similar investments from all the national carriers as well as regional providers—that offer a clear roadmap for how city leaders can attract the investment their communities need.

We applaud those states and localities that have modernized their policies to reflect the size and scale of next-generation network architecture, and we look forward to working with other communities to continue these efforts and to ensure robust connectivity across the nation, to the benefit of consumers, local governments, and the American economy.

2. Will you commit to working with my office to resolve some of these disputes, and find a path forward that works for all consumers, cities and the industry?

A. Yes. CTIA is committed to working with you to resolve any disputes and to find a path forward that will work for local governments, consumers, and the wireless industry alike. We cannot maintain our global leadership as the wireless ecosystem evolves from 4G LTE to 5G without the close collaboration and support of state and local governments. We recognize the integral role states and localities play in modernizing our infrastructure and we will continue to work closely with local leaders to ensure the tremendous potentials of 5G is unleashed.
Mr. Matthew Polka  
President and CEO  
American Cable Association  
7 Parkway Center Drive South; Suite 755  
Pittsburgh, PA 15220  

Dear Mr. Polka:  

Thank you for appearing before the Subcommittee on Communications and Technology on Tuesday, January 30, 2018, to testify at the hearing entitled "Closing the Digital Divide: Broadband Infrastructure Solutions."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

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Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

[
Signature]

Chairman  
Subcommittee on Communications and Technology

cc: The Honorable Michael F. Doyle, Ranking Member, Subcommittee on Communications and Technology

Attachment
The Honorable Steve Scalise

1. I have long fought to eliminate unnecessary rules and regulations that hinder innovation, stifle job creation in our economy, and limit access and/or choices for consumers. One area where I have a particular interest is in the video marketplace, where the '92 Cable Act was based on a dramatically different set of industry competition than exists today. The result of these outdated rules and regulations is less competition, less innovation, and less freedom for consumers and job creators alike. As a result, small and rural multichannel video programming distributors (MVPDs) are increasingly forced to choose between offering video service at a loss or dropping the serve offer altogether. The and eliminate outdated laws for the sake of consumers and other stakeholders so that there is finally a more level playing field.

   a. Please explain what, if any tradeoffs you have seen your member companies make as it relates to investment and the buildout of broadband as business operation costs increase, and the freedom to innovate and meet consumer demand remain stuck in the 20th century.

Answer:

Small and medium-sized multichannel video programming distributors (MVPDs) are at the forefront of deploying new high-performance broadband networks, especially in rural areas. Over the past five years, ACA members have invested more than $10 billion to upgrade and expand their networks, both in rural areas and as overbuilders bringing competition in urban areas, and they plan to continue to spend billions each year to meet their ever-growing subscribers’ demands for real-time, high-speed access to the Internet and other IP services. ACA members are also using their capital to bring service to unserved areas. To date, ACA members have invested private funds to build out to more than 840,000 homes that the Federal Communications Commission would consider as located in high-cost areas and otherwise be eligible for federal universal service support.

ACA members’ networks support the provision of the triple-play of multichannel video, broadband and phone services. Despite online video’s growth in recent years, most households continue to subscribe to traditional multichannel video service— and continue to take this service as part of a bundle with broadband Internet access. As a result, few MVPDs see a viable business model in offering only broadband today. The viability of multichannel video service is therefore fundamental to MVPDs’ decisions to invest in new broadband deployments.

In recent years, the economics of multichannel video service for MVPDs have been worsening, particularly for smaller MVPDs. As ACA has noted, the cost of content for small cable operator members continues to increase at 10 percent annually while they limit retail rate increases to 4 percent annually. As a result, video margins have declined from 2012 to 2015 from 22 percent to 13 percent, and they have fallen further since then. In addition, cord-cutting has reduced the number of multichannel video subscribers for smaller MVPDs by about 6 percent annually.

In 2015, ACA contracted with the business consulting firm, Cartesian, to develop research and supporting analysis regarding the effect of video programming cost increases on broadband deployment...
in different market scenarios. This study, which ACA published as a paper, “High and Increasing Video Programming Fees Threaten Broadband Deployment,” found that if trends continue, traditional MVPD margins will be reduced substantially each year, and multichannel video service will become a losing proposition for most small to medium-sized providers. As a result of the revenue loss from video, MVPDs will have less free cash available for new investment which in turn will act as a drag on broadband deployment. In fact, because margins are shrinking today, this deleterious effect is already occurring.

ACA applauds your efforts to eliminate outdated rules and regulations that artificially keep broadcast and non-broadcast programming costs higher than would be expected in a free market. By fixing the broken pay television marketplace, the Congress would also be promoting investing in broadband networks.

The Honorable Yvette Clarke

1. I have learned by representing the 9th Congressional District of New York and the Smart Cities Caucus that cities are eager to bring high-speed broadband and 5G technology to their constituents. I am concerned, however, by the recent adversarial tone between the industry and cities. I think it is wrong to characterize cities and industry as adversaries and not partners.

   a. Can you all commit to helping reach a good faith consensus on how to bring high-speed broadband and 5G technology to cities aiming to deploy smart technology for their constituents? What are your plans for this commitment and engagement?

   b. Will you commit to working with my office to resolve some of these disputes, and find a path forward that works for all consumers, cities, and the industry?

