

BROADBAND EQUITY: ADDRESSING DISPARITIES IN ACCESS AND AFFORDABILITY

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C O N T E N T S

	Page
Hon. Mike Doyle, a Representative in Congress from the Commonwealth of Pennsylvania, opening statement	2
Prepared statement	3
Hon. Anna G. Eshoo, a Representative in Congress from the State of California, prepared statement	5
Hon. Robert E. Latta, a Representative in Congress from the State of Ohio, opening statement	5
Prepared statement	6
Hon. Frank Pallone, Jr., a Representative in Congress from the State of New Jersey, opening statement	7
Prepared statement	8
Hon. Jerry McNerney, a Representative in Congress from the State of California, prepared statement	9
Hon. Cathy McMorris Rodgers, a Representative in Congress from the State of Washington, opening statement	10
Prepared statement	11

WITNESSES

Joi Olivia Chaney, Senior Vice President, Policy and Advocacy, and Executive Director, Washington Bureau, National Urban League	13
Prepared statement	16
Answers to submitted questions	258
George S. Ford, Ph.D., Chief Economist, Phoenix Center for Advanced Legal and Economic Public Policy Studies	22
Prepared statement	25
Additional material submitted for the record ¹	
Answers to submitted questions	261
Francella Ochillo, Executive Director, Next Century Cities	41
Prepared statement	43
Chris Lewis, President and Chief Executive Officer, Public Knowledge	53
Prepared statement	55
Answers to submitted questions	263

SUBMITTED MATERIAL

Letter of April 6, 2021, from ACA Connects–America’s Communications Association, et al., to Hon. Rosa DeLauro, et al., submitted by Mr. Doyle	112
Report of the Information Technology and Innovation Foundation, “Broadband Myths: Are High Broadband Prices Holding Back Adoption?,” by Doug Brake and Alexandra Bruer, February 2021, submitted by Mr. Doyle	117
Statement of Asian Americans Advancing Justice, et al., submitted by Mr. Doyle	130
Article of April 22, 2021, “Here’s how we end the digital divide,” by Angela Siefer, Austin American-Statesman, submitted by Mr. Doyle	137

¹The additional material is included in a version of Dr. Ford’s statement that has been retained in committee files available at <https://docs.house.gov/meetings/IF/IF16/20210506/112553/HHRG-117-IF16-Wstate-Ford-20210506.pdf>.

	Page
Article of April 19, 2021, “Focusing on Affordability: What Broadband Adoption Rates in Cities Tell Us About Getting More People Online,” by John B. Horrigan, Benton Institute for Broadband & Society, submitted by Mr. Doyle	139
Report of the Technology Policy Institute, “Does Competition Between Cable and Fiber Increase Adoption?,” by Scott Wallsten, April 2021, submitted by Mr. Doyle	142
Letter of May 5, 2021, from the Electronic Frontier Foundation to Mr. Doyle and Mr. Latta, submitted by Ms. Clarke	154
Letter of May 5, 2021, from the National Digital Inclusion Alliance to Mr. Pallone, submitted by Mr. Doyle	160
Letter of May 5, 2021, from Mary R. Greal, President, Healthcare Leadership Council, to Mr. Doyle and Mr. Latta, submitted by Mr. Doyle	166
Letter of May 6, 2021, from the Western Governors Association to Mr. Doyle and Mr. Latta, submitted by Mr. Doyle	168
Letter of May 6, 2021, from Wade Henderson, Interim President and Chief Executive Officer, and LaShawn Warren, Executive Vice President for Government Affairs, Leadership Conference on Civil and Human Rights, to Mr. Doyle and Mr. Latta, submitted by Mr. Doyle	175
Letter from Donna Rattley Washington, Founder, Student Internet Equity Coalition, to Mr. Doyle, submitted by Mr. Doyle	179
Letter of April 23, 2021, from Clarence E. Anthony, Chief Executive Officer and Executive Director, National League of Cities, to Mr. Doyle and Mr. Latta, submitted by Mr. Doyle	181
Study by Free Press, “Price Too High and Rising: The Facts about America’s Broadband Affordability Gap,” S. Derek Turner, submitted by Mr. Doyle ²	
Report of Reimagine Appalachia, “Broadband Build the Future,” submitted by Mr. Doyle ²	
Report of the Student Internet Equity Coalition, “Student Internet Equity Coalition Policy Proposal to Connect 29 Million Middle and High School Students to Internet and Computer Access at Home,” submitted by Mr. Doyle	185
Letter of May 6, 2021, from Jonathan Spalter, President and Chief Executive Officer, US Telecom—The Broadband Association, to Mr. Doyle and Mr. Latta, submitted by Mr. Doyle	187
Letter of May 6, 2021, from Grover G. Norquist, President, Americans for Tax Reform, to Mr. Doyle and Mr. Latta, submitted by Mr. Doyle	191
2020 Communications Marketplace Report, Federal Communications Commission, submitted by Mr. Latta ²	
Report on behalf of USTelecom—The Broadband Association, “2020 Broadband Pricing Index,” by Arthur Menko, Telcodata and Business Planning, Inc., submitted by Mr. Latta	193
Article of October 10, 2019, “Broadband adoption is on the rise, but states can do much more,” by Lara Fishbane and Adie Tomer, Brookings, submitted by Mr. Latta	205
Study by the Phoenix Center for Advanced Legal and Economic Public Policy Studies, “OTI’s Cost of Connectivity 2020 Report: A Critical Review,” by George S. Ford, Ph.D., July 20, 2020, submitted by Mr. Latta	224
Study by the Phoenix Center for Advanced Legal and Economic Public Policy Studies, “Subsidizing Broadband: Price, Relevance, and the Digital Divide,” by George S. Ford, Ph.D., July 7, 2020, submitted by Mr. Latta	234
Study by the Phoenix Center for Advanced Legal and Economic Public Policy Studies, “Are Broadband Prices Declining? A Look at the FCC’s Price Survey Data,” by George S. Ford, Ph.D., October 26, 2020, submitted by Mr. Latta	242
Report of the Technology Policy Institute, “Learning from the FCC’s Lifeline Broadband Pilot Projects,” by Scott Wallsten, March 2016, submitted by Mr. Latta ²	

²The information has been retained in committee files and is available at <https://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=112553>.

VII

	Page
Report of the Advanced Communications Law Policy Institute at the New York School of Law, "The Value of Context and Rigor: A Review of OTT's Cost Of Connectivity 2020 Report," by Michael J. Santorelli and Alexander Karras, July 2020, submitted by Mr. Latta ³	
Report of the Technology Policy Institute, "Increasing Low-Income Broadband Adoption through Private Incentives," by Scott J. Wallsten, July 2020, submitted by Mrs. Rodger ³	
Letter of May 6, 2021, from Jeffrey Westling, Technology and Innovation Policy Resident Fellow, R Street Institute, to Mr. Doyle and Mr. Latta, submitted by Mr. Latta	248

³The information has been retained in committee files and is available at <https://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=112553>.

BROADBAND EQUITY: ADDRESSING DISPARITIES IN ACCESS AND AFFORDABILITY

THURSDAY, MAY 6, 2021

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

The subcommittee met, pursuant to call, at 11:30 a.m., via Cisco Webex online video conferencing, Hon. Mike Doyle (chairman of the subcommittee) presiding.

Members present: Representatives Doyle, McNerney, Clarke, Veasey, McEachin, Soto, O'Halleran, Rice, Eshoo, Butterfield, Matsui, Welch, Schrader, Cárdenas, Kelly, Craig, Fletcher, Pallone (ex officio), Latta (subcommittee ranking member), Scalise, Guthrie, Kinzinger, Bilirakis, Johnson, Long, Mullin, Hudson, Walberg, Carter, Duncan, Curtis, and Rodgers (ex officio).

Also present: Representatives Dingell, Blunt Rochester, Schrier, and Pence.

Staff present: AJ Brown, Counsel; Jeffrey C. Carroll, Staff Director; Parul Desai, FCC Detailee; Jennifer Epperson, Counsel; Waverly Gordon, General Counsel; Tiffany Guarascio, Deputy Staff Director; Perry Hamilton, Clerk; Alex Hoehn-Saric, Chief Counsel, Communications and Consumer Protection; Jerry Leverich, Senior Counsel; Dan Miller, Professional Staff Miller; Phil Murphy, Policy Coordinator; Joe Orlando, Policy Analyst; Kaitlyn Peel, Digital Director; Tim Robinson, Chief Counsel; Chloe Rodriguez, Clerk; Kate Arey, Minority Content Manager and Digital Assistant; David Brodian, Minority Detailee, Communications and Technology; Sarah Burke, Minority Deputy Staff Director; Michael Cameron, Minority Policy Analyst, Consumer Protection and Commerce, Energy, Environment; William Clutterbuck, Minority Staff Assistant/Policy Analyst; Theresa Gambo, Minority Financial and Office Administrator; Jack Heretik, Minority Press Secretary; Nate Hodson, Minority Staff Director; Sean Kelly, Minority Press Secretary; Peter Kielty, Minority General Counsel; Emily King, Minority Member Services Director; Bijan Koohmaraie, Minority Chief Counsel; Tim Kurth, Minority Chief Counsel, Consumer Protection and Commerce; Kate O'Connor, Minority Chief Counsel, Communications and Technology; Clare Paoletta, Minority Policy Analyst, Health; Arielle Roth, Minority Detailee, Communications and Technology; Olivia Shields, Minority Communications Director; Peter Spencer, Minority Senior Professional Staff Member, Energy; Michael Taggart, Minority Policy Director; Evan Viau, Minority Pro-

fessional Staff Member, Communications and Technology; Everett Winnick, Minority Director of Information Technology.

Mr. DOYLE. The committee will now come to order. Today the Subcommittee on Communications and Technology is holding a hearing entitled “Broadband Equity: Addressing Disparities in Access and Affordability.”

Due to the COVID-19 public health emergency, today’s hearing is being held remotely. All Members and witnesses will be participating via video conferencing.

As part of our hearing, microphones will be set on mute for the purpose of eliminating inadvertent background noise. Members and witnesses, you will need to unmute your microphones each time you wish to speak.

Documents for the record can be sent to Joe Orlando at the email address we have provided to staff. All documents will be entered into the record at the conclusion of the hearing.

The Chair now recognizes himself for 5 minutes for an opening statement.

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

First off, I would like to thank our witnesses for testifying before the subcommittee today.

Equity and broadband access, affordability, and adoption is more important than ever. As Congress works on President Biden’s American Jobs Plan, it is critical that we consider solutions to our Nation’s infrastructure challenges that not only close the digital divide but address historic inequities that have, for far too long, left behind Black, Hispanic, Tribal, and low-income communities. Studies by Pew Research show that communities of color lag predominantly White communities when it comes to the adoption of broadband. Older Americans and Americans in rural communities lag younger and urban communities, respectively, in broadband adoption, as well.

Due to this committee’s good work, we were able to come together and establish the Emergency Broadband Benefit Program, which provides a monthly benefit to qualifying households for internet service. We were also able to pass the Emergency Connectivity Fund, which will help students get connected through the E-Rate program, as part of the American Recovery Plan.

The EBB program will become available to consumers on May 12th. It will provide a \$50 monthly benefit to qualifying households for emergency broadband connectivity during the pandemic. The FCC has set up a portal to help folks navigate this program and get emergency broadband at getemergencybroadband.org. I am pleased to see that so many broadband providers have applied to participate. It is critical that more join this program, so that as many folks as possible can take advantage of this benefit.

I have also been pleased to see that a number of ISPs expanded access to low-income adoption programs during this critical time. It is my hope that, as the committee continues to work on closing the digital divide, that we can create a permanent program to provide broadband connectivity to people in need. These services are not

luxuries. They are necessities that everyone needs in order to participate in society.

We also need to look beyond programs that increase adoption among folks that qualify for means-tested programs. Far too many Americans lack access to affordable rates. Studies have shown that adoption could significantly increase if all consumers had access to more affordable service plans. Proposals like Congresswoman Eshoo's to expand the availability of municipal networks, or proposals to place open access requirements on networks built with Federal funds could spur competition and reduce prices for consumers.

I have always believed in the power of competition, and study after study has shown that consumers pay more in markets that are served by monopolies or duopolies. This is particularly true in communities that have been left behind due to redlining.

As we are working to fix the rural and urban divide, we must also address the substandard service and, at times, the lack of service in communities of color.

Finally, we need to address programs that expand digital equity programs that provide outreach and digital literacy and training skills. The opportunities and resources provided by this technology are wasted if you don't know how to use them. Too many Americans still lack the essential skills and are missing out and, all too often, being left out of our increasingly digitized society. It is important that we put in place programs to address these skills gaps but also do the important outreach necessary to engage these communities and help them get online.

That is why I have been proud to work with our chairman, Frank Pallone, and Majority Whip Clyburn on the Accessible, Affordable Internet for All Act, and President Biden and Vice President Harris on the American Jobs Plan. These proposals represent the once-in-a-generation investment we need to address these deep-seated digital inequities in our society.

Thank you, I look forward to the testimony of our witnesses.

[The prepared statement of Mr. Doyle follows:]

PREPARED STATEMENT OF HON. MIKE DOYLE

First off, I'd like to thank our witnesses for testifying before the subcommittee today.

Equity in broadband access, affordability, and adoption is more important than ever.

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This is particularly true in communities that have been left behind due to redlining.

As we are working to fix the rural-urban divide—we must also address the substandard service—and at times, the lack of service, in communities of color.

Finally, we need programs that expand digital equity programs—that provide outreach and digital literacy and training skills.

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These proposals represent the once in a generation investment we need to address these deep-seated digital inequities in our society.

Thank you and I look forward to the testimony of our witness.

Mr. DOYLE. And I yield the remainder of my time to my good friend from the great State of California, Ms. Eshoo.

Ms. ESHOO. Thank you, Mr. Chairman, for holding this highly important hearing.

I think the digital divide is a national embarrassment, and we have to solve it. Community broadband is an important part of the solution, because it is already working across the country. Over 900 municipalities, Tribes, co-ops, and public-private partnerships operate community networks that are—that successfully connect millions of Americans, and they can afford it.

But, unfortunately, 22 States have passed laws that limit these networks. My bicameral legislation, the Community Broadband Act, preempts these protections—these protectionist laws to enable community networks in all states.

And I am really pleased that President Biden has included community broadband in his infrastructure proposal, and I thank you and Chairman Pallone for including my bill in the LIFT Act—the LIFT America Act. So thank you for yielding time to me, and I look forward to a productive hearing today, and I yield back.

[The prepared statement of Ms. Eshoo follows:]

PREPARED STATEMENT OF HON. ANNA G. ESHOO

Thank you, Mr. Chairman, for holding this highly important hearing. I think the digital divide is a national embarrassment and we have to solve it. Community broadband is an important part of the solution because it's already working across the country.