Answer:

ACA’s broadband providers share the objective of local governments to bring high-speed broadband to consumers. We are particularly aware of this common aim because many ACA members are municipally-owned providers. We thus have a close connection to local governments, and we recognize the significant contributions they make to their communities. We also know that most other ACA members have excellent working relationships with local governments, and some have even forged partnerships to develop broadband capabilities. ACA continues to work to promote such partnerships and closer relationships between providers and local governments. Given the advantages of working together, ACA stands ready to join efforts aimed at finding consensus between cities and providers on ways to expedite the deployment high-speed broadband networks. Further, ACA commits to working with your office to help resolve any disputes that exist now or may arise later, and on ways to minimize or eliminate these disputes altogether.

Matthew Polka’s Response to Questions for the Record
Subcommittee on Communications and Technology
Closing the Digital Divide: Broadband Infrastructure Solutions
March 5, 2018
Ms. Shirley Bloomfield  
CEO  
NTCA—The Rural Broadband Association  
4121 Wilson Boulevard; Suite 1000  
Arlington, VA 22203  

Dear Ms. Bloomfield:  

Thank you for appearing before the Subcommittee on Communications and Technology on Tuesday, January 30, 2018, to testify at the hearing entitled “Closing the Digital Divide: Broadband Infrastructure Solutions.”

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Monday, March 5, 2018. Your responses should be mailed to Evan Viau, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed to Evan.Viau@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

G. K. Butterfield  
Chairman  
Subcommittee on Communications and Technology

cc: The Honorable Michael F. Doyle, Ranking Member, Subcommittee on Communications and Technology

Attachment
The Honorable Steve Scalise: I have long fought to eliminate unnecessary rules and regulations that hinder innovation, stifle job creating in our economy, and limit access and/or choices for consumers. One area where I have a particular interest is in the video marketplace, where the ’92 Cable Act was based on a dramatically different set of industry competition than exists today. The result of these outdated rules and regulations is less competition, less innovation, and less freedom for consumers and job creators alike. As a result, small and rural MVPDs are increasingly forced to choose between offering video services at a loss or dropping the service offer altogether. We should eliminate outdated laws for the sake of consumers and other stakeholders so that there is finally a more level playing field.

Please explain what, if any, tradeoffs you have seen your member companies make as it relates to investment and the buildout of broadband as business operation costs increase, and the freedom to innovate and meet consumer demand remain stuck in the 20th century.

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 provide first-class broadband and video services to consumers and businesses across rural America.

Even with our member companies averaging 25 employees or less, these small businesses offer advanced communications services that have helped rural communities thrive in the 21st century.

However, providing innovative communications services such as video, mobile and fixed broadband, and voice in rural America does not come without extreme challenges. These cooperatives and small, hometown 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 more than 35 percent of the U.S. landmass—where the average density is about seven customers per square mile, or roughly the average population density for the entire state of Montana.

For many rural providers, offering video services in addition to voice and broadband services is an essential part of making the business case to invest in the first instance and then stay in operation. Bundled packages that include video make our members’ services more convenient and attractive to the customers they serve, and surveys reveal that offering video helps to drive broadband adoption as well.

Moreover, as the sole provider of video in many rural areas, these rural communities rely on the video services provided by our small, rural broadband and video providers. Nearly one-fourth of NTCA’s members report that 90 percent or more of the customers in their service areas cannot receive any over-the-air broadcast signals, and therefore rely upon multichannel video programming distributor (MVPD) services to receive local news, weather reports, and similar benefits of local broadcasts.
Because many rural areas do not receive broadcast television signals, simply removing video from the services provided by our member companies could result in consumers having no access to that content.

The economics of providing rural broadband and video are difficult enough on their own in rural markets, even before one gets to the effects of escalating content costs. The rates that rural consumers pay are rarely sufficient to cover even the costs of operating in rural areas, much less justify the enormous capital expenditures required to deploy reliable, advanced networks in rural America. Unfortunately, the ever-increasing retransmission consent costs associated with providing video services only make matters worse by forcing operators to look to consumers for recovery of such increased costs, undermining the business case for further network investment, or even prompting operators to consider exiting the video service business altogether.

As you rightly noted, the 1992 Cable Act was created in an entirely different video marketplace than what exists today, and it is particularly punitive to rural video providers and the consumers they serve. For example, MVPDs in rural areas are paying more for the odd and striking “privilege” of ensuring broadcast content reaches those many rural consumers who, as noted above, cannot receive over-the-air broadcasts at all due to distance from the broadcaster’s transmission site. In fact, from 2013 to 2015, the compound average annual increase in retransmission consent fees paid by MVPDs was 42.8%.1 Moreover, MVPDs have no choice when negotiating for broadcast signals, as they can only obtain content from one seller due to the Cable Act. Forcing buyers by law toward a single seller is not a “market.”

Therefore, for small and rural MVPDs to continue providing high-quality video for their customers, Congress must consider injecting market forces into an outdated retransmission consent regulatory regime.

And while NTCA believes the 1992 law would benefit from a comprehensive rewrite and retransmission consent reform is much-needed, targeted market-based reforms could help address four key flaws in the interim:

- **Transparency:** Mandatory non-disclosure requirements keep the market value of programming under wraps and in the shadows. MVPDs and consumers should be permitted to see and compare pricing from broadcasters.
- **Buyer Choice:** Rules today artificially restrict the ability to buy similar content from different network affiliates. If content from one affiliate in a Designated Market Area (DMA) is too expensive, allow MVPDs to leverage market forces by purchasing comparable content from the same network’s affiliate in another DMA. Make broadcasters compete for buyers.
- **Consumer Choice:** Consumers should have access to a breakdown of each channel’s actual costs, and the option to lower their bill by opting out of buying any given broadcast channel.
- **Consumer Protection:** Consumers should be permitted to retain access to signals at existing rates pending dispute resolution between broadcasters and MVPDs.

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In addition, any reforms made by Congress or the FCC should ensure the transition to a new ATSC 3.0 broadcast standard is truly voluntary for MVPDs. Broadcasters should not be able to force MVPDs to accommodate new signal standards through the retransmission consent process, nor should consumers be subject to signal degradation or loss as a result of a broadcaster adopting the new standard.

In the end, the antiquated 1992 Cable Act provides broadcasters with a government-backed stranglehold on programming. It is the antithesis of a well-functioning “market,” even if the process is couched in claimed “negotiations.” If the law will not be fundamentally rewritten to reflect today’s video world, technical updates and corrections are needed at least to allow today’s market forces to operate more effectively.

The Honorable Yvette Clarke: I have learned by representing the 9th Congressional District of New York and the Smart Cities Caucus that cities are eager to bring high-speed broadband and 5G technology to their constituents. I am concerned, however, by the recent adversarial tone between industry and cities. I think it is wrong to characterize cities and industry as adversaries and not partners.

Can you all commit to helping reach a good faith consensus on how to bring high-speed broadband and 5G technology to cities aiming to deploy smart technology for their constituents? What are you plans for this commitment and engagement? Will you commit to working with my office to resolve some of these disputes, and find a path forward that works for all consumers, cities, and the industry?

NTCA is committed to working with your office as well as all other Congressional offices to ensure that we can find solutions to decreasing the digital divide and building out the next generation of broadband in America. While most of our members serve largely rural populations, we understand it takes a joint-effort on behalf of the entire communications industry to implement world-class Internet services across America. To the extent that NTCA can be helpful in assisting with broadband buildout in areas both urban and rural, we’re more than happy to do so.
Mr. Scott Slesinger
Legislative Director
Natural Resources Defense Council
1152 15th Street, N.W.; Suite 300
Washington, DC 20005

Dear Mr. Slesinger:

Thank you for appearing before the Subcommittee on Communications and Technology on Tuesday, January 30, 2018, to testify at the hearing entitled “Closing the Digital Divide: Broadband Infrastructure Solutions.”

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Sincerely,

[Signature]

[Name]
Chairman
Subcommittee on Communications and Technology

cc: The Honorable Michael F. Doyle, Ranking Member, Subcommittee on Communications and Technology

Attachment
The Honorable Yvette Clarke

1. I have learned by representing the 911 Congressional District of New York and the Smart Cities Caucus that cities are eager to bring high-speed broadband and SG technology to their constituents. I am concerned, however, by the recent adversarial tone between industry and cities. I think it is wrong to characterize cities and industry as adversaries and not partners.

   a. Can you all commit to helping reach a good faith consensus on how to bring high-speed broadband and SG technology to cities aiming to deploy smart technology for their constituents? What are your plans for this commitment and engagement?

   RESPONSE: NRDC is not directly involved in deployment of broadband. Our issue is that for all major federal actions the public’s right to comment and participate on the economic and environmental impacts should not be emasculated because some groups see only benefits to the proposed project. For instance, if a community has a plan for deployment that allows communications companies to avoid low income communities, it is possible that the National Environmental Policy Act is the only opportunity for adversely affected communities and individuals to comment on such decisions. This becomes a bigger problem as bills are introduced to preempt local governments from regulating deployment.

   b. Will you commit to working with my office to resolve some of these disputes, and find a path forward that works for all consumers, cities, and the industry?

   RESPONSE: Yes

The Honorable Anna G. Eshoo

1. Many of the majority bills slash environmental regulations, preempt state and local governments, and limit federal oversight, all under the theory that at some point, there will be enough incentive provided for providers to build to areas where so far they have not. But the legislation provide no guarantees or requirements that providers will actually do so.

   a. Is there any actual data out there to back up the false choice that relinquishing environmental protections or local autonomy is necessary or helpful to spur broadband deployment?

   RESPONSE: We are not aware of such data. We find that many industries claim that their projects are being unnecessarily slowed by the environmental review and permitting process. However, in the vast majority of cases, NEPA is a scapegoat when the real problem is money. The Army Corps of Engineers has $97 billion in projects that have
cleared all environmental reviews but remain stuck because of a lack of funding.\(^1\) Currently, the Corps' budget is $5 billion a year. The problem clearly is money, not environmental reviews. A recent Treasury study looked at 49 projects to determine why they were delayed. In 39 of 49 projects, the main cause was lack of funding. The other cause of some delay was local opposition and local zoning.

Testimony seems to indicate the major problem of broadband deployment, particularly in rural and poor areas, is the lack of high return for the broadband companies not the requirement to hear from the affected communities and citizens.

b. What are some real guarantees these companies have to offer the American people, and would you support in legislative language, to ensure that consumers get something in return for everything these bills give away? What meaningful requirements should providers agree to in exchange for these favors?