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My bicameral legislation, the Community Broadband Act, preempts these protectionist laws to enable community networks in all States.

I'm really pleased that President Biden has included community broadband in his infrastructure proposal, and I thank Chairmen Pallone and Doyle for including my bill in the LIFT America Act.

Thank you for yielding time to me. I look forward to a productive hearing today and I yield back.

Mr. DOYLE. I thank the gentlelady. The Chair will now recognize my good friend from the great State of Ohio, the ranking member for the subcommittee, Mr. Latta, for 5 minutes.

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

Mr. LATTA. Well, thank you very much, Mr. Chairman, good seeing you again today, and thank you to our witnesses for testifying today.

Last week President Biden addressed the Nation and outlined a slate of new ideas and programs that, if enacted, will radically redefine the role of government in our daily lives. While many of the goals he outlined are important, it would be a mistake for the government to fundamentally reshape entire industries before understanding what the data and research says is needed.

Let me be clear: We must continue to support policies that will help all Americans get connected.

When it comes to broadband affordability, never have consumers gotten more for less. Internet prices have drastically dropped, and speeds and competition have increased. According to the most recent Communications Marketplace Report published by the FCC, the cost of the most popular plans have decreased by 20 percent, while speeds increased by 16 percent since 2015. And as a result of more Americans upgrading their services, the average cost of the highest-speed offerings have dropped by 37 percent while simultaneously increasing speeds by 27 percent.

Broadband subscriptions in urban areas have increased by 21.8 percent over the past 5 years, and despite the claims of consolidation, the number of broadband providers has increased over 25 percent from 2014 to 2019, with urban core areas seeing an increase of 30 percent. This advancement is the result of FCC policies that streamlined government regulations that have promoted competition and private-sector investment, and low-income programs and network upgrades. This did not happen because of government intervention and burdensome mandates like those that are being suggested by the Biden-Harris administration. Yet, despite these improvements in broadband offerings, some Americans still choose not to adopt broadband.

Mr. Chairman, I ask unanimous consent to submit the study of the Technology Policy Institute for the record.

The COVID-19 pandemic shook our country and our way of life, causing many hardships for millions of Americans. As an internet connection became a daily necessity, Congress enacted over \$10 billion in funds to support broadband adoption by low-income Americans and to help those who were struggling during the pandemic stay connected. While that money has not yet been made available, we must make sure it goes to those who are the hardest hit.

We must study the landscape of what our country looks like after the billions of dollars made available in funding is distributed. Congress cannot continue to blindly spend billions of hard-earned taxpayer money without knowing where the money is needed and what problems are left to solve. As much of the research on broadband adoption has shown, there is not a clear indication of what factors contribute to non-adoption. Policymakers must be clear-eyed on what the barriers are before trying to propose solutions.

I expect we will hear a lot today about the need to put the government in control of broadband rates so that more Americans will be able to afford it. I would urge the committee to be thoughtful about all the progress this country has made in the past decade on broadband technology before rushing to radically undermine the current system. We can and should meaningfully boast—or, pardon me, boost broadband access and adoption by all Americans. But throwing money at the problem without understanding the facts will only waste taxpayer money and not solve the problem.

Mr. Chairman, I yield back the balance of my time to try to keep on schedule for today. Thank you.

[The prepared statement of Mr. Latta follows:]

PREPARED STATEMENT OF HON. ROBERT E. LATTA

Thank you, Mr. Chairman, and thank you to our witnesses for being here today.

Last week, President Biden addressed the Nation and outlined a slate of new ideas and programs that, if enacted, will radically redefine the role of government in our daily lives. While many of the goals he outlined are important, it would be a mistake for the government to fundamentally reshape entire industries before understanding what the data and research says is needed.

Let me be clear: we must continue to support policies that will help ALL Americans get connected. When it comes to broadband affordability, never have consumers gotten more for less. Internet prices have dropped dramatically, and speeds and competition have both increased.

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We can and should meaningfully boost broadband access and adoption by all Americans, but throwing money at the problem without understanding the facts will only waste taxpayer money and not solve the problem.

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

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

Mr. PALLONE. Thank you, Chairman Doyle. We are here today to talk about equity in broadband and the very real disparities that exist in broadband access and affordability. And these disparities create a tremendous gap in the educational outcomes, available health services, and job prospects between households that have broadband and those that do not. And the gap has become even more apparent since the beginning of the COVID pandemic, as we have seen a wide range of services and opportunities move online, including online schooling and virtual meetings. And we increasingly become a digital-first nation that has to ensure that everyone has the same ability to access and use the internet to participate in society.

So for too long the term “digital divide” has been used to characterize the differences in quality and speed of internet networks in rural areas, compared to those in urban areas, and there is no doubt that government must step in and invest where the marketplace doesn’t support the business case for private broadband investment in any community in our Nation.

But that is just the start. Studies have shown that, within all sorts of different communities, broadband service isn’t always available or of equal quality. Certain communities somehow always find themselves at the back of the line when it comes to upgrades to the networks.

And it is also disappointing that there is a digital divide between races and ethnicities when it comes to broadband access. While 80 percent of White households have broadband access, that is true of only 70 percent of Black households and 65 percent of Hispanic households. There was a Deutsche Bank study that found that Black and Hispanic Americans are 10 years behind White Americans in terms of broadband access, severely hampering their long-term employment and earning prospects.

And it doesn't end there. Lack of access to home broadband also harms scores in schools and dims the employment prospects of students. So we are here to discuss how best to address these inequities.

And it is not as simple as ensuring that broadband networks are built to these communities. It is not just build-out. That is a critical first step. But affordability is a major barrier to broadband adoption for low-income communities. In fact, some studies have estimated that, of the households that do not have broadband, three times as many of them are located in urban areas than in rural areas. So having a network that runs right to your doorstep doesn't mean that these families can pay the monthly cost of the service.

So we came together, Democrats and Republicans, in December to pass the Emergency Broadband Benefit, which will provide struggling families a discount of \$50 off the monthly cost of their home internet service. That is discount for—is \$75 a month for Tribal lands. And the FCC is set to roll out the benefit next week. So I hope we can all work together to make that program a success.

But, again, affordability is going to continue to be a problem for some families even after that program ends, because they may have the build-out, they may hook up, and they may be able to afford the bill, but they don't know how to use the Internet. So they have to be trained. So we have to ensure that all Americans have the skills necessary for themselves and their families for the jobs of tomorrow.

So these are all tough problems, but they are problems that we can solve. Ensuring that all Americans can be part of the digital economy will make our Nation stronger, more economically competitive, and will help us continue to lead the digital revolution.

And I look forward to hearing from the witnesses, as Chairman Doyle said, about solutions, how we get there, and look forward to both sides of the aisle working on legislation to make this happen. [The prepared statement of Mr. Pallone follows:]

PREPARED STATEMENT OF HON. FRANK PALLONE, JR.

We're here today to talk about equity in broadband and the very real disparities that exist in broadband access and affordability. These disparities create a tremendous gap in educational outcomes, available health services, and job prospects between households that have broadband and those that do not. And the gap has become even more apparent since the beginning of the COVID-19 pandemic as we've seen a wide range of services and opportunities move online, including online schooling and virtual meetings. As we increasingly become a digital-first nation we must ensure that everyone has the same ability to access and use the internet to participate in society.

For too long, the term digital divide has been used to characterize the differences in quality and speed of internet networks in rural areas compared to those in urban areas. There is no doubt that government must step in and invest where the marketplace doesn't support the business case for private broadband investment in any community in our Nation.

But that's just the start. Studies have shown that within all sorts of different communities broadband service isn't always available or of equal quality. Certain communities somehow always find themselves at the back of the line when it comes to upgrades to the network.

It's also disappointing that there is a digital divide between races and ethnicities when it comes to broadband access. While 80 percent of White households have broadband access, that is true of only 70 percent of Black households and 65 percent of Hispanic households. A Deutsche Bank study found that Black and Hispanic

Americans are “ten years behind” White Americans in terms of broadband access, severely hampering their long-term employment and earning prospects.

And it doesn’t end there—lack of access to home broadband also harms scores in school and dims the employment prospects of students.

We are here to discuss how best to address these inequities, and it is not as simple as ensuring that broadband networks are built to these communities. That is a critical first step, but affordability is a major barrier to broadband adoption for low-income communities. In fact, some studies have estimated that of the households that do not have broadband, three times as many of them are located in urban areas than in rural areas. Simply put, having a network that runs right to their doorstep doesn’t mean that these families can pay the monthly cost of service.

We came together, Democrats and Republicans, in December to pass the Emergency Broadband Benefit, which will provide struggling families a discount of \$50 off the monthly cost of their home internet service. The discount is \$75 a month for those living on Tribal lands. The Federal Communications Commission is set to roll out the benefit next week. I hope we can all work together to make that program a success, but affordability is going to continue to be a problem for some families even after that program ends.

Finally, we must ensure that all Americans have the digital skills necessary for themselves and their families, but also for the jobs of tomorrow.

These are all tough problems, but they are problems that we can solve. Ensuring that all Americans can be a part of the digital economy will make our Nation stronger, more economically competitive, and will help us continue to lead the digital revolution.

I look forward to hearing from our witnesses about the solutions that will get us there, and I look forward to working with Members on both sides of the aisle to make it happen.

Thank you.

Mr. PALLONE. So I think I have about a minute and a half left. I can’t yield it back, Mr. Chairman. I have to—I want to yield it to Mr. McNerney.

Mr. MCNERNEY. I thank the Chair for yielding and for your opening statement.

I represent a district that is one of the most racially and ethnically diverse in the country. It is also a low-income district. Too many of my constituents are struggling just to get by. Not having a broadband service at home has set them even further back in today’s world. Even for those who live in areas where broadband has been deployed, many simply can’t afford the service. And there are many who don’t have the necessary digital skills to use broadband services. And this is the case for many communities around the country.

There is a wealth of opportunities for anyone, if they can—if they are able to close the gaps in broadband adoption and invest in digital skills. That is why I have introduced the Digital Equity Act. I am pleased that the bill will be introduced and included in the LIFT Act, and I hope that we will be able to move quickly to pass this critical legislation.

[The prepared statement of Mr. McNerney follows:]

PREPARED STATEMENT OF HON. JERRY MCNERNEY

I thank the Chairman for yielding. I represent an area that is one of the most racially and ethnically diverse areas in the region. It’s also one of the most low-income areas in the region.

Far too many of my constituents are struggling to get by. Not having broadband service at home has set them even further back in today’s world.

Even for my constituents who live in areas where broadband has been deployed, many simply can’t afford the service. There are many who also don’t have the necessary digital skills to get ahead or even get by. And this isn’t the case for just my district, it’s the case for many communities around the country.

There is a wealth of opportunities that these individuals could tap into if we are able to close the gaps in broadband adoption and invest in digital skills and digital literacy training.

That's why I've introduced the Digital Equity Act. I'm pleased that the bill was included in the LIFT Act and I hope that we will move quickly to pass the critical bill.

I yield back.

Mr. MCNERNEY. And guess what, Mr. Chairman? I am going to yield back 30 seconds.

Mr. DOYLE. I thank the gentleman. The chairman yields back. The Chair now recognizes Mrs. McMorris Rodgers, ranking member of the full committee, for 5 minutes for her opening statement.

**OPENING STATEMENT OF HON. CATHY McMORRIS RODGERS,
A REPRESENTATIVE IN CONGRESS FROM THE STATE OF
WASHINGTON**

Mrs. RODGERS. Good morning, everyone. I want to thank our witnesses for coming before our committee today.

Access to broadband in eastern Washington and across our country has never been more important than during the COVID-19 pandemic to work from home, to educate our children, access healthcare through telehealth, connect with our loved ones, maintain our communities of worship, and even to do remote hearings. We have continued our work to close the digital divide for the most remote and underserved areas, which is so important for me. I am grateful for the work of this committee to pass mapping legislation that was signed into law, over a year ago now, to update our maps so that we better target our efforts.

In the United States millions of Americans do have access to reliable connections, and much of this is possible because of the critical investments made by broadband providers over the last decade, which is why, during the pandemic, American broadband networks rose to the challenge by increasing speeds and capacity while facing unprecedented demands for access.

Unlike their European counterparts, American broadband providers were never forced to reduce streaming speeds or content quality. This is no accident. U.S. providers have invested more than 1.8 trillion in broadband infrastructure in recent decades and spent more than 3 times as much per household per year as companies in the EU. These investments have not only paid dividends in terms of fast speeds, high performance, economic growth, and job creation but also in creating competition and making broadband more affordable.

Thanks to competitive pressures, innovation, and a light-touch regulatory environment, broadband prices have seen a significant decline over the past decade. It is no surprise that, over the last 6 years, we have seen an increase in broadband adoption numbers across the United States.

These trends must continue. They must so we fully close the digital divide in both rural and urban communities. It is critical for families to be connected to have a more secure future and a better quality of life. Healthcare, education, economic opportunity are dependent on connectivity.

Just think about children who lost an entire year and counting on education because schools are closed and they have no internet

access. What does the future look like for them? Or their parents, including millions of women and working moms, who dropped out of the workforce because remote work wasn't an option for them?

We must rely on solutions that work to boost access and unleash opportunities; solutions that support American prosperity, ingenuity, and free enterprise; solutions like the 28 bills in the Boosting Broadband Connectivity Agenda that would remove unnecessary barriers that stand in the way of innovation and investment. There is bipartisan agreement that all Americans should have access to broadband at affordable prices, regardless of their address.

As a result of the pandemic, we all have recognized this need—it has been underscored—and I was proud that Republicans and Democrats came together to enact the 3.2 billion Emergency Broadband Benefit program to help. This was the right way to take action, given these circumstances. And it will help people access reliable broadband.

This committee also recognized the valuable contributions of private providers who voluntarily signed the Keep Americans Connected pledge and committed not to disconnect anyone due to their inability to pay.

Now we need to study these efforts on broadband adoption. These policies proposed today include federally regulating the rates that private companies can charge for broadband services. The proposal today would prioritize, unfortunately, inefficient government-run networks at the expense of private networks and create arbitrary speed thresholds that favor fiber-only projects, with no restrictions to prevent overbuilding in areas where broadband already exists.

We all want to close the digital divide, but the only way to truly achieve this is to lead with solutions that drive results. Let's focus on what is going to get results, not on more government-centralized power. Studies have suggested that, for broadband affordability, private companies must have better incentives to increase adoption. Research from the Technology Policy Institute found that private companies have succeeded in increasing broadband adoption, where digital literacy training has failed.

And Mr. Chairman, I request unanimous consent to enter this study into the record.

Mr. DOYLE. Without objection, so ordered.

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

Mrs. RODGERS. We must closely inspect the impact that the recently appropriated 3 trillion will have on the communications industry and our economy, and in order to avoid enacting burdensome policies. Let's start there.