**RESPONSE:** NRDC has no views on this.

\(^1\) "However, according to the Corps, there is a current backlog of projects valued at $96 billion ($75 billion in project construction and $21 billion for dam safety and operations and maintenance). In comparison, Corps funding between FY2004-FY2018 has only averaged just over $5 billion (in nominal terms) annually." Republican staff memo for hearing on Infrastructure Delays: https://transportation.house.gov/uploadedfiles/2018-01-18-water_ssm_final.pdf
Ms. Joanne S. Hovis  
President  
CTC Technology and Energy  
1061 Concord Street  
Kensington, MD 20895  

Dear Ms. Hovis:  

Thank you for appearing before the Subcommittee on Communications and Technology on Tuesday, January 30, 2018, to testify at the hearing entitled “Closing the Digital Divide: Broadband Infrastructure Solutions.”

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Sincerely,

Mark Blackburn  
Chairman  
Subcommittee on Communications and Technology

cc: The Honorable Michael F. Doyle, Ranking Member, Subcommittee on Communications and Technology

Attachment
March 5, 2018

The Honorable Marsha Blackburn
Chairman, Subcommittee on Communications and Technology
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

Re: Response to follow-up questions

Dear Ms. Blackburn,

It was my privilege to testify before your subcommittee as part of your January 30, 2018, hearing entitled “Closing the Digital Divide: Broadband Infrastructure Solutions.”

Public-private partnerships—especially ones in which public entities build fiber-optic networks that may be used by private service providers—can be a crucial part of the broadband solution for rural and unserved urban areas throughout the United States.

Attached please find my answers to your Subcommittee members’ additional questions. Please do not hesitate to contact me if I can provide any further information.

Sincerely,

Joanne Hovis
President, CTC Technology & Energy

Attachment

By email: Evan.Viau@mail.house.gov

Columbia Telecommunications Corporation
10613 Concord Street • Kensington, MD 20895 • Tel: 301-933-1488 • Fax: 301-933-9340 • www.ctcnet.us
Question from the Honorable Yvette Clarke

1. I have learned by representing the 9th Congressional District of New York and the Smart Cities Caucus that cities are eager to bring high-speed broadband and 5G technology to their constituents. I am concerned, however, by the recent adversarial tone between industry and cities. I think it is wrong to characterize cities and industry as adversaries and not partners.

   a. Can you all commit to helping reach a good faith consensus on how to bring high-speed broadband and 5G technology to cities aiming to deploy smart technology for their constituents? What are your plans for this commitment and engagement?

Answer:

I agree with the sentiments in your preamble. Public and private entities can and should work together to solve our nation's broadband challenges. This requires pursuing a full range of options, including locally driven efforts to utilize public assets to attract private investment and to deploy public networks over which private providers can offer service. Such partnerships can work especially well in areas where there exists insufficient return on investment for private companies to shoulder all infrastructure costs.

To answer your question, yes, I can make a commitment. My company, CTC Technology & Energy, has been a leader in forging or proposing public-private partnerships in areas as diverse as Westminster, Maryland; Huntsville, Alabama; and big cities like San Francisco and Seattle. These public-private collaborations serve the national interest. We will continue to help localities throughout the United States pursue them.

Many localities are forging ties with private entities on their own. Hundreds of localities have reached out to companies including Google Fiber, AT&T, C-Spire, Ting Internet, MetroNet, ALLO Communications, and many others to offer what amount to economic development packages and other incentives. These local collaborations benefit both private and public entities.

   b. Will you commit to working with my office to resolve some of these disputes, and find a path forward that works for all consumers, cities, and the industry?
I am hopeful that I can assist with this process. In my experience, local governments work very hard to collaborate with private industry on deployment issues and are very motivated to attract private investment in all forms of broadband, including advanced wireless technologies, often called "4G densification" and "5G." In my experience, industry assertions that localities deliberately get in the way of deployments are simply inaccurate. To the contrary, localities seek to find common ground for industry and community interests, which include the need for better service and, often, more extensive deployments.

Questions from the Honorable Anna G. Eshoo

1. As Congress explores how to remove barriers to broadband deployment, do you believe that targeted federal legislative solutions like CLIMB ONCE and the Community Broadband Act, which simply open the doors for local autonomy, can be helpful in expediting connectivity and economic development?

   Yes, Climb Once can be enormously helpful. Cumbersome procedures associated with attaching new wires to poles can be a large source of uncertainty, excess cost, and delays in improving the nation’s broadband infrastructure. Under Climb Once, states and localities would become free to implement common-sense policies to streamline such procedures (often called “one-touch-make-ready”).

   The opposition to Climb Once seems to me to have little merit. It makes no more sense to require fiber deployers to duplicate efforts in this area than it would to require them to dig separate trenches for each new underground utility. (Indeed, much like “Climb Once,” “Dig Once” policies are important tools for municipalities to save tax dollars through coordinated planning—something my firm documented in our 2017 Technical Guide to Dig Once Policies.) The FCC could play a constructive role—and could resolve incumbent concerns—by establishing best practices for such local efforts.

   Regarding the Community Broadband Act: Localities should be free to build infrastructure that meets their needs, including broadband infrastructure. At least 21 states restrict this activity. As you know, in 2015 the FCC attempted to block restrictive state laws to protect the rights of municipalities in this area. A later court ruling found that the FCC had no legal power to preempt state laws in this regard—but the court did not disagree with the substantive analysis the FCC presented (based on an extensive record) about the value of community-based broadband efforts or the destructive outcomes of the efforts to curtail local efforts.

2. A recent Harvard study found that contrary to claims that municipal broadband, or even the threat of municipal broadband will reduce network investment, it is actually the
state bans on municipal broadband that result in less overall investment in deployment, and that community-owned fiber to-the-home (FTTH) networks in the United States generally charge less for entry-level broadband service than do competing private providers, and don’t use initial low “teaser” rates that sharply rise months later.

a. Doesn’t that demonstrate that consumers need more competition? Do you agree with the FCC’s determination last April that a sole broadband provider counts as a sufficient level of competition?

Answer:

Taking your second question first, I find it troubling, and almost laughable, that the FCC suggests that one wired broadband provider represents a form of competition when the only other provider is a telephone company offering slow DSL service that does not meet the definition of broadband.

On your first question, which cites the Harvard study, let me take a step back to explain what the study found and to address recent spurious attacks on it. (I would not be surprised if these attacks are circulating within other responses to these questions.) I will then discuss the important role of competition.

In January 2018 a research project within Harvard’s Berkman Klein Center for Internet & Society reported that municipally owned fiber networks in the United States generally provided lower and clearer prices for their least-expensive plans that minimally met the FCC’s broadband threshold—25 Mbps download, 3 Mbps upload—than did local private competitors.1 (The study compared broadband-minimum plans regardless of the precise advertised speed over the broadband threshold. Those advertised speeds varied from provider to provider.) Additionally, the study found that unlike private incumbent providers, these municipal fiber networks did not use gimmicks like “teaser” rates.

Subsequent criticisms of the study—generally from industry-funded sources—used misleading lines of argument. One line of attack used “price per megabit” calculations for download speeds only to claim that private providers’ and municipal providers’ basic broadband service were far closer in price, contrary to study findings. Yet this attack was false and misleading because it completely ignored upload speeds, which were much faster with the municipal networks.

Perhaps more importantly, “price per megabit” arguments have limited meaning because consumers cannot purchase broadband service by these units. They can only select among speed tiers that are offered by their providers—and that is what the study compared. Additionally, the

1 https://cyber.harvard.edu/publications/2018/01/communityfiber
marginal value of additional megabits declines as speeds increase (e.g., the difference between having 1 Mbps or 20 Mbps is far more significant than the difference between having 40 Mbps or 60 Mbps).

Critics also pointed to financial difficulties at a relative handful of municipal networks as a basis for attempting to discredit the entire study and devalue all municipal networks.

Interestingly, none of the critics called for the collection and release of more and better data that would allow for deeper research in the public interest—a topic to which I will return at the end of this letter.

Now that I’ve discussed the study, let me address your question about whether the study shows that competition has value. This study did not attempt to measure the effects of competition, which would have required looking at pricing in a control group of municipalities lacking competition. But we already know that competition produces dramatic positive effects. A 2015 White House report on community broadband pointed to the example of the municipal network in Chattanooga, Tennessee (built by EPB, the city utility):

“EPB’s efforts have encouraged other telecom firms to improve their own service. In 2008, for example, Comcast responded to the threat of EPB’s entrance into the market by investing $15 million in the area to launch the Xfinity service—offering the service in Chattanooga before it was available in Atlanta, GA. More recently, Comcast has started offering low-cost introductory offers and gift cards to consumers to incentivize service switching. Despite these improvements, on an equivalent service basis, EPB’s costs remain significantly lower.”

Similar effects have been seen in other areas. For example, after Kansas City assisted with the pioneering rollout of Google Fiber in 2012 and 2013, both Comcast and Time Warner Cable (now Charter) in 2014 announced they would significantly increase speeds in the area. And in 2015, AT&T, which had previously offered only slow DSL, announced it would launch “U-verse” (its name for enhanced broadband speeds over copper telephone lines) in parts of Kansas City, Missouri, and the metro area. In my own observations, even the prospect of potential competition has led incumbents in communities such as Santa Cruz, CA to increase speeds for existing service tiers with no increase in prices and to greatly improve marketing and sales efforts in the community. There are many other examples of this kind.

This topic cries out for more data. Yet the research community lacks access to a great deal of important primary data about broadband markets. Incredibly, the FCC does not comprehensively

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collect data on broadband speeds available by address or adoption by address. And the Commission collects very little data on broadband prices. This makes it impossible to fully understand not only the precise effects of competition, but also the interplay between broadband price, speed, adoption, and various measures of national productivity, public health, education, and labor market participation. Without complete data available, it will remain extremely difficult for economists and social scientists to conduct research on broadband in the national interest.

Thank you for the opportunity to answer these additional questions.
Ms. Elin Swanson Katz
Consumer Counsel
Connecticut Consumer Counsel
10 Franklin Square
New Britain, CT 06051

Dear Ms. Swanson Katz:

Thank you for appearing before the Subcommittee on Communications and Technology on Tuesday, January 30, 2018, to testify at the hearing entitled "Closing the Digital Divide: Broadband Infrastructure Solutions."

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Marsha Blackburn
Chairman
Subcommittee on Communications and Technology

cc: The Honorable Michael F. Doyle, Ranking Member, Subcommittee on Communications and Technology

Attachment
Committee on Energy and Commerce  
Subcommittee on communications and Technology  
Hearing Entitled “Closing the Digital Divide: Broadband Infrastructure Solutions.”  
January 30, 2018  

Responses of Elin Swanson Katz to Additional Questions for the Record  

Subcommittee Member - The Honorable Yvette Clarke  
I have learned by representing the 9th Congressional District of New York and the Smart Cities Caucus that cities are eager to bring high-speed broadband and 5G technology to their constituents. I am concerned, however, by the recent adversarial tone between industry and cities. I think it is wrong to characterize cities and industry as adversaries and not partners.  