[The prepared statement of Mrs. Rodgers follows:]

PREPARED STATEMENT OF HON. CATHY McMORRIS RODGERS

INTRO

Good morning and thank you to our witnesses for coming before the committee today.

Access to broadband has never been more important than during the COVID-19 pandemic.

Because of the performance of broadband networks in the United States, millions of Americans have access to reliable connections.

... to work from home, educate their children, access healthcare, connect with loved ones, and maintain their communities of worship.

This was possible because of the critical investments made by broadband providers over the past decade.

Which is why, during the pandemic, American broadband networks rose to the challenge.

... by increasing speeds and capacity while facing unprecedented demands for access.

EUROPE

Unlike their European counterparts, American broadband providers were never forced to reduce streaming speeds or content quality.

This is no accident. U.S. providers have invested more than \$1.8 trillion in broadband infrastructure in recent decades.

... and spend more than three times as much per household per year than companies in the EU.

These investments have not only paid dividends in terms of fast speeds, high performance, economic growth, and job creation.

... but also in creating competition and making broadband more affordable...

Thanks to competitive pressures, innovation, and a light-touch regulatory environment.

... broadband prices have seen a significant decline over the past decade.

It is no surprise that over the last 6 years, we have seen an increase in broadband adoption numbers across America.

FAMILIES

These trends are only going to continue...

... and they must—so we fully close the digital divide in both rural and urban communities.

It's critical for families to be connected to have a more secure future and better quality of life.

Healthcare ... education ... and economic opportunity are dependent on connectivity.

Just think about the children who lost an entire year and counting of education because schools are closed and they have no internet access.

What does the future look like for them?

Or the parents, including millions of women and working moms, who dropped out of the workforce because remote work wasn't an option for them.

WINNING THE FUTURE

We must rely on solutions that work to boost access and unleash opportunities. Solutions that support American prosperity, ingenuity, and free enterprise.

Solutions like the 28 bills in our Boosting Broadband Connectivity Agenda, that would remove unnecessary barriers that stand in the way of innovation and investment.

There is bipartisan agreement that all Americans should have access to broadband at affordable prices, regardless of their address.

As a result of the pandemic, we recognized this need.

... and enacted the \$3.2 billion Emergency Broadband Benefit program to help. This was the right way to take action given the circumstances and it will help more people access reliable broadband.

The committee also recognized the valuable contributions of private providers who voluntarily signed the Keep Americans Connected pledge.

... and committed not to disconnect anyone due to their inability to pay.

Now, we need to study these efforts on broadband adoption before fundamentally transforming the broadband industry.

The policies proposed by our Democratic colleagues and the Biden administration include federally regulating the rates that private companies can charge for broadband service.

They would prioritize inefficient, government-run networks at expense of private networks with a record of success.

... and create arbitrary speed thresholds, that favor fiber-only projects, with no restrictions to prevent overbuilding in areas where broadband already exists.

I am confident that we all want to close the digital divide.

... but the only way to truly achieve this is to lead with solutions that drive results—not more government centralized power.

Studies have suggested that for broadband affordability, private companies have better incentives to increase adoption.

Research from the Technology Policy Institute found that that private companies have succeeded in increasing broadband adoption where digital literacy training has failed.

[Mr. Chairman, I request unanimous consent to enter this study into the record].
Before appropriating more money, we must closely inspect the impact that the recently appropriated \$3 trillion will have on the communications industry, and our economy, in order to avoid enacting burdensome policies.

Today, we will examine some of the sweeping reforms that have been proposed by our Democratic colleagues.

... and consider the potential chilling consequences they might have on investment, competition, and innovation.

I thank the Chair and yield back.

Mrs. RODGERS. And with that, Mr. Chairman, I yield back.

Mr. DOYLE. The gentlewoman yields back. The Chair would like to remind Members that, pursuant to committee rules, all Members' written opening statements shall be made part of the record.

Now I would like to introduce our witnesses for today's hearing.

Ms. Joi Chaney, executive director of the Washington Bureau and senior vice president for advocacy and policy of the National Urban League.

Dr. George S. Ford, chief economist, Phoenix Center for Advanced Legal and Economic Public Policy Studies.

Ms. Francella Ochillo, executive director, Next Century Cities.

And Mr. Chris Lewis, president and chief executive officer, Public Knowledge.

We want to thank all our witnesses for joining us today. We look forward to your testimony, and at this time the Chair will recognize each witness for 5 minutes to provide their opening statement. We will start with Ms. Chaney.

You are recognized for 5 minutes.

STATEMENT OF JOI OLIVIA CHANEY, SENIOR VICE PRESIDENT, POLICY AND ADVOCACY, AND EXECUTIVE DIRECTOR, WASHINGTON BUREAU, NATIONAL URBAN LEAGUE; GEORGE S. FORD, PH.D., CHIEF ECONOMIST, PHOENIX CENTER FOR ADVANCED LEGAL AND ECONOMIC PUBLIC POLICY STUDIES; FRANCELLA OCHILLO, EXECUTIVE DIRECTOR, NEXT CENTURY CITIES; AND CHRIS LEWIS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, PUBLIC KNOWLEDGE

STATEMENT OF JOI OLIVIA CHANEY

Ms. CHANEY. Thank you. Good morning, Subcommittee Chairman Doyle, Subcommittee Ranking Member Latta, Committee Chairman Pallone, Ranking Member McMorris Rodgers, and members of the subcommittee. My name is Joi Chaney, and I serve as senior vice president of policy and advocacy and executive director of the Washington Bureau for the National Urban League. I bring you greetings on behalf of Marc Morial, our president and CEO.

The National Urban League is an historic civil rights organization dedicated to providing economic empowerment, educational opportunities, and to the guarantee of civil rights for the underserved in America. I am honored to testify today about one of the most serious issues facing our Nation and the Urban League movement, including the more than 2 million people we serve through direct services: the digital and broadband divide.

Rarely does an issue have implications across so many indicia of equity, including racial justice, gender equity, economic opportunity, healthcare, education, and workforce development. In rec-

ognition of this, the Urban League developed the Lewis Latimer Plan for Digital Equity and Inclusion to address a comprehensive set of goals and gaps: deploying networks everywhere, that is addressing the availability gap; getting everyone connected, that is addressing the adoption, including the unaffordability and the digital literacy gap; using the networks to improve how we deliver essential services and, in particular, workforce development, healthcare, and education, addressing the utilization gap; and finally, creating new economic opportunities to participate in the growth of the digital economy.

On the availability gap, as many of you have already echoed, for millions of Americans there is no available broadband network capable of allowing them to participate fully in 21st century life. This is generally a rural America problem that must be addressed, including for the millions of rural Americans who are also people of color and who span the economic divide. Rural is not, after all, synonymous with Caucasian. That is why we applaud efforts by the Biden administration with the American Jobs Plan, as well as members of the Energy and Commerce Committee with the LIFT America Act and the many bills that are contained within it.

As these bills make their way through Congress, however, we charge you with embracing the full scope of the Latimer Plan by addressing the full set of gaps contributing to the digital divide. Only then will you meet the needs of the Nation, especially for communities of color and communities earning lower incomes.

Among those Americans for whom a broadband network is available, there are still tens of millions who have not adopted broadband in their home. Indeed, the adoption gap is approximately three times larger than the availability gap. The reason? Lack of affordability and lack of digital readiness. As such, it does not help much to have lightning-fast broadband at your door if you cannot afford to subscribe to it. This is why we are so supportive of the Emergency Broadband Benefit. It addresses affordability.

But our goal is not to return to prepandemic inequity once the emergency is over. We need to fund programs that provide long-term, sustainable support for the poorest Americans, a disproportionate number of whom are men, women, and children of color. We cannot, in this moment of big ideas and big investments, solve for rural America's problem while leaving behind urban America, or ask urban America to wait on market principles. The stakes of the digital divide are too high for that.

Hopefully, in Q&A we can address how we could pay for such a program. Other—the other half of the adoption gap, digital readiness, that is important, and the need for a digital navigator, as well as the utilization gap.

But before I end, I wouldn't be the Urban League if I did not address the fourth prong for us, and that is gaps in access to wealth generation created by broadband and digital technologies. For the record, industry must ensure job opportunities are available for the country's growing Black and Latinx communities at every level in technology and technology-related industries. Entrepreneurs of color deserve a place in the governance of these companies. They should have equitable access as vendors and collaborators in build-

ing a utilization of new digital infrastructure and the prolific wealth-creating ecosystem that controls it.

To this end, the National Urban League urges Congress and corporate America to aggressively and comprehensively address digital-divide issues contained in the Latimer Plan and to consider our recommendations for solving those issues. This includes by considering and funding sustainable, long-term, and a permanent broadband benefit.

Thank you for the opportunity to testify, and I look forward to answering your questions.

[The prepared statement of Ms. Chaney follows:]

Testimony of Joi Olivia Chaney

SVP, Policy and Advocacy and Executive Director, Washington Bureau National Urban League

Committee on Energy and Commerce, Subcommittee on Communications and Technology
"Broadband Equity: Addressing Disparities in Access and Affordability."

May 6, 2021

Chair Pallone, Ranking Member Lata, Committee Chairman Doyle, and Members of the Subcommittee on Communications and Technology, thank you for the opportunity to present the views of the National Urban League in today's hearing. My name is Joi Chaney, and I serve as Senior Vice President of Policy and Advocacy and Executive Director of the Washington Bureau for the National Urban League. I bring you greetings on behalf of Marc Morial, our President and CEO, who regrets that he is unable to join us today.

The National Urban League is an historic civil rights organization dedicated to providing economic empowerment, educational opportunities and the guarantee of civil rights for the underserved in America. Founded in 1910 and headquartered in New York City, the National Urban League has 90 affiliates serving 300 communities in 37 states and the District of Columbia, providing direct services that impact and improve the lives of more than two million people nationwide.

I am honored to testify today about one of the most serious issues facing our nation and the Urban League movement: The digital and broadband divide. Rarely does an issue have implications across so many indicia of equity, including racial justice, economic opportunity, health care, education, and workforce development.

The National Urban League sounded an early alarm on the dangers of the digital divide. Our 2018 State of Black America Report was dedicated to the digital divide and launched the Digital Inclusion Index. The index provided evidence that the new job, business and educational opportunities created by increased digitization of our world were not being equally shared. However, despite that evidence and those warnings, government actions to address the divide have been at best modest and sporadic.

Prior to the COVID-19 pandemic, many individuals, families, and children relied on their schools, places of work, and other public "third" spaces like libraries, churches, internet cafes and coffee shops to connect to the internet because they did not have a broadband internet connection in the home--with a disproportionate number of these Americans being from communities of color or low-income communities. According to the US Census, about 60 percent of Black households

and 64 percent of Latinx households have broadband at home compared to 72 percent of White households. Only 54 percent of households earning \$50,000 or less have broadband in the home compared to 84 percent of households earning \$75,000 or more.

When the COVID-19 pandemic hit, access to those public places disappeared and with it, so did the access to a reliable broadband internet connection for millions. Now, as the COVID-19 pandemic has accelerated our society toward a “remote everything” lifestyle, the costs of exclusion are growing even larger, further exacerbating the divide between those who have a home broadband connection and those who do not.

Recognizing that America needed a comprehensive plan to address this chronic issue, over the last year, the National Urban League developed the Lewis Latimer Plan for Digital Equity and Inclusion. This Plan was born of Urban League’s recognition of three facts:

1. The digital divide, a problem that has stymied technology policy-makers for decades is a bigger problem today than it has been at any point in our history;
2. The divide persists and is amplified by the confluence of several compounding crises (i.e., the COVID-19 public health crisis, the economic crisis triggered by the pandemic and decades of inequality, the social justice crisis sparked by the murder of George Floyd and countless other people of color at the hands of police, and the political crisis nurtured by decades of deepening partisanship); and
3. The divide is most severe in low-income communities and communities of color.

In acknowledging the issues our country is currently facing, the need for policymakers to act has become even more urgent, prompting us to pose the following question: How can the tools of the information economy be employed to create a more equitable and inclusive society?

The answer lies in accomplishing four big, but achievable, goals:

- Deploying networks everywhere.
- Getting everyone connected.
- Using the networks to improve how we deliver essential services, in particular in workforce development, health care and education.
- Creating new economic opportunities to participate in the growth of the digital economy.

To achieve these goals, the Latimer Plan provides a detailed and comprehensive agenda to erase several persistent and dangerous gaps.

The first gap the Plan addresses is the availability gap between those who have access to broadband networks where they live and those who do not. For millions of American homes,

businesses and other enterprises, there is no available broadband network capable of allowing them to participate fully in 21st century life. This is generally a rural problem, where higher capital costs are required to reach fewer customers. In sparsely populated areas of the country, private capital alone is unable to economically justify the investment required to build high-speed broadband infrastructure. Further, the current system of subsidizing high-cost deployments is under significant stress, unable to fund the necessary build-out for many years, if not decades.

This is why the National Urban League applauds efforts made by the Biden Administration with the *American Jobs Plan*, as well as members of the Energy and Commerce Committee with the *Leading Infrastructure For Tomorrow's America Act* -- the *LIFT America Act* and the many bills that are contained within it. This includes the *Accessible, Affordable Internet for All Act*, the *Digital Equity Act*, the *Community Broadband Act*, the *Broadband Infrastructure Finance and Innovation Act*, the *Connect America Act*, and more. These bills that support historic generational investments and innovations to close the digital divide and in particular the broadband divide.

As these bills make their way through Congress, however, we charge you with embracing the scope of the Latimer Plan by addressing the full set of gaps contributing to the digital divide. Only then will you meet the needs of the nation, especially for communities of color and communities earning lower incomes. More directly, this means that our investments must not only solve for the deployment or availability gap, but they must also solve for the adoption gap, the utilization gap, *and* the economic opportunity gap to truly achieve digital equity. And digital equity is what this moment in our nation calls for.

Even among those Americans for whom a broadband network is available, there are still tens of millions who have not adopted broadband in their homes. In terms of the number of Americans affected, the adoption gap is approximately three times larger than the availability gap. There are two principal causes of the adoption gap: (1) lack of affordability and (2) lack of digital readiness.

Today, there are 93 million Americans who do not subscribe to broadband. Our data shows that between 69 million and 78 million of those do not subscribe for reasons other than lack of availability. There have been extensive surveys of the unconnected that have asked why they do not have broadband. For instance, Pew Research Center recently found that:

- Unaffordability is the single largest reason that Americans do not subscribe to broadband with 50% of non-subscribers citing service unaffordability and 31% citing computer unaffordability vs 22% citing unavailability or insufficient service; and
- 27% say unaffordability of service (21%) or a computer (6%) is the #1 reason for not subscribing vs. 7% for unavailable or insufficient service.