As a state consumer advocate for public service utilities and internet service provider ratepayers and broadband users, and as the head of the statutory State Broadband Office (which is within the Office of Consumer Counsel), I have learned that my primary constituency is communities of all sizes, including their residents, businesses (small and large), and community anchor institutions. By developing champions and allies within each of the state’s 169 municipalities, I not only fully understand the needs and problems of the state’s ratepayers and broadband users, but I am able to mobilize them to support administrative, judicial, and legislative initiatives that must be mounted in order to push back against monopoly/duopoly utilities in order to acquire a fair and equitable deal for communities.  

The answer to your question in part depends on how your definition of “industry.” Assuming that you mean the incumbent internet service providers (ISPs), I too have seen the tension between the ISPs and the municipalities. As cable and telephone companies recognize the disruption to their business plans in all markets of the United States from edge providers and rapidly emerging changes in technology, they are essentially committed to maintaining the business model they’ve created, and thus must fight back against advancing technologies. Everyone recognizes that fiber optic network infrastructure is certainly the transmission technology of the future, but the incumbents are often saddled with multi-billion dollar sunk cost investments in copper and coaxial cable technologies, which continue to provide great revenues, but which are quickly becoming obsolete.  

We have tried to work with our incumbents with and on behalf of our municipalities, but we have found the incumbents become extremely defensive when we identify unserved or underserved areas, especially within our urban communities. Nonetheless, it is my hope that we head towards the inevitable “fiber future” where we see fiber everywhere, that we can collaborate with our incumbents and munis to develop and share fiber infrastructure. I also see much hope with small ISPs who are looking to enter new markets. They are very willing to work with our municipalities. In fact, the first community-wide fiber network in Connecticut is being developed in East Hartford through a public-private partnership between SiFi Networks and the town, SiFi being a new entrant to Connecticut.
If, on the other hand, your focus is on "industry" meaning non-telecom businesses, we see much collaboration. Residents and businesses are actually allies in the market for Internet access since the reality is that the incumbent providers focus, rightly and pursuant to law, on their shareholders more than on their customers.

Thus, it is essential that cities and industry must band together as partners and not adversaries if they are to achieve the goals of better, cheaper, faster Internet access, equitably provided to all communities and demographic groups. That is the goal of my office and my staff and I fight a daily battle to enlist the cooperation and collaboration of cities and industry.

I think engaging with the incumbent Internet service providers is an essential element of my role as a state utility services consumer advocate, and while there is often fearsome resistance to change and the market disruption that is central to Internet access these days, it is part of my job to support a transition by the incumbents to a new business plan. Continuing to protect their monopoly market shares in the inter access market does not make sense when the future is so profoundly disrupting old models. These businesses are like "melting ice cubes"—they look solid and real, but they are melting away. It would be like trying to protect the market share of typewriter companies in the face of personal computers and laser printers.

Can you all commit to helping reach a good faith consensus on how to bring high-speed broadband and 5G technology to cities aiming to deploy smart technology for their constituents? What are your plans for this commitment and engagement?

Consumer Counsel Katz, response: My short answer is yes, absolutely, I make that commitment. The Office of Consumer Counsel and State Broadband Office have engaged in developing RFI/RFP documents on behalf of dozens of Connecticut municipalities, ranging from New Haven and Hartford, to collaborations of rural towns, and the suburban towns in between for many years now. By preparing for such engagements, the cities learn what they must do in preparation for requesting funding and construction help from private industry in order to bring digital inclusion and fiber network broadband Internet access each and every one of their citizens, residents and businesses. Helping the communities in Connecticut locate and achieve funding from the state and federal governments, as well as from private equity and other financing institutions, is a fundamental goal of my staff and I in our daily work in helping communities recognize the benefits of affordable broadband Internet access, equitable distributed to all demographic groups.

As the President of the National Association of State Utility Consumer Advocates (NASUCA), I can also speak to the effort across the electric sector to define smart grid technology (there are myriad definitions of a "smart city," for example) and identify how it can be effectively deployed to municipalities. In my position as President, I continually push for more collaboration and dialogue between the electric sector and the telecommunications sector on cost-effective infrastructure deployment. If our electric utilities are creating private fiber networks to support smart grid initiatives at ratepayer expense, then I feel strongly that that infrastructure should maximize its benefits to those ratepayers. Why can't fiber deployed by an electric utility to create a smart city also be used to provide affordable high-speed broadband to those same consumers? It can be, but there's little incentive for most electric utilities to plan for such dual use. I will admit that this is at present a tough row to hoe—the incumbents don't want to engage in this dialogue, and the electric utilities are busy focusing on their own needs. But this is an area in
which we need to keep pushing and expecting synergies and maximum usage of ratepayer-funded infrastructure.

Will you commit to working with my office to resolve some of these disputes, and find a path forward that works for all consumers, cities, and the industry?

I would be delighted to partner with your office, Representative Clarke, since I'm sure that Brooklyn's Ninth Congressional District, the center and heart of Brooklyn, does not differ greatly in the problems and potential solutions that we find in our state's major cities, many of which my office already works with on a regular basis. Bridgeport, Hartford, and New Haven all have gotten the "broadband bug," and recognize the digital inequities that the incumbent providers have imposed on cities like these.

For instance, I am incensed and my testimony before your Subcommittee on January 31, 2018 reflected my passion about this issue, that the current Administration and the ISP industry are propagating the myth that only "rural America" needs help or is unserved by affordable broadband internet access. This is patently untrue as the experience of my staff in the "fields" of Connecticut's major cities demonstrates: the incumbent market companies have turned their backs on low income inner city citizens and businesses, charging exorbitant rates for extremely slow service. The virtually complete deregulation of these services causes there to be little or no recourse for these citizens and businesses. Intentional or not, this is de facto "redlining" of poor ethnic-minority urban communities.

Rural areas are in fact needy, of course, and Connecticut specifically does not have rights to USDA funding or other "rural" supports from the federal government due to population rules, thus cutting off potential funding. However, urban areas also suffer from a lack of subsidies for urban poor, and there is an alarming number of Connecticut residents and businesses that are left behind as the digital age progresses, but pass them by. As I said in my testimony, if it's happening in Connecticut, the wealthiest state in the nation, it's happening everywhere.

I commend this report by my Office for your attention:


The OCC conducted site visits at business locations in urban and rural areas to investigate a small sample of broadband customer experiences.

Although Connecticut is a prosperous state with large areas of urban and suburban densities, Connecticut businesses, institutions, and residents have significant challenges obtaining broadband services.

Our expert, CTC Technologies, which is headed by the amazing Joanne Hovis who also testified with me, found a range of serious broadband challenges in the State, including:

1) Maximum speeds are often far less than what businesses need for their current operations

2) There are limited or no affordable competitive options for broadband services for businesses in urban areas
3) Businesses’ growing needs for broadband will further exceed the available broadband services

4) Businesses face long delays in obtaining services, or are unable to obtain service even when infrastructure is relatively nearby.

Further holdings included:

Small and medium-sized businesses are being constrained by lack of broadband infrastructure and, where infrastructure is available, lack of competitive options (leading to higher prices and limited service).

All of the businesses we visited in Hartford reported that they are hampered by the low speed and quality of their existing services from the telephone and cable incumbent internet service providers. The business owners also identified the cost of those services as an area of concern.

Subcommittee Member - The Honorable Anna G. Eshoo

As Congress explores how to remove barriers to broadband deployment, do you believe that targeted federal legislative solutions like CLIMB ONCE and the Community Broadband Act, which simply open the doors for local autonomy, can be helpful in expediting connectivity and economic development?

Climb Once: The Connecticut Office of Consumer Counsel, which includes the Broadband Office, has been a national leader in initiating novel and successful ideas for streamlining and increasing equity in the public rights of way (PROW) in our state. I have said more than once that “utility poles are sexy,” because they are the ugly, unsung heroes of broadband deployment.

We have convinced the state regulator to order a “Single Pole Administrator” (SPA) in order to produce a far more efficient pole management system instead of the nearly universal dysfunctional lack of management usually found in PROW processes across the US. An element of that is a centralized database detailing the infrastructure on the nearly 900,000 poles in Connecticut, and which provides a process for notification of work to be performed, a timetable for each attacher to follow to accomplish their work, and a system by which the SPA has the authority (as an agent of the state regulatory agency) to perform work that has not been accomplished by an attacher in a timely fashion.

We hope this process will soon (or eventually) incorporate a Climb Once (or One Touch) process, which is an element we continue to battle for in spite of opposition from the local telephone companies. My staff recognized long ago that to construct high-speed networks, broadband providers need access to utility infrastructure, such as utility poles and conduits, on a consistent, cost-effective, and timely basis. The expense and complexity of obtaining access to public rights-of-way in some jurisdictions increases the cost and slows the pace of broadband network investment and deployment.

In particular, access to utility poles is an essential and generally time-consuming part of the process. Building out a new network within a metro area requires running fiber along tens of thousands of poles. The process of getting poles ready for attachments—known as “make-ready” work—typically requires asking other companies to move their existing communications
equipment to make room for a new entrant’s equipment on the same poles. Oftentimes, there are multiple attachments on the pole already (e.g., telecommunications, cable, etc.).

Currently, operators move their lines sequentially—creating delays and causing multiple disruptions in a neighborhood. Imagine being a new attacher and having to reach out to as three (or more) separate companies for every single pole, and to get approval from each of them to move their lines or to wait for them to sequentially schedule their own workers to effectuate the move. This approach adds months (if not years) to the construction schedule, and may make it prohibitively difficult for competition and faster speeds to come to many markets. What’s more, the cost of make-ready can be both high and unpredictable, varying widely among providers and poles.

We are hopeful of actually achieving a ClimbOnce process to incorporate the electric companies in our state which serve as our Single Pole Administrators.

Similarly, with regard to the Community Broadband Act, I and my Office have always supported this fabulous idea, one that may be said by some to be ahead of its time, but which I say is the most direct path to the inevitable future of provide affordable broadband internet access to all citizens, everywhere. My office has been fully engaged in the promotion of affordable broadband<https://en.wikipedia.org/wiki/Broadband> access for a decade now and our focus has always been on supporting municipal governments with the rights and means to provide telecommunications capability and services. We recognized long ago that neither the federal government nor the states are likely to presently engage in supporting municipal fiber networks, but rather that communities themselves are the most likely to make this happen.