As such, it does not help much to have lightning-fast broadband at your front door, if you cannot afford to subscribe to it.

This is why we are so supportive of the Emergency Broadband Benefit. It addresses affordability, but our goal is not to return to pre-pandemic inequity once the emergency is over. We need a sustainable solution to ensure Americans can afford quality broadband long-term.

Now there are some who believe greater deployment alone can close both availability and adoption gaps through competition that will drive down prices. While we would love this to be true, the data we have seen does not support this or is uneven at best. Moreover, where competition had some benefit, it had little impact on low-income adoption. Thus, while we believe that competition is good, and we want to encourage it, we also believe that competition alone will not solve the broadband affordability problem for families earning the lowest incomes. For tens of millions, paying for broadband at almost any price is unaffordable.

Moreover, we do not want the fellow members of the beloved community we call America to fall further behind while we wait — perhaps in vain — for prices to fall. We also do not want to squander the moment and fall into the old traps of solving for one community's problem, while leaving another community behind. Especially, when the differences fall along racial, ethnic and socio-economic lines. We do not want to leave anyone behind as we recover from the pandemic and step into the next chapter of our nation's history.

We need to fund programs that will provide long-term, sustainable support for the poorest Americans. Any such broadband benefit program should also set minimum service standards that will regularly be re-evaluated and adjusted to remain current. And to fund this, we know that the costs can not only fall on the American taxpayer. We need appropriations especially in the beginning so that the neediest in our society won't have to wait, but we also need industry to put skin in the game. One idea is a Digital Equity Fund that could be the repository of contributions, including from spectrum auction proceeds. We also need to ensure even greater accountability with respect to internet service providers. A generational investment from public and private actors working together is what is required to close the digital divide.

Another significant barrier to broadband adoption is the lack of digital readiness. Digital readiness refers to the skills and equipment needed to effectively use information and communications technology to find, evaluate, create, and communicate online. The lack of such skills is a significant barrier for certain demographic groups, hindering their ability to adopt and fully utilize broadband at home. As such, we need to invest in training and outreach in non-adopting communities, including through a digital navigator corp and creating an Office of Digital Equity at the Department of Commerce.

In addition to the availability and adoption gaps, there is another, less obvious gap that is increasingly relevant to how we use the tools of the information age to create a more equitable and inclusive economy and society. That is the utilization gap, which is the difference between

how our communications networks are being used today and how they could be used to improve outcomes across industries.

Many commentators have noted that government services have not digitized fast enough and that government service providers have not taken full advantage of the availability of broadband to improve customer service, capacity, resiliency, adaptability, transparency, or security. The COVID-19 crisis has not only brought the availability, adoption, and affordability gaps to the forefront, it has also demonstrated that, despite the capacity and capability of our networks, we are suffering from a utilization diffusion lag, similar to that which accompanied electrification in the 1900s. Learnings from this unprecedented experience, however, could illuminate a better path forward. As the Washington Post noted, in praising the Latimer Plan's discussion of the utilization gap, "Treating broadband as infrastructure is the right approach, yet for the investment to pay off, we must build more than wires."

Lastly, while we are focused on ensuring all Americans have the tools and skills to participate fully in 21st century society and the digital economy, we also want to close gaps that limit opportunities to participate meaningfully and to create value in the tech industry as broadband and broadband-enabled enterprises continue to innovate, grow, and prosper. The Latimer Plan identifies this as the access to economic opportunity gap. This is the gap between how different communities have access to opportunities for wealth generation created by broadband and digital technologies.

Early tech optimists touted the rise of the internet as having the potential to be the great equalizer of society. Instead, it has exacerbated the historic divisions between the haves and have nots, leaving minority communities with fewer avenues to participate and develop economic opportunities in the Internet economy. The National Urban League's 2018 State of Black America Report found that of almost forty thousand employees working for just four major Silicon Valley technology companies, fewer than one thousand were Black American. Latinx employees are similarly underrepresented. As the technology sector has increased in size and profitability, Black and Latinx entrepreneurs have continued to be left behind.

Technology cannot be the great equalizer, however, if opportunities for wealth accumulation are not equitably distributed throughout society. We must ensure that job opportunities are available for the country's growing Black and Latinx communities at every level in technology and technology-related industries. Entrepreneurs of color deserve a place in the governance of these companies. They should have equal access as vendors and collaborators in the building and utilization of new digital infrastructures and the prolific wealth creating ecosystem that controls it.

Closing the digital divide is not only the right thing to do for the American people, it is the economically smart thing to do for the American economy. Demanding broadband access is really about demanding inclusion and enabling all Americans to participate in modern society. Whether in rural or urban communities, much of American life requires quality, fast, reliable, and secure internet on demand. You cannot adequately keep up in school without it, you cannot communicate with financial institutions without it, you cannot compete in business without it, you cannot receive job training or even apply for a job without it, you cannot converse easily for government services without it, including registering to get COVID-19 vaccine, and you cannot connect with loved ones and the broader community without it.

This need has only grown during the pandemic and is likely to continue to grow at the speed of innovation. In health care alone, the use of telemedicine has expanded exponentially. Healthcare providers are seeing 50 to 175 times more patients using telehealth than they did immediately before the pandemic. And telehealth has untold promise for shrinking the health disparities we saw exacerbated during the pandemic and enabling Americans to seek preventative care. This is especially true for people who cannot easily make appointments due to work or care responsibilities or have transportation limitations or those who face language barriers. Thus, access to broadband is not only a quality of life matter, it may be a matter of life or death.

The National Urban League therefore urges Congress to aggressively and comprehensively address the digital divide issues identified in the Lewis Latimer Plan and to consider our recommendations for solving those issues, beginning with a sustainable, long-term or permanent broadband benefit. Thank you for the opportunity to testify and I look forward to answering any questions.

Mr. DOYLE. Thank you very much, Ms. Chaney. The Chair will now recognize Mr. Ford.

You are recognized for 5 minutes.

STATEMENT OF GEORGE S. FORD, PH.D.

Dr. FORD. Thank you, Mr. Chairman, Members. In the U.S. today, over 90 percent of homes have access to broadband internet service, nearly 90 percent have access to 1 gigabit internet service, and nearly 90 percent of Americans have a high-speed connection in the home. Almost all providers offer low-income households a quality broadband connection for between 10 and 20 dollars. Broadband is widely available, highly subscribed, and mostly affordable. These statistics are impressive.

And then there is the 10 percent with none of it. I understand that is why we are here today. It is an important issue. As you try to close this gap, the first thing to do is to focus on the 10 percent, not the 90 percent. You will be tempted otherwise, but maintain focus on the problem. Don't mess up the 90 to get to the 10. We do not need dramatic reform of the broadband network. We need to adjust incentives at the margin.

The fact broadband is not deployed to every nook and cranny of the country is unsurprising. Broadband networks are expensive to deploy, especially in rural areas, where the revenues can't cover cost. This is not a market failure. We see the same lack of rural areas for nearly every business, and even for government services. Rural markets are underserved across the board, simply because the markets are small and cost may be high. That is part of the charm: rural Americans don't pay \$200 a month to park a car, or \$1,500 a month for a studio apartment.

If you want broadband everywhere, then subsidies must cover the spread between costs and revenues. We know this. We do this. The FCC has billions to support broadband deployment in underserved areas and a reasonable mechanism to distribute it. I recommend continued support and maybe enhanced support with the FCC in its efforts. In those efforts, the FCC provides subsidy dollars only to unserved and some underserved areas, and only to a single provider. That is the correct approach.

Subsidizing multiple firms or subsidizing competition is irrational. Whatever benefits the State competition produces is more than offset by the cost to other persons living outside the subsidized market who are taxed to pay for the subsidized competition. I am taxed to pay for a government-run network in Chattanooga. I live in Alabama. If anyone tells you subsidized competition is a good policy, I encourage you to make them demonstrate by what economic mechanism that is so. Wishful thinking is not a logical argument.

Why people don't accept—broadband is a more complicated matter. While advocates tend to focus on price, price is not the main reason people don't have broadband in the home. Far more people are just uninterested. I can't blame them for that. For some, a mobile or Wi-Fi connection is plenty adequate, a valid choice. People are allowed to have their own preferences.

As for the racial digital divide, the differences in the demand for broadband by some racial minorities persist, even after adjusting

for income, education, age, and so forth. Why this is so is not, to my knowledge, fully understood. So addressing such differences will be challenging. You can't fix the problem when you don't know what is causing it.

Literacy programs have not proven effective. In any case, it is worth investigation.

Native Americans have less access, which is well established and warrants solution. And also lower demand.

As for price, almost all low-income Americans can get a low-price plan today within a mechanism that will look much like any subsidy program you create. Some qualified households use these programs and some don't. Before making a long-term commitment to a subsidy program, I recommend you figure out why.

The Lifeline program has existed for decades, yet a relatively small share of eligible households bother to participate.

There are also murmurings of price regulation. Rate regulation will rob the broadband providers of their motivation to expand deployment and upgrade networks. Even when the government offers broadband, the retail prices are the same as private providers. It costs money to provide broadband, and prices reflect that.

And it pays to remember the failure of cable regulation in the early 1990s, a policy Congress abandoned only a few years after it started. I am afraid, if you get too focused on price as a solution to the adoption gap, you will be disappointed with the results. It will work for some, but not all.

And speaking of government-owned networks, I recommend to you a recent paper of mine on the law and economics of municipal broadband published in the Federal Communications Law Journal. It is a comprehensive analysis.

While I am not opposed to government broadband, per se, it is an extreme policy by any standard, and should be limited to unserved markets that even the subsidized private provider won't serve. It is last on the long list of options, an act of desperation. For obvious reasons, these systems often fail financially, leaving the cost on the backs of constituents, often in the form of higher electricity rates, especially burdensome to the poor.

Government systems do not offer lower prices. Efforts to say otherwise are poorly done. As I have shown in detail, once you correct for a few obvious errors, such as using a price of \$10 in Idaho when the true cost is closer to \$50 when you include the necessary utility fee and what amounts to a 20-year mortgage on a \$3,000 connection fee, municipal systems charge about the same price, if not a little higher.

And while there is talk of preempting State laws that limit cross-subsidization of these networks, it is not clear you can lawfully do so. It is a gamble, at best.

Mr. DOYLE. Will the gentleman—

Dr. FORD. There is a lingering due process claim that is yet to be litigated. But if it ever is, it might spell the end of municipal broadband.

Mr. DOYLE. The gentleman needs to wrap up. You are 38 seconds past the 5 minutes.

Dr. FORD. I am through. Yes, cities play a regulatory role in the broadband marketplace, and you cannot be both regulator and competitor.

Thank you for your time.

[The prepared statement of Dr. Ford follows:¹]

¹Additional material is included in a version of Dr. Ford's statement that has been retained in committee files available at <https://docs.house.gov/meetings/IF/IF16/20210506/112553/HHRG-117-IF16-Wstate-FordG-20210506-U4.pdf>.



Written Statement of
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Studies

Before the
House of Representatives
Committee on Energy and Commerce
Subcommittee Communications & Technology
Hearing on “Broadband Equity: Addressing Disparities in Access
and Affordability”

May 6, 2021

Testimony of George S. Ford, PhD
Chief Economist, Phoenix Center for Advanced Legal & Economic
Public Policy Studies
Hearing on “Broadband Equity: Addressing Disparities in Access
and Affordability”
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I. Introduction

Committee Chairman Pallone, Committee Ranking Member McMorris Rodgers, Subcommittee Chairman Doyle, Subcommittee Ranking Member Latta, and members of the Subcommittee, good morning and thank you for inviting me to testify today. My name is Dr. George S. Ford. I am the Chief Economist of the Phoenix Center for Advanced Legal and Economic Public Policy Studies. I appreciate the opportunity to share my thoughts with you.

As I understand it, Members of this Committee (and others in government) believe that broadband is now an “essential” service, yet it is neither ubiquitously available nor universally subscribed.¹ And, with respect to adoption, there are specific concerns about affordability for low-income Americans and persisting differences in Internet use by some minority groups, specifically Blacks and Hispanics. These are not

¹ Hearing on “Broadband Equity: Addressing Disparities in Access and Affordability,” MEMORANDUM, Committee on Energy and Commerce (May 4, 2021) (available at: <https://energycommerce.house.gov/committee-activity/hearings/hearing-on-broadband-equity-addressing-disparities-in-access-and>).

new concerns; the federal government has wrestled with these same issues for over a decade, spending billions in search of more favorable outcomes.² There is, however, a renewed enthusiasm based on the economic devastation and lifestyle adjustments brought on by the Covid Pandemic. If broadband was important in 2019, then it has become even more so during the recent unpleasantries.

In seeking new policy solutions to the apparent lack of broadband, we must first get a lay of the land. What do we know today about the broadband marketplace today? With respect to availability, the data suggest that 90-plus percent of Americans now have access to a broadband Internet service capable of serving all but the heaviest of users (25/3 Mbps, as defined by the Federal Communications Commission).³ A 25/3 Mbps service can handle online classwork, online conferencing, online doctor visits, online job search, video streams, social media, basic communication, and so forth.⁴ If a customer needs more bandwidth for multiple streams of 4K movies, then faster speeds

² See, e.g., American Recovery and Reinvestment Act of 2009 (available at: <https://www.fcc.gov/general/american-recovery-and-reinvestment-act-2009>).

³ Fourteenth Broadband Deployment Report, Federal Communications Commission (January 19, 2021) (available at: <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/fourteenth-broadband-deployment-report>); G.S. Ford, PHOENIX CENTER POLICY PERSPECTIVE NO. 21-03: *Form 477, Speed-Tests, and the American Broadband User's Experience* (March 31, 2021) (available at: <http://www.phoenix-center.org/perspectives/Perspective21-03Final.pdf>); G.S. Ford, PHOENIX CENTER POLICY PERSPECTIVE NO. 19-03, *Quantifying the Overstatement in Broadband Availability from the Form 477 Data: An Econometric Approach* (July 11, 2019) (available at: <https://www.phoenix-center.org/perspectives/Perspective19-03Final.pdf>); G.S. Ford, *Is Faster Better? Quantifying the Relationship Between Broadband Speed And Economic Growth*, 42 TELECOMMUNICATIONS POLICY 766-777 (2018) (available at: <https://www.sciencedirect.com/science/article/abs/pii/S0308596118300831>).

⁴ *System Requirements for Windows, macOS, and Linux*, Zoom Help Center (last viewed May 4, 2021) (available at: <https://support.zoom.us/hc/en-us/articles/201362023-System-requirements-for-Windows-macOS-and-Linux>); D. Reisinger and B. Westover, *What Internet Speed Do I Need? Here's How Many Mbps Is Enough*, Tomsguide.com (April 17, 2021) (available at: <https://www.tomsguide.com/us/internet-speed-what-you-need,news-24289.html>); *Is Faster Better*, *id.*

are generally available, though such privately-beneficial consumption does not produce the sort of social benefits that warrant government intervention. In fact, nearly all households have access to much better connections speeds, with basic services now in the 100-to-200 Mbps range. At last count, about 80% of households have access to 1 Gbps speeds.⁵

As for adoption, the Census Bureau estimates that as of November-2019 86% of Americans lived in households that have wired high-speed Internet services in the home.⁶ As for affordability, almost all broadband providers offer a capable broadband connection for \$10-to-\$20 per month for qualifying low-income consumers.⁷ Comcast's Internet Essentials offers a 50 Mbps service for less than \$10 per month for qualifying households.⁸ Spectrum's Internet Assist program offers a 30 Mbps service for \$14.99 per

⁵ *Industry Data*, NCTA (last viewed May 4, 2021) (available at: <https://www.ncta.com/industry-data/80-of-us-homes-have-access-cables-gigabit-internet-speeds>).

⁶ *Digital Nation Data Explorer*, NTIA (last viewed May 4, 2021) (available at: <https://www.ntia.doc.gov/data/digital-nation-data-explorer#sel=wiredHighSpeedAtHome&disp=map>). This statistic is based on broadband technology and does not include speeds, so some customers may not be receiving a 25/3 Mbps connection speed. In a much smaller survey, Pew Research estimates broadband adoption rate at 77%. *Internet/Broadband Fact Sheet*, PEW RESEARCH CENTER (April 7, 2021) (available at: <https://www.pewresearch.org/internet/fact-sheet/internet-broadband>).

⁷ L. Iscrupe, *Guide to Low-Income Internet Options and Affordable Internet Plans*, Allconnect.com (March 24, 2021) (available at: <https://www.allconnect.com/blog/low-income-internet-guide>); *Spectrum Internet Assist: Low-Income Families and Seniors Can Get Unlimited High-Speed Internet for just \$17.99 Per Month*, Cheapinternet.com (last viewed on May 4, 2021) (available at: <https://www.cheapinternet.com/low-income-internet/spectrum-internet-assist>).

⁸ *Comcast Commits to Investing \$1B Over Next 10 Years to Reach 50M Low-Income Americans With Tools and Resources to Succeed In Digital World*, Comcast Press Release (March 24, 2021) (available at: <https://corporate.comcast.com/press/releases/comcasts-internet-essentials-program-hits-ten-year-mark>). Qualifications are provided at: https://www.internetessentials.com/get-help#mostasked&all_Documentsneeded.

month.⁹ In connection with the Lifeline program, Verizon offers a 200 Mbps service for \$19.99 per month.¹⁰ Some analysts suggest a price of \$10-\$15 qualifies as “affordable,” so it appears that affordable, high-quality broadband services are readily available for the vast majority of low-income Americans.¹¹

These statistics are impressive. Despite the enormous investments required to deliver broadband, the private sector, and some public providers, have accomplished great things. America’s broadband marketplace is not in need of dramatic reform.

That said, there is room for improvement at the margin. Some areas are not covered by broadband networks and some Americans do not use broadband. To the extent there are social gains from broadband use—such as in education—an effort to expand availability and adoption is worthwhile if effective solutions are available. We must recognize, however, that we are down to the hardest and most challenging part. The cost of deploying network to presently unserved areas can be extraordinary expensive, serving few customers per mile (and per dollar). As the Federal Communications Commission’s (“FCC”) data collections efforts show, it is challenging

⁹ *Spectrum Internet Assist* (last viewed on May 4, 2021) (available at: <https://www.shelbyal.com/DocumentCenter/View/1555/Affordable-Internet---Charter-Spectrum>).

¹⁰ T. Hepburn, *Verizon is Extending its Low Cost Internet Program to Low Income Households*, CORD CUTTERS NEWS (January 8, 2021) (available at: <https://www.cordcuttersnews.com/verizon-is-extending-its-low-cost-internet-program-to-low-income-households>).

¹¹ J. Sallet, *Broadband for America’s Future: A Vision for the 2020s*, BENTON INSTITUTE (October 2019) at p. 66 (available at: https://www.benton.org/sites/default/files/BBA_full_F5_10.30.pdf) (“Almost everyone I spoke with in the eight low-income communities across the country where I visited for the research mentioned that they would be able to pay \$10-\$15/month for low-cost internet. However, anything more costly would be challenging for them to afford,” citing telephone conversation with C. RhinSmith, author of C. RhinSmith, *Digital Inclusion and Meaningful Broadband Adoption Initiatives*, Benton Foundation, January 2016).

to merely identify unserved areas. And, despite access to broadband and the widespread availability of low-cost plans for low-income Americans, some Americans do not view broadband as worth buying (i.e., essential), and some American may even view broadband as undesirable (and for good reasons). Survey data show that most non-adopters have little-to-no interest in broadband, and only about one-third of non-users said they would be interested in using the Internet at home at a lower price.¹² Convincing people to buy a service they are uninterested in will be challenging; reducing effective prices through subsidies may prove less effective than desired. Making matters more complex, some Americans may simply prefer to use mobile Internet services, perhaps better suited to their lifestyles, while others may prefer free Wi-Fi at anchor institutions (often funded by government). There are also cultural differences in the demand for broadband, which may require nuanced policies.¹³ There are no simple, low-cost solutions. As it has been in the past, expanding availability and adoption is challenging.

As Congress searches for effective to improve availability and adoption, we must focus on the problem. An overarching goal should be to do no damage to the 90% to get to the 10%. We must avoid making rules out of exceptions. Research points to several

¹² G.S. Ford, "Relevance" and "Price" as Determinants of Internet Non-Adoption: A Review of the Evidence, PHOENIX CENTER POLICY BULLETIN NO. 48 (April 2020) (available at: <https://www.phoenix-center.org/PolicyBulletin/PCPB48Final.pdf>); G.S. Ford, *Confusing Relevance And Price: Interpreting And Improving Surveys On Internet Non-Adoption*, 45 TELECOMMUNICATIONS POLICY (March 2021) (available at: <https://www.sciencedirect.com/science/article/abs/pii/S0308596120301749?via%3Dihub>). Note that these statistics preceded the Covid Pandemic, which influenced demand.

¹³ See, e.g., C.G. Reddick, R. Enriquez, R.J. Harris, & B. Sharma, *Determinants of Broadband Access and Affordability: An analysis of a Community Survey on the Digital Divide*, 106 CITIES 102904 (2020) (available at: <https://www.sciencedirect.com/science/article/abs/pii/S026427512031252X>).

ways to avoid mistakes. Targeted subsidies are better than untargeted subsidies. Subsidy programs, if poorly designed, can lead to waste, fraud, and abuse, unnecessarily inflating the cost of achieving a goal. Regulating broadband prices for the 90% to address the 10% is both unnecessary and risks substantial harm to an otherwise successful broadband marketplace. Using subsidies to force uneconomic entry, including government-owned networks, may materially reduce investment by the private providers that have committed and continue to commit billions of dollars to broadband deployment. Precision is called for—address the apparent problems, not the successes.

II. Broadband Availability

Over the past decade or so, the government has devoted much effort to improving broadband availability, with mixed success. The Federal Communications Commission has iterated to what appears to be an effective and flexible approach. Subsidizing network deployment to areas that are largely unserved is a sound approach and auctions are a reasonable tool to choose a subsidized provider. If billions are to be spent increasing network deployment, then I encourage Congress' continued support of the FCC's ongoing efforts.

For reasons detailed in several of my publications, I recommend that deployment subsidies continue to be targeted to largely unserved areas.¹⁴ It makes absolutely no

¹⁴ See, e.g., T.R. Beard, G.S. Ford, L.J. Spiwak, and M. Stern, *The Law and Economics of Municipal Broadband*, 73 FEDERAL COMMUNICATIONS LAW JOURNAL 1 (2020) (available at <http://www.fclj.org/wp->

Footnote Continued....

economic sense to subsidize competition. The number of competitors in a market, whether few or many, is an equilibrium outcome based on underlying economic conditions. Broadband networks are expensive to construct, maintain and operate, so naturally there will be relatively few of them. Forcing uneconomic competitive entry through subsidies—and the requirement for subsidies implies uneconomic entry—is economically unsound. Doing so brings few, if any, benefits at the high expense of building a network on top of a network or networks using subsidy dollars that impose social costs to collect through taxation. On the other hand, the benefits of building network to areas presently unserved may offer substantial benefits—going from zero to one provider is far more substantial than two-to-three providers.¹⁵ Still, there remains a cost-benefit tradeoff to consider since building network to some unserved areas may exceed any reasonable measure of the benefits.¹⁶

While I am not opposed to municipal broadband as a general matter, for reasons detailed in my recent paper—the *Law and Economics of Municipal Broadband* published in the FEDERAL COMMUNICATIONS LAW JOURNAL—government-owned broadband should be limited in scope and limited to unserved areas.¹⁷ Even in unserved areas, subsidizing private providers to extent their network to unserved areas is a far superior policy

[content/uploads/2020/09/MunicipalBroadbandArticleFINAL_9.2.20.pdf](#)). For the Committee's convenience, I have attached a copy of this paper to my testimony.

¹⁵ In fact, economics suggests that adding more competitors, even with private investment, may be socially wasteful (though I do not encourage entry restrictions). *Id.*

¹⁶ See, e.g., G.S. Ford and L.J. Spiwak, *Justifying the Ends: Section 706 and the Regulation of Broadband*, PHOENIX CENTER POLICY PERSPECTIVE No. 12-04 (August 13, 2011) (available at: <https://www.phoenix-center.org/perspectives/Perspective12-04Final.pdf>).

¹⁷ *Supra* n. 14.

choice. Municipal broadband networks have a dismal financial record, a now well-established fact. In nearly all cases, the existing government-owned networks require cross-subsidies to survive, which is a direct and predictable consequence of their uneconomic status. These subsidies hide the full costs of the networks. Constituents are often burdened with higher taxes or else higher electricity rates in cities that append the broadband network to a municipally operated electric utility. These costs remain a burden long after the networks are sold for pennies-on-the-dollar when the near inevitable financial failure arrives. Also, the source of funds for the cross-subsidies are obtained often by regressive means, hurting the poor that may not be able to afford broadband service. Moreover, municipal broadband networks also do not address the affordability issue as they offer prices no better than do the private providers they overbuild.¹⁸ Most local governments recognize such facts and I believe are now reluctant to engage in such folly, despite their being misguided by advocates that fail to recognize the undeniable experience of these networks. There are also significant Constitutional hurdles to Congressional action on pre-emption and a lingering due process problem about having government act as both competitor and regulator that has yet to be litigated.¹⁹ Do not lose sight of the problem of the problem you seek to remedy: *the first task is to deploy broadband where it is not deployed.* Building broadband networks

¹⁸ See, e.g., G.S. Ford, *The Open Technology Institute's Cost of Connectivity 2020 Report: A Critical Review*, PHOENIX CENTER POLICY PERSPECTIVE NO. 20-06 (July 20, 2020) (available at: <https://www.phoenix-center.org/perspectives/Perspective20-06Final.pdf>); G.S. Ford, *A Review of the Berkman Center's Price Survey of Municipal Broadband Markets*, PHOENIX CENTER POLICY PERSPECTIVE NO. 18-01 (January 24, 2018) (available at: <https://www.phoenix-center.org/perspectives/Perspective18-01Final.pdf>).

¹⁹ *The Law and Economics of Municipal Broadband*, *supra* n. 14.

over existing networks using subsidy dollars is uneconomic and ill-advised, and that is true whether the subsidized network is private or public.

Subsidies are but one way to expand deployment; reducing deployment costs for private providers also may be an effective policy tool. Reducing the administrative burdens and costs imposed by local and state governments on deployment will expand network deployment at the margin. In that regard, better pole attachment policies are receiving some attention, especially in areas where municipalities own poles and charge exorbitant fees unrelated to costs.²⁰ Pole attachment costs are especially problematic in rural areas where the ratio of pole attachments to potential customers is high. Tax incentives for deployment will improve the financial case for deployment. Congress may wish to consider what it can do to reduce deployment costs and encourage state and local governments to do the same.

III. Adoption and Affordability

Availability is one problem, and adoption is another. In fact, in pure numbers, the adoption problem is larger than the availability problem. Adoption is driven by many socio-economic factors including income, age, and price, and there are even cultural differences among racial groups unrelated to socio-economic resources. With

²⁰ M. Connolly, *The Economic Impact of Section 224 Exemption of Municipal and Cooperative Poles*, Unpublished Manuscript (July 12, 2019) (available at: <https://www.rcta.com/sites/default/files/2019-07/NCTA%20Muni%20and%20Coop%20Poles%20Connolly%20Paper%20Ex%20Parte%20Filing%207-22-19.pdf>).

many causes for non-adoption, materially increasing adoption among non-users will require many and perhaps nuanced policies.

Presently, subsidies for monthly service are being used to address adoption during the Covid Pandemic through the Emergency Broadband Benefit (“EBB”) program.²¹ I understand that extending these subsidies, perhaps indefinitely, is being considered. As you contemplate the subsidy question, there are a few considerations to keep in mind.

First, as mentioned above, a capable broadband connection is widely available for low-income Americans for less than \$20, so private providers have done much to address the affordability issue. Normally, we would expect a price of \$10-to-\$20 to be “affordable” for an “essential” service, which is how this hearing’s Memorandum describes broadband.²² Studying the effects of these low-price programs may be warranted before committing to a long-term subsidy program.

Second, while affordability (or price) receives the most attention as a cause of non-adoption, the data indicate that price is not the dominant factor.²³ Certainly, making broadband more affordable through subsidies will increase adoption (by the law of demand), but such subsidies may have less effect than desired.

²¹ *Emergency Broadband Benefit*, Federal Communications Commission (last viewed May 4, 2021) (available at: <https://www.fcc.gov/broadbandbenefit#:~:text=The%20Emergency%20Broadband%20Benefit%20is,classrooms%2C%20and%20so%20much%20more.>).

²² *Supra* n. 1.

²³ *Supra* n. 12.

Third, depending on the design of the program, service subsidies may be very costly. To the extent possible, subsidies should be targeted to non-users or else the program should be designed to allow non-users to self-select into the program.²⁴ Also, as we have learned from the Lifeline program, subsidy programs may be rife with waste, fraud, and abuse, leading to unnecessarily high costs. Policies implemented during the Obama Administration addressed some of those problems, and the Lifeline Program's budget has shrunk considerably.²⁵ This is encouraging, but the Lifeline program has evolved into something very different than a simple subsidy program. Also, a relatively small share of eligible households participate in the program.

Third, mandating providers to offer a low-priced service of specific quality also presents problems. Broadband providers rely on subscribers to pay the cost of their networks. A poorly-designed mandate may lead to widespread defection from regular-priced plans that pay for the network, reducing the financial motivation to deploy and upgrade networks.²⁶ Providers, acutely aware of revenues and costs, can manage more effectively the separation of low-cost and regularly-priced services, either through qualifications (such as income, age, military status, non-subscription) or quality

²⁴ G.S. Ford, *Subsidies and Substitution: An Empirical Study of The Lifeline Program*, 45 TELECOMMUNICATIONS POLICY (February 2021) (available at: <https://www.sciencedirect.com/science/article/pii/S0308596120301658>).

²⁵ G.S. Ford, *Trends in Lifeline Reform: A Look at the Evidence, Not the Politics*, PHOENIX CENTER POLICY PERSPECTIVE No. 20-04 (July 1, 2020) (available at: <https://www.phoenix-center.org/perspectives/Perspective20-04Final.pdf>).

²⁶ *Trends in Lifeline Reform*, *id.*; T.R. Beard, G.S. Ford, and M.L. Stern, *Private Solutions to Broadband Adoption: An Economic Analysis*, 69 FEDERAL COMMUNICATIONS LAW JOURNAL 1 (2017) (available at: <http://www.fclj.org/wp-content/uploads/2017/04/69.1.1-T.-Randolph-Beard-et-al.pdf>).

differentials. Such separation is important for the continued vitality of our broadband networks.

Still, if Congress deems that the \$10-to-\$20 plans for eligible household are not affordable (perhaps due to the software and equipment requirements of using broadband service), then a monthly service subsidy is an option. It may make sense, for instance, to grant providers a monthly subsidy for providing a minimally-accepted quality of service to qualified households. The quality of service should provide for a suitable Internet experience but not be so high as to induce defection from better services. The minimally-accepted quality of service should also permit competition among providers in price-quality space, thereby driving down prices, increasing quality, and expanding qualifications. Such a program may lead to an effective service price of zero, limiting non-adoption to those that simply do not want broadband.

Racial disparities in adoption are another issue receiving considerable attention today. Adoption by Blacks, Hispanics, and Native Americans is below that of other races. For Native Americans, the lower adoption rate reflects, in part, lower availability, which is a recognized problem.²⁷ A current research project of mine suggests there are differences in the demand for broadband among races that go beyond socio-economic resources like income, education, age, and so forth. Given these nuanced differences, shrinking the Racial Digital Divide will be challenging and solutions may go beyond a monthly service subsidy. Subsidies may help, however. According to Census data,

²⁷ *Fourteenth Broadband Deployment Report, supra* n. 3.

affordability and a lower price are more important concerns for Blacks and Hispanics than for Whites.

Digital Literacy training and similar programs may help to some degree, but they may add substantially to the cost of increasing adoption and their effectiveness is in doubt. Literacy and promotion programs were funded by the American Reinvestment and Recovery Act (2009), though no discernable impact on adoption was seen from those efforts.²⁸

Hopefully, as the benefits of broadband become more apparent and its presumed “essential” nature sinks in, much of the disparity in adoption rates among the races will diminish over time without intervention, and some evidence suggests the gap is closing. Between 2017 and 2019, Census Bureau data indicates that the adoption difference between Whites and Blacks shrunk by over half, through the difference between Whites and Hispanics was essentially unchanged. A much smaller sample collected by the Pew Research Center finds the gap between adoption for Blacks and Whites and Hispanics and Whites both shrunk by 40% between 2018 and 2021.²⁹ As such, different minority groups may require different interventions or even different intensities of intervention,

²⁸ T.R. Beard, G.S. Ford and M. Stern, *Bridging the Digital Divide: What Has Not Worked But What Just Might*, PHOENIX CENTER POLICY PAPER NO. 56 (June 2020) (available at: <https://www.phoenix-center.org/pcpp/PCPP56Final.pdf>); J.A. Hauge and J.E. Prieger, *Evaluating the Impact of the American Recovery and Reinvestment Act's BTOP on Broadband Adoption*, 47 APPLIED ECONOMICS 1-27 (2015) (draft available at: <https://ssrn.com/abstract=2591771>).

²⁹ Pew Research Center, *supra* n. 6.

adding to the complexity of policy choices. It takes some courage to recognize that part of the problem may simply be unsolvable, at least from federal invention.

IV. Conclusion

As an economist that has worked with the FCC and with large and small telecommunications firms, and now is with a think-tank, I have conducted theoretical and empirical research on the telecommunications marketplace for more than a quarter century. I appreciate the opportunity to share my thoughts with you today. I have learned much over this time and learn new things every day. But what time has taught me well is that what we see occurring in the marketplace can be explained by economic forces—forces as reliable as gravity. If a change in what we see is desired, then it is essential that we first understand why things are the way they are, and that we embrace the facts as best as they can be determined. Only then can buyers and sellers be nudged toward a different equilibrium by policy interventions. Interventions that ignore the underlying economic forces are doomed to fail.

What is clear, to me at least, is that while we may lodge some complaints, our broadband marketplace is not in need of dramatic reform. It effectively supports our economy and has proven resilient to dramatic change, despite some unnecessary policy instability. To the extent some homes do not have access to broadband, there are mechanisms in place to resolve that issue and expanding those programs may prove fruitful, though very costly in some areas. To the extent not everyone uses broadband, though the vast majority of Americans do, there are perhaps targeted solutions to alter economic choices in a favorable way.

Mr. Chairman, thank you again for the invitation to testify today. I hope that my testimony aids in the development of effective policies to improve our broadband infrastructure and the use of it. I look forward to answering any questions the Subcommittee might have.

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

STATEMENT OF FRANCELLE OCHILLO

Ms. OCHILLO. Good morning, Chairman, Committee Chairman Pallone, Ranking Member McMorris, Subcommittee Chair Doyle, and Ranking Member Latta, as well as members of the subcommittee. Thank you for making this issue a priority and inviting Next Century Cities to be a partner in this hearing.

We are a nonprofit, nonpartisan organization of over 200 member municipalities across the U.S. We support mayors and local officials who are working to ensure that their residents have affordable and reliable broadband. We spend a lot of time listening. We document local insights, and we fill in information gaps for local leaders who had to tackle access and adoption issues on their own.

In Vermont, for example, where 20 percent of residents struggle with reliable access and affordability, towns form alliances of two or more called Communications Union Districts to help deploy their own broadband.

Six hundred miles away, the Detroit Community Technology Project developed a digital steward model to train neighborhood leaders to build and maintain their own wireless networks.

In Oklahoma, Osage Nation partnered with the City of Pawhuska to create a public Wi-Fi system to ensure that indigenous residents that were living in city limits were able to get online.

All of these community leaders know that, wherever broadband is ubiquitous, residents have power. They can access information, they can start businesses, they can have access to care, and age in place. Students can dream far beyond what is possible in their hometowns, and people living with disabilities can have better access to the technology that improves their daily lives. Aside from supporting participation in this democracy, broadband also keeps us connected to each other.

But on the flip side there is a vicious cycle of opportunity loss and economic starvation in the communities that are on the wrong side of the digital divide. Residents in these unserved or underserved areas are oftentimes limited by their income or their geography. Lower benchmarks for education, specialized care, and innovation stunts the overall growth of the area. Gaps in access means that their workforce is unable to fully participate in the high-skilled jobs in a knowledge-based economy.

There are drastically different outcomes in the communities where broadband is scarce and people are unable to adopt. Research shows that indigenous, Black, and Brown residents are among the most disparately impacted. And when they are locked out of the benefits of digital citizenship, there is a compound effect on a household, on generational wealth, on local, State, and Federal economies, and society writ large.

The most economically resilient communities recognize broadband as essential infrastructure. It supports local efforts to fight poverty, it creates jobs, and it helps local officials achieve more equitable outcomes for residents. There are also long-term returns that cannot always be recorded on a balance sheet.

But here we are, and this is urgent. There is a lack of imagination on how we are approaching a nationwide strategy to close the digital divide. This is an issue that requires addressing access and adoption, not either/or. It requires collaboration at every level of government, innovative partnership ideas, and a willingness to embrace new models, because we don't have any other choice.

Current broadband deployment strategies have failed too many communities, leaving large urban and rural areas behind, simply in the dark. And any comprehensive plan, it requires the partnership from municipal, cooperative, mesh, and other nontraditional networks that are willing to serve areas where traditional providers have simply refused to go. Each model allows communities to serve residents that have no other option, and they also have public accountability in a way that private companies simply don't, especially when the people who build, design, and manage those networks are not only residents, they use the service themselves.

Municipal networks, they also offer some of the fastest speed and highest quality connectivity. They are also known for transparent pricing, symmetrical tier service, and maintaining affordability programs for low-income residents that are not voluntary.

We also know that inaccurate broadband maps are sabotaging our collective efforts. Without knowing who does and does not have broadband, it is impossible to direct resources that—the communities that are in the most need. Federal broadband maps are well known to overstate deployment, and it is a problem with serious consequences. Many States actually rely on FCC data as the baseline to target funding at communities when they are marked as unserved or underserved, but then local leaders are forced to challenge those maps with their own data or speed test rather than being invited in as data collection partners in the first place.

Finally, investing in digital equity and inclusion programs, that is central to increasing broadband adoption. Broadband adoption is an indicator of economic growth and prosperity in every State. Yet Federal broadband policy is focused exclusively on broadband deployment, leaving local governments and State governments to fend for themselves.

At Next Century Cities, we believe that the digital divide is a problem that we can solve, and we also see equity as a bedrock principle in any solution. But we are running out of time, and it costs us something to have good ideas in incubation. So I appreciate——

Mr. DOYLE. I would ask that you wrap up. You are also half a minute past your time.

Ms. OCHILLO. And we appreciate you having this conversation, and we look forward to an opportunity to work together.

[The prepared statement of Ms. Ochillo follows:]



Written Testimony for the Record of
Francella Ochillo, Executive Director, Next Century Cities

Before the
Congress of the United States
U.S. House Committee on Energy and Commerce
Subcommittee on Communications and Technology

Regarding
“Broadband Equity: Addressing Disparities in Access and Affordability”

Hearing Date
May 6, 2021

Chairmen Pallone and Doyle, ranking member Latta, and members of the Subcommittee:

Over the past two decades, Americans from coast to coast, and those living in our country's islands and territories, learned of the decisive role that high-quality Internet plays in accessing education, healthcare, public safety, job creation, and economic opportunity. Reliable and affordable broadband can bring a world of information and promise to our fingertips. Likewise, the lack thereof can have a generational impact on households and the communities in which they live.

Next Century Cities is uniquely focused on supporting local efforts to ensure that all residents have affordable, reliable, high-speed Internet access. We are a non-profit, nonpartisan organization born of the need to elevate community-level perspectives into broadband policymaking at every level of government. Our organization is made up of over 200 member municipalities in over 40 states, including cities, counties, towns, and villages. The mayors and other local officials in our network have unique expertise in expanding digital infrastructure and developing broadband adoption programs since many have had to confront those challenges on their own.

In areas where broadband is ubiquitous, residents have the ability to access information, start a business, and age in place. On Tribal lands and in rural areas, broadband determines whether residents have access to life-saving care. It enables students to find career opportunities in a global marketplace and powers the technology that improves the daily lives of people with disabilities. In addition to being a lifeline that keeps friends and families connected, broadband is fuel in the digital ecosystem that propels ambition far beyond what was possible in some of our hometowns. Being able to experience the benefits of broadband creates pathways for social change and shaping our democracy in ways that were once unimaginable.

On the flip side, there are too many communities where reliable and affordable broadband is scarce. They deliver on a different promise. Residents in unserved or underserved areas are, in part, limited by income or geography. Digital limitations on education, specialized healthcare, and innovation stunts the overall growth of their local economies. Instead of preparing their workforces for high-skilled jobs, these communities have to direct already limited resources into programs that support residents who have been displaced by a rapidly changing goods and services economy.

There is a vicious cycle of opportunity loss and economic starvation at play in communities on the wrong side of the digital divide. Among the most disparately impacted populations are Indigenous, Black, Brown, rural, and low-income residents. The racial overtones associated with identifying who is being left behind are backed statistics. In fact, Deutsche Bank's conclusion that "76% of Blacks and 62% of Hispanics could get shut out or be under-prepared for 86% of jobs in the US by 2045" has a direct impact on their ability to participate in a high-skilled

workforce and generate wealth.¹ That is why the digital divide cannot adequately be measured by the number of households that do not have, or are unable to adopt, broadband. Digital divide statistics often overlook the compound effect that not being able to get online has on a household and society writ large.

The onset of the COVID-19 pandemic exacerbated digital disparities that were already impossible to ignore. Rather than broadband access serving as a helpful tool, it immediately became a necessity as vital as electricity. Residents had to rely on home broadband connections, secure devices for each household member, and hone digital skills to earn a living, keep their businesses open, get COVID-19 updates, pay bills, renew a driver's license, or visit a doctor.

Even as some communities begin reopening and returning to physical spaces, scars from the pandemic will leave an indelible mark. In many instances, online services have eclipsed the need for in-person transactions. The pandemic accelerated the crawl of many industries to telework, which is expected to continue.² Meanwhile, the people who do not have reliable broadband access are locked out of those work from home opportunities. Many do not even have access to the online application.

The disparities caused by a long-term migration to online platforms will continue to function as a barrier for the millions of people across the country who still do not have reliable and affordable broadband. With limited alternatives, millions of low-income children are falling behind in school, rural residents remain as distant from telemedicine as in-person health clinics, and low-income defendants must traverse the legal system with severe limitations.³

Achieving universal broadband connectivity has become a priority for local governments nationwide just as it should be for Congress. Residents like the farmers in Orleans County, New York, for whom unreliable internet continues to interfere with production⁴ and tenants in Kansas City, Missouri, who did not have the requisite internet access or device to respond in an eviction

¹ Deutsche Bank, *America's Racial Gap & Big Tech's Closing Window*, Sept. 2020 at 1 (2020), https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000511664/America%27s_Racial_Gap_%26_Big_Tech%27s_Closing_Window.PDF?undefined&reaload=ZOpo-2aT7/419K5P7C1nqPFKaoSLub9BbbPuEE/qZiGE3ltaqjachaf_EFJlrOhjyNiG1tp2-gwll83Ow29Ae3w==

² See Katherine Guyot and Isabel V. Sawhill, *Telecommuting will likely continue after the pandemic* (April 6, 2020), <https://www.brookings.edu/blog/up-front/2020/04/06/telecommuting-will-likely-continue-long-after-the-pandemic/>.

³ See e.g. Brandon Paykamian, *Data Finds Students Falling Behind in Math During Pandemic* (Feb. 12, 2021), https://www.govtech.com/education/k-12/learning-platform-data-examines-math-learning-loss-during-pandemic.htm?utm_term=READ%20MORE&utm_campaign=Election%20Tech%20Vendors%20File%20%245.3B%20in%20Defamation%20awsuits&utm_content=email&utm_source=Act-On%20Software&utm_medium=email; Angela Uffell, *How Poor Broadband Access Is Hurting Colorado's Rural Communities During COVID-19* (Sept. 2020), <https://www.5280.com/2020/09/how-poor-broadband-access-is-hurting-colorados-rural-communities-during-covid-19/>; Alfred Ng, *Going to court online is supposed to be safer. For many, it's actually much worse* (July 23, 2020), <https://www.cnet.com/news/why-virtual-courts-put-defendants-at-a-disadvantage/>.

⁴ See Orleans Digital Literacy Initiative, *Summary of the Need and Desired Next Steps for the Community at 17* (2021), https://www.lrc.libguides.com/ld.php?content_id=61117423.

hearing⁵ will continue to shoulder the impact until we find a way to implement this goal. They are living proof of why the chasm between the digital haves and have nots provokes fundamental questions about fairness.

Digital equity is at the core of this proceeding. Making it a Congressional priority brings us a step closer to ensuring that all residents, regardless of zip code, can meaningfully participate in a digital society. This is an imperative that must be revisited over and over again. Otherwise, the digital divide threatens to solidify into a larger rift among those who have the tools and services they need for daily life and those who do not.

Broadband Is Infrastructure in Resilient Communities.

The communities that were best able to weather the economic fallout from the pandemic recognized, long before COVID-19, that infrastructure is more than “buildings and highways, but it also encompasses broadband cables across the ocean floor and new technologies that have become vital to human progress.”⁶ Broadband is an indispensable tool for local officials working to fight poverty, create jobs, recover from disaster, boost civic engagement, or achieve more equitable outcomes for residents.

Cities, counties, towns, and villages of all shapes and sizes treat broadband as a critical piece of infrastructure. Just as municipalities rose to the challenge of providing electric and gas service when private providers did not serve their community, they are also filling in broadband gaps in areas with low economic returns. Yet, from a community-level perspective, widespread broadband access and high adoption rates generate long-term returns that cannot be recorded on a balance sheet.

Many communities across the U.S. own broadband assets for their internal city uses. In Virginia Beach, Virginia, for instance, local officials improved emergency response times by connecting fire stations to the City’s fiber network which was originally used to connect other government buildings and educational facilities.⁷ Smart technologies, like those found in street lights, also depend on its robust fiber connections while creating efficiencies.

Some communities have had no other choice but to launch municipal networks and have nonetheless found a way to set new benchmarks for high-speed and affordable service. In Fairlawn, Ohio, one of the community leaders’ first decisions was to house the network in the City’s Infrastructure Department, treating broadband as any other utility. The City of Wilson took

⁵ See Allison Kite, *KC Tenants disrupts eviction court, demands relief for tenants during COVID crisis* (July 30, 2020), <https://www.kansascity.com/news/politics-government/article244580802.html>.

⁶ Siegel Family Endowment, *Infrastructure: Building the World We Deserve How a new approach can create a more resilient, equitable, and prosperous society* at 4 (2020), <https://infrastructure.siegelendowment.org/wp-content/uploads/2020/10/Infrastructure-Building-the-World-We-Deserve.pdf>.

⁷ Stacy Parker, *Virginia Beach, Va., Bolsters its Broadband Network* (Feb. 19, 2016), <https://www.govtech.com/dc/articles/virginia-beach-va-bolsters-its-broadband-network.html>.

a similar approach, becoming the first Gigabit City in North Carolina after identifying a fiber-to-the-home network as critical infrastructure in furtherance of its economic development strategy.⁸ Its network later expanded service into neighboring rural communities.⁹

Even without running their own services, cities across the country recognize that broadband networks are the 21st Century infrastructure that we need to create a more sustainable, inclusive, and equitable society. These sentiments ring true in Mayor Bill de Blasio's introductory remarks of New York City's Internet Master Plan and the introduction of the City of Seattle's broadband initiative.¹⁰

Some Tribal governments have also treated the Internet as essential infrastructure. Walter Haase, general manager of the Navajo Tribal Utility Authority, stated that "It's time for America to support the Navajo Nation and all Indigenous communities and invest in utility infrastructure."¹¹ Centralizing broadband is an effective way to ensure that robust connectivity can reach the threshold of every household and business.

Digital Redlining Is a Problem In Both Urban and Rural Communities.

In the 1930's, communities in major U.S. cities were rated for lending risk based on race, ethnicity, and income status.¹² The communities deemed "high lending risk" and discriminated against by lending institutions are disproportionately minority and low-income neighborhoods. They are among the same communities that persistently lack equitable fiber and digital tools access.

Well documented in places like Detroit, Michigan, digital redlining has put disenfranchised communities at a further disadvantage.¹³ In March 2021, the City of Baltimore submitted a letter to the FCC signed by over 100 local officials nationwide urging it to investigate the practice of

⁸ See Greenlight Community Broadband, *History*, <https://www.greenlightinc.com/about-us/history> (last visited May 4, 2021).

⁹ *Id.*

¹⁰ New York City Internet Master Plan (Jan. 7, 2020), https://www1.nyc.gov/assets/cfo/downloads/internet-master-plan/NYC_IMP_1720_FINAL-2.pdf (Bill de Blasio wrote that "This digital divide, like so many other aspects of life in New York City, leaves a significant part of our population at a major disadvantage. The New York City Internet Master Plan lays out a new vision for the City's role in shaping this essential infrastructure, one that is oriented toward making broadband a truly universal service for all our citizens."); Seattle Information Technology, *Broadband*, <https://www.seattle.gov/tech/initiatives/broadband> (last visited May 4, 2021) ("Internet access is the infrastructure challenge of the early 21st century and access to the information and services it provides are responsible for economic growth, job creation, education, and a better quality of life. The City of Seattle is exploring all options that would increase the availability of competitive, affordable, and equal broadband internet access options that approach one gigabit of bandwidth across the city.")

¹¹ Sarah Owen, *Tribal officials outline infrastructure gap 'big as the Grand Canyon'* (April 22, 2021), <https://www.kold.com/2021/04/22/tribal-officials-outline-infrastructure-gap-big-grand-canyon/>.

¹² See Bruce Mitchell, *HOLC "Redlining" Maps: The Persistent Structure Of Segregation And Economic Inequality* (March 20, 2018), <https://hrcr.org/holc/>.

¹³ See Urban Collaboratory, University of Michigan, *Mapping Detroit's Digital Divide*, <https://www.urbanlab.umich.edu/project/mapping-detroits-digital-divide/> (last visited May 4, 2021).

digital redlining.¹⁴ The letter highlighted the fact that digital redlining is present not only in urban communities, but in rural areas as well.¹⁵ It is true.

Digital redlining is an issue in both urban and rural areas. In Champaign, Illinois, fiber broadband access is available but coverage ends almost completely outside of the downtown area, leaving only 0.5% of residents with access.¹⁶ Fiber is extremely limited and isolated in the urban centers of Lancaster City and the Town of Ephrata, Pennsylvania. Drifting away from the city centers into Lancaster County, only 21.4% of residents do not have broadband subscriptions, and 0.5% are still limited to a dial-up connection.¹⁷ This is an issue that can be corrected by empowering local leaders to hold providers accountable for serving an entire community.

Broadband Access and Affordability Strategies Require Municipal, Cooperatives, Mesh, and Other Nontraditional Network Models to Be Comprehensive.

Communities from Oregon, to Colorado, to Ohio, to North Carolina have leveraged public resources to expand Internet access in their communities. No two approaches are exactly the same, and each model allows communities to serve residents who have no other option. Public accountability is a key touchstone of municipal models, particularly when the people who design, build, and manage municipal networks are also community residents and use the service themselves.

Municipal broadband networks that serve residents directly offer some of the fastest speeds and highest quality connectivity in the nation while making prices readily transparent, selling service in symmetrical tiers, and maintaining affordability programs for low-income residents.¹⁸ These services were built in communities that lacked sufficient private broadband coverage, and where local leaders and community activists came together to build Internet as essential infrastructure, akin to communities that provide water, gas, or electric service.

Though municipalities offer tremendous quantifiable benefits to their communities, local officials often characterize the impact in qualitative terms, focusing on the widespread social

¹⁴ Letter from City of Baltimore Councilmembers Zeke Cohen, Ryan Dorsey, and Kris Burnett (March 16, 2021), <https://ewscripps.brightspotcdn.com/de/a3/2c/8209e2418b9f701aac1011f9aa/local-electeds-letter-to-fcc.pdf>.

¹⁵ Letter from City of Baltimore Councilmembers Zeke Cohen, Ryan Dorsey, and Kris Burnett (March 16, 2021), <https://ewscripps.brightspotcdn.com/de/a3/2c/8209e2418b9f701aac1011f9aa/local-electeds-letter-to-fcc.pdf> ("We also know that lack of access to high-speed internet isn't just a problem in urban communities; it also extends to rural communities. Although we've seen rising increases in connectivity levels, we continue to see Internet Service Providers put corporate wealth above the needs of communities who rely upon internet services as an essential utility when they refuse to build more infrastructure outside of the cities.")

¹⁶ See Federal Communications Commission "Fixed Broadband Deployment" (Last visited May 5, 2021), https://broadbandmap.fcc.gov/#/area-summary?version=jun2020&type=county&geoid=17019&tech=f&speed=25_3&vlat=40.14035238018403&vlon=-88.19619699999998&vzoom=8.712469356498191.

¹⁷ See US Census Bureau "2019: ACS 1-Year Estimate" (Last visited May 5, 2021), https://data.census.gov/cedsci/table?q=broadband&a=0100000US050000&tid=ACST1Y2019.S2801&mode=customize&layer=VT_2019_050_00_PY_D1&cid=S2801_C01_001E.

¹⁸ See Becky Chao and Claire Park, Cost of Connectivity, 33-37, 52-54 (2020), <https://www.newamerica.org/oti/reports/cost-connectivity-2020/focus-on-the-united-states/>.

benefits that local networks provide. EugNet, an open access network in Eugene, Oregon's downtown area, once measured their worth through return on investment, but the community has since realized widespread social benefits that they could not anticipate when they first constructed the network.¹⁹

Publicly owned WiFi and mesh networks also fill important gaps in communities that otherwise have no service at all, or must rely on spotty cell coverage or privacy invasive WiFi connection points. In San Rafael, California, where 39% of Canal neighborhood residents do not have broadband access at home and 57% of do not own a computer, the City partnered with a nonprofit organization to build a mesh network that provides free Internet access to residents.²⁰ This type of local problem-solving should be celebrated and recognized as a model.

Many local governments who have been forced to explore municipal broadband options have done so out of necessity. In Louisiana, City-Parish President, Joey Durel, who had a leadership role in launching one of the first municipally-owned companies providing Fiber-To-The-Home services in the country publicly stated, "I begged the private sector to do it so that we wouldn't have to." When there was little incentive for incumbent providers to expand service options, the City of Lafayette treated broadband as infrastructure which paved the way for LUS Fiber to introduce affordable, high-speed broadband for all of its residents and eventually in neighboring areas as well.

Municipalities understand the far-reaching consequences when residents do not have broadband access or are unable to afford it. Federal policy and resources should support local efforts to generate connectivity solutions for themselves, particularly in areas where there is little financial incentive for traditional providers to serve.

Communities That Remain Unserved or Underserved Will Remain At An Economic Disadvantage.

The disadvantages felt by communities who are disconnected today will persist long into the next decade. The Federal Reserve Bank of Philadelphia found a 27% point gap in the "labor force participation rate between workers with and without a computer with broadband in Philadelphia" and that "the unemployment rate is 7 points higher for workers without a computer with broadband at home."²¹

¹⁹ Matt Sayer, *Eugene's 'open-access' fiber optic network proving its worth* (June 4, 2018), <https://www.registerguard.com/news/20180604/eugenes-open-access-fiber-optic-network-proving-its-worth>.

²⁰ Canal Digital Access Equity Fund.

<https://donate.canalalliance.org/campaign/canal-digital-access-equity-fund/c294655> (last visited Feb. 10, 2021).

²¹ Alvaro Sanchez and Adam Scavette, *Broadband Access, Computer Use, and Labor Market Attachment in Philadelphia*, 8 (2020), <https://www.philadelphiafed.org/-/media/frbp/assets/community-development/reports/broadband-access-computer-use-and-labor-market-attachment-in-philadelphia.pdf>.

In announcing a program that will provide free, high-speed Internet access to low-income students to Chicago Public School students for four years, Mayor Lori Lightfoot stated that:

Reliable, high-speed internet is one of the most powerful equalizers when it comes to accessing information. It allows families to access digital remote learning and stay connected to family near and far, especially during COVID-19. It allows families to build career skills, apply for jobs, register to vote and stay up-to-date on current events. This program is a critical component of our STEP agenda and the efforts to end poverty and a part of our mission to drive improved academic outcomes at CPS.²²

Investing in Digital Equity & Inclusion Programs Is Central to Increasing Broadband Adoption.

Cities are developing their own digital equity and inclusion programs to help to bring broadband within reach for the most under-resourced households. But digital equity and inclusion programs cannot be an afterthought. They are central components of broadband access and adoption strategies that require manpower and resources.

Efforts to get broadband into unserved and underserved communities is all for naught if residents do not have the digital skills to benefit from broadband access and contribute to a digital economy. For students, digital literacy can be easily integrated into education. However, seniors, residents with disabilities, and young people who are not in school require intentional outreach to ensure that everyone can access and create online. Households who are struggling with basic digital literacy are among those who face insurmountable barriers associated with affordability and access to devices.

Sound Broadband Policy Starts With Better Mapping, *Now*.

Without knowing who has broadband service and who does not, it is impossible to direct resources to the communities that need them most. Accurate information about broadband access and adoption is a critical touchstone for effective federal support programs.

Communities are exploring a myriad of ways to improve this information. Some have conducted detailed digital equity studies, carefully considering the intersectional impacts of historic

²² Press release Mayor's Office, Chicago Launches Groundbreaking Initiative to Bridge Digital Divide, Providing Free High-Speed Internet Access to Over 100,000 CPS Students (June 25, 2020), https://www.chicago.gov/city/en/depts/mayor/press_room/press_releases/2020/june/CPSInternetAccess.html.

inequalities on broadband access and adoption.²³ Residents under-resourced by education, healthcare, and economic opportunities face similar barriers to accessing online services.

Federal broadband maps are well known to overstate broadband deployment.²⁴ In addition to inaccurately capturing where infrastructure is and is not, bad mapping has a ripple effect on communities. Inaccurately identifying areas as “served” when they are not disadvantages local investment in essential infrastructure as critical as roads and bridges.

Federal funding programs targeted at addressing broadband deployment in areas that lack service base their award decisions on federal maps. Many states have adopted a similar methodology, relying on FCC data as a baseline for state maps and targeting funding at communities that are marked as unserved. This process has an exclusionary impact on local connectivity initiatives. Local leaders have challenged these maps, but are persistently positioned as responding to maps with their own data and speed tests, rather than being invited in as data collection partners.

Though Congress directed the FCC to adopt a new data collection methodology, that process has been slow and stringent.

Persistent gaps in information remain. Broadband speed demands are dynamic, but FCC speed classifications can hardly keep pace with advancements in technology and transitions in widespread usage. Although the pandemic has vastly increased household capacity needs over the last year, the latest Broadband Deployment Report concludes that the digital divide is shrinking, failing to account for persistent gaps between the minimum service threshold and the needs of households who have begun using multiple video conferencing platforms at the same time as children complete online schoolwork.²⁵

At the same time, community leaders have vastly different projections about how much to increase the minimum speed. Local officials in states like California, Ohio, and Indiana agree that the current baseline is not enough to meet residents’ daily needs. Most local governments that provide broadband service use fiber because of its superior performance and upgrade potential.

The FCC has declined to collect information about broadband pricing, which leaves enormous knowledge gaps that could otherwise inform local, state, and federal affordability initiatives. Many communities do not have a clear picture of what affordable price would best serve their

²³ See e.g. Press Release, City of Cambridge, Digital Equity Study (April 20, 2021), <https://www.cambridgema.gov/news/2021/04/city-of-cambridge-releases-comprehensive-digital-equity-study>; City of Kansas City, Missouri, *Digital Equity Strategic Plan*, <https://www.kcmo.gov/city-hall/departments/city-managers-office/digital-equity-strategic-plan> (last visited May 4, 2021); Cook County, Digital Equity, <https://www.cookcountynil.gov/code> (last visited May 4, 2021).

²⁴ See e.g. Gov’t. Accountability Office, Broadband Internet: FCC’s Data Overstate Access on Tribal Lands (2018), <https://www.gao.gov/assets/gao-18-630.pdf>.

²⁵ See generally *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 20-269, Fourteenth Broadband Deployment Report (2021), <https://www.fcc.gov/document/fcc-annual-broadband-report-shows-digital-divide-rapidly-closing>.

residents' needs because existing private provider prices are not transparent, affordability programs are under-utilized, and residents for whom affordability is the greatest challenge may not willingly disclose that information.

Communities that do have a clear picture of affordability recognize that some residents will never be able to afford a subscription at any rate. Even residents who do not qualify for affordability programs need consistent, transparent, and fair prices. Municipal networks address these two concurrent affordability concerns by selling service in symmetrical tiers, making price information publicly available on their websites, and in some cases offering programs for qualifying low-income households.²⁶

This Is a Pivotal Moment.

Communities that are equipped with resources to address long-standing digital inequities are better able to address economic and social disparities on their own. In fact, it is the only way for them to tailor responses to the innumerable symptoms of the digital divide.

The need is expansive. The timeline is unforgiving. Local governments have made broadband equity a priority. More state governments are recognizing it as an imperative. Next Century Cities has asked President Joseph Biden and his administration²⁷ to make universal broadband a priority. We implore Congress to do the same.

Together, we can get broadband to every household by tapping into the genius and creativity that can be found in a variety of network models, including public-private partnerships, municipally owned, cooperatives, mesh, and others. All of these models can be strengthened by centering digital equity, a decision that could make the difference between having broadband nearby versus reliable and affordable connectivity piercing the threshold of a resident's front door.

²⁶ See e.g. NextLight, *Residential*, <https://my.nextlight.com/residential/> (last visited May 4, 2021); Ketchikan Public Utility, *Residential High Speed Internet*, <https://www.kmutel.com/residential/internet/> (last visited May 4, 2021); The Community Agency, *Residential Internet*, <https://caexpress.net/residential/internet/> (last visited May 4, 2021).

²⁷ See Next Century Cities, *Next Century Cities Pens a Letter to President Biden and Vice President Harris Urging Leadership on a National Broadband Strategy* (March 15, 2021), <https://nextcenturycities.org/next-century-cities-pens-a-letter-to-president-biden-and-vice-president-harris-urging-leadership-on-a-national-broadband-strategy/>.

Mr. DOYLE. Thank you very much.

The Chair now recognizes Mr. Lewis for 5 minutes.

STATEMENT OF CHRIS LEWIS

Mr. LEWIS. Chairman Pallone, Ranking Member Latta, Chairman Doyle, and Ranking Member McMorris Rodgers, thank you for inviting me to this important hearing today.

Our country is facing a unique opportunity about broadband right now. We have bipartisan support in the Congress for addressing the broadband digital divide. The country supports Congress taking action, due to the way in which the COVID pandemic has shown every household just how essential a robust, affordable, and reliable broadband connection is to every American.

The challenge in front of us is to make sure that the policy actions that we take are comprehensive enough to address all the drivers of the digital divide, because it is clear that the policy and marketplace structures in the decade leading up to the pandemic were inadequate to the task and left many communities behind.

I have personally met and heard from individuals who have been left out by the current policies and structures of investment. When I was a staffer at the FCC, I was sometimes asked by congressional staff if I could talk with a constituent who was impacted by the high cost of rural deployment or the digital redlining decisions made by a broadband provider. They would share how all they wanted was for the high-speed broadband that was available down the street or in the next neighborhood to be extended to them. They would say they had spoken to the provider, who had decided that they either would not or could not extend service those additional few blocks.

And then I would have to share the unfortunate news that there were no current rules at the FCC that could require the company to extend service to them. These broadband connections could be the difference between that constituent finding a job or starting a business without leaving the community that they love.

And in 6 years on the local school board in Alexandria, Virginia, I saw the impact of poverty on educational equity. Alexandria is a dense, small city—a fairly affluent city also, but with a high poverty student population. A majority of our students are Latinx and Black, and a significant percentage of our families have emigrated from around the world. Alexandria's public schools use technology to offer many options and support for students to succeed and for parents to support their students' education.

Teachers suggest online tools to preteach and reteach topics outside of normal class hours to help students who are working at a different level or a different pace. Parents can closely monitor their child's performance in online platforms and are encouraged to communicate with busy teachers over email. Our alternative high school campus is over 10 years old now, offering flexible hours and largely online classes for students who need to work to support their families or are on an accelerated program. These innovations are limited for many families who can't afford the high cost of broadband in their home from the one option available in our city.

These real-life examples are inequity—these real-life examples of inequity disproportionately touch our most marginalized commu-

nities, from rural and Tribal communities, communities of color, and low-income households found in rural, suburban, and urban communities alike. To fully close the digital divide, we must do more than simply fund broadband providers to build more. In my written testimony I provided many ideas, but in the short time I want to highlight four key ideas to directly address the challenge of affordability and the inequities of digital redlining.

Congress recognized the affordability need when it authorized the Emergency Broadband Benefit last year. However, low-income Americans will still need support beyond the COVID crisis. It is time for Congress to create a long-term solution for low-income broadband support.

There are several ways that Congress can pay for these critical supports, including through a reform of the Universal Service Fund Contribution System to include broadband and lowering the size of the fee on people's phone bills.

Congress could also create or supplement a long-term benefit. Appropriations are an option, too, but would raise the concern of predictability with the annual political process. Whatever the funding mechanism, it must provide predictability and sustainable, long-term funding.

Funding for devices for low-income families would also make sure that parents don't have to choose between two kids' homework needs or their own.

In addition to long-term, low-income broadband funding, Congress should promote policies that encourage actual competition in local broadband markets, such as open access networks and broadband builds supported or led by local government or regional co-ops.

The FCC should be charged to study and report on broadband competition, including collecting actual costs and actual price data where they are and where they are available.

Finally, we also need the FCC to be empowered to address digital redlining. Several examples of redlining have been studied and reported by journalists and nonprofits over the years in cities like Cleveland, Dallas, and Kansas City. Congress should begin this work by requiring the FCC to study the full scope of the redlining problem, and take remedial steps to ensure every household has access to robust, affordable broadband.

Thank you for your work on this important issue, and I look forward to your questions.

[The prepared statement of Mr. Lewis follows:]

Testimony of Chris Lewis¹
President and CEO
Public Knowledge

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

Broadband Equity: Addressing Disparities in Access and Affordability

May 6, 2021

I. Introduction

Chairman Doyle, Ranking Member Latta, Chairman Pallone, Ranking Member McMorris Rogers, and members of the Communications and Technology Subcommittee: Thank you for inviting Public Knowledge here today to testify on this vitally important topic — disparities in broadband access and affordability. My name is Chris Lewis and I am the President and CEO of Public Knowledge, an organization that is celebrating its 20th anniversary this year, and is dedicated to promoting freedom of expression, an open internet, and access to affordable communications tools and creative works.

Over the life of Public Knowledge, we have testified before Congress; filed comments with various agencies, including the Federal Communications Commission; and written extensively about the need to ensure all Americans have access to affordable, reliable high-speed broadband. Before the pandemic, broadband was already the essential communications tool of the 21st century, but the pandemic has brought into clear focus just how essential broadband is, and how persistent the digital divide is. As schools have gone virtual, a lack of broadband access for schoolchildren means they are falling behind their peers. In fact, we know that going into this pandemic, approximately 17 million students lacked access to home internet.² A lack of broadband access for working parents means they risk being unable to continue to provide for their families. A lack of broadband access for retired couples living in the many rural parts of our country means living in isolation because they cannot connect with loved ones. A lack of broadband access for many with pre-existing conditions means being unable to receive medical care because they cannot risk in-person care, nor access telehealth.

Low-income, marginalized, and Tribal communities are particularly unlikely to be connected. Only 66% of African Americans and 61% of Hispanics report having broadband at

¹ I would like to thank Jenna Leventoff and Greg Guice for their support in preparing this statement.

² Hailly T.N Korman et. al. *Missing in the Margins: Estimating the Scale of the COVID-19 Attendance Crisis* (Oct. 21, 2020), <https://bellwethereducation.org/publication/missing-margins-estimating-scale-covid-19-attendance-crisis#Why%20arent%20students%20attending%20school?>

home.³ On rural Tribal lands, less than half of residents have access to fixed broadband.⁴ The cost of broadband, a lack of devices and digital skills, and a pervasive problem of broadband providers investing less in broadband infrastructure in low-income and marginalized communities are to blame for this disparity. These inequities cannot remain, so I am here today to talk about how Congress can make sure that *everyone* gets connected to affordable, reliable, high-speed internet.

I. Broadband Is an Essential Utility

Just like water and electricity, broadband is an essential utility. Long before the COVID-19 crisis, Americans turned to broadband “for every facet of daily life.”⁵ Broadband provided students with academic support to meet their specific education needs; it offered veterans and others in remote areas a way to connect more often with their health care providers; and it was the primary place to find a job -- all before the COVID-19 crisis hit. Broadband helps small businesses serve their customers and reach markets worldwide; allows first responders to prepare for, respond to, and recover from natural disasters and acts of terrorism; and enables constituents to access essential government services (like renewing a driver’s license), connect with family and friends, and keep up to date on what is happening in the country and abroad.⁶ However, COVID-19 has made the importance of broadband all the more evident. During the pandemic, broadband has been critical in supporting online school and work, access to health care and medical information, and even vaccine distribution. This is why a recent survey shows that 76% “agree” or “strongly agree” that internet service is as important as electricity or water.⁷

Congress agrees with the public. In the CARES Act, which passed the Senate unanimously and on a voice vote in the House, Congress included internet access as a utility, defining a “covered utility payment” as “payment for . . . electricity, gas, water, transportation, telephone or internet access.”⁸

³ Andrew Perrin and Erica Turner, *Smartphones help blacks, Hispanics bridge some - but not all - digital gaps with whites*, (August 20, 2019), <https://www.pewresearch.org/fact-tank/2019/08/20/smartphones-help-blacks-hispanicsbridge-some-but-not-all-digital-gaps-with-whites/>.

⁴ Consumer & Governmental Affairs Bureau et al., *Report on Broadband Deployment in Indian Country, Pursuant to the Repack Airwaves Yielding Better Access for Users of Modern Services Act of 2018* at 3 (May 2019), <https://docs.fcc.gov/public/attachments/DOC-357269A1.pdf>.

⁵ Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 14-126, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, 30 FCC Red. 1375, 1377 ¶ 2 (2015).

⁶ Broadband Connects America, *Supporting Broadband Keeps Small Businesses Alive and Promotes Economic Development*, <http://www.broadbandconnectsameric.com/wp-content/uploads/2020/09/Broadband-and-Small-Business.pdf>; Broadband Connects America, *How Broadband Connectivity Powers Civil Engagement*, <http://www.broadbandconnectsameric.com/wp-content/uploads/2020/09/Broadband-and-Civic-Engagement.pdf>; Broadband Connects America, *Why Supporting Broadband Is an Investment in Our Homeland Security and Public Safety*, <http://www.broadbandconnectsameric.com/wp-content/uploads/2020/09/Broadband-and-Homeland-Security.pdf>.

⁷ Consumer Reports, *Importance of Broadband Internet*, Consumer Reports Research Snapshot (Feb. 2021), <https://advocacy.consumerreports.org/wp-content/uploads/2021/03/2021-Feb-Broadband-Survey.pdf>.

⁸ CARES Act, 15 USC 9005(a)(5) (2021).

Recently, President Biden's administration noted that with electricity generations ago, "the federal government recognized affordable access is necessary to fully participate in modern society and the modern economy."⁹ He went on to say that "broadband internet is the new electricity," and we must bring "affordable, reliable, high-speed broadband to every American."¹⁰

Our nation's leaders understand that broadband is essential, so our nation's policies must account for that fact by having the agency that, until recently, oversaw broadband, the Federal Communications Commission, re-engage to ensure all Americans have access. Doing so will lead to more ubiquitous, robust, reliable, and affordable broadband.

II. Congress Must Ensure That Broadband Is Affordable

Broadband in the United States is too expensive -- in fact, it's among the most expensive in the world. According to New America's Open Technology Institute, the average monthly price for fiber broadband averages \$79.92 in the U.S., compared to just \$47.63 in Europe.¹¹ Furthermore, ancillary fees (like modem rental fees, data overages, and early termination fees) can add up to an additional 75% to the cost of monthly internet service.¹² The high cost of broadband is one of the primary reasons why the United States has such a staggering digital divide. A 2019 survey of American households found the cost of broadband to be among the top reasons for households not subscribing to broadband service.¹³ This is why 35% of low-income households with schoolchildren do not have high-speed internet.

In order to ensure that everyone can afford broadband, Congress must take steps to increase competition in the marketplace, which will reduce prices. However, even with lower prices, some of our nation's most vulnerable will still be unable to afford this critical service. For this reason, Congress must create a long-term benefit so that no one, particularly those most in need, is left behind.

A. Congress Must Direct the FCC To Collect Data About the Price of Broadband

We can't fix our nation's affordability problem without understanding it. Congress