While Connecticut does not now suffer from a state statutory ban on public broadband deployments, there is extreme resistance to municipal broadband from the incumbent telephone and cable providers, and their allies in the executive and legislative branches of state and municipal governments. In fact, in every legislative session since its creation, we have had to fight fiercely to preserve the State Broadband Office, which was created in 2015. We have survived, quite frankly, because of a small but dedicated (and growing) band of legislators who understand that a state that hopes to implement progressive broadband policy needs an office to do so. My office therefore expends great energy and time on the goal of eliminating existing barriers to broadband development, and that we completely support the provisions of The Community Broadband Act.

As noted in my comments and elsewhere in these responses, my Office has long been a central player in supporting municipal efforts to develop public-private partnerships with finance and fiber construction companies to provide public telecommunications services to overcome the market resistance and digital inequities that presently exist across Connecticut and the US.

I would be delighted to help you in any efforts to promote S. 742 in the hopes of achieving federal statutory support for the work that my Office is now performing in Connecticut.

A recent Harvard study found that contrary to claims that municipal broadband, or even the threat of municipal broadband will reduce network investment, it is actually the state bans on municipal broadband that result in less overall investment in deployment, and that community-owned fiber to-the-home (FTTH) networks in the United States generally charge less for entry-level broadband service than do competing private providers, and don’t use initial low "teaser" rates that sharply rise months later.
My office has worked with the Berkman Klein Center for Internet & Society Research for many years and we greatly admire their work, including the January 2018 article you’ve cited, Community-Owned Fiber Networks: Value Leaders in America<https://dash.harvard.edu/handle/1/34623859> which detailed from comparisons in 27 communities that most community-owned FTTH networks charged less and offered prices that were clear and unchanging, whereas private ISPs typically charged initial/ow promotional or “teaser” rates that later sharply rose, usually after 12 months. The authors found that in 23 cases, the community-owned FTTH providers’ pricing was lower when averaged over four years.

As noted above, we regard our constituency to be the 169 towns of Connecticut since we believe that it is the communities of this country and our state that have the gumption and determination to overcome the resistance of the incumbent ISPs to implementing affordable broadband internet access, including by construction of fiber networks. Our own research has demonstrated that the incumbents operating in Connecticut overcharge ruthlessly and have little or no business plans to invest capital expenditures in advanced technology, except in the most profitable areas, which are usually densely populated and/or most affluent. I have personally asked the management of Comcast in our state when they intend to bring DOCSIS 3.1 to the residents, businesses, and community anchor institutions, and the response has always been a hedge or hollow promise. The telephone company, Frontier, is teetering on bankruptcy and is very unlikely to make any investments in Connecticut that would make a difference in digital equity or access.

Thus, we firmly believe that it is the role of the municipalities to step up and make the effort to develop public-private partnerships with investors and construction companies that have the foresight to agree that fiber networks are the key to creating affordable broadband internet access for all addresses across Connecticut.

Doesn’t that demonstrate that consumers need more competition?

Absolutely: we have demonstrated over the last decade that my Office has been actively engaged in promoting affordable broadband internet access for all addresses across Connecticut, that 1) there is active and desperately needed demand for broadband internet access, 2) the supply provided by the incumbent internet providers is inadequate and too expensive for a high-tech state like Connecticut, thus depriving its residents and businesses of the access they need at the prices they can afford, thus leading to the conclusion 3) that competition is needed in the market to drive the incumbents to make the necessary investments to bring Connecticut into the Digital Age, or to drive the incumbents out of the market by reducing their market share through the provision of better, faster, and cheaper internet access.

As I serve as the advocate for electricity, natural gas, water AND telecommunications, I know from my work in the utility space that to protect consumers from monopoly power, you either regulate them or introduce competition. Since there is at present not much hope of regulation of our powerful incumbents, the ONLY solution to protect consumers from “monopoly rents” is competition. Unfortunately, I have found that everyone loves competition except for when it comes to their business.

Do you agree with the FCC’s determination last April that a sole broadband provider counts as a sufficient level of competition?
Absolutely not. The April 2018 proposal from FCC Chairman Ajit Pai will undoubtedly hurt small business customers of ISPs. Our Office represents not only residents and community anchor institutions across Connecticut, but a large part of our time and effort is poured into advocacy on behalf of small businesses. It is small businesses that have the desperate need for affordable broadband internet access, but which lack the resources to pay the astronomical and quite ridiculous prices demanded by the ISPs operating in our state. These charges can actually be $10,000 a month for less than one gigabit of access speed, and that following many thousands of dollars charged for the initial construction of a fiber line, even simply from a state road into a building 50 feet away!

The FCC plan to eliminate price caps in much of the business broadband market uses an unfair test for determining whether customers benefit from competition. Even if a business that needs broadband has only one choice today, the FCC plans to consider the local market competitive if there's merely another broadband provider within a half mile. As we have seen time and again, half a mile away can seem like the distance to the moon for a small business if it costs $100,000 or more to connect.

Small businesses want better broadband service at lower prices—they shouldn't have to accept a lower level of service to reduce costs, or pay more for the same services. In Connecticut, we are already seeing the ILEC (Frontier) attempting to charge higher rates for wholesale broadband service than they do for retail service, much like the legacy telephone market did. If the CLEC industry fails to ramp up, which seems likely in light of the new Administration and Pai FCC conduct to date, then the market will not provide the level of competitive pressure for this business segment that would create price relief while increasing provision of adequate service quality and capacity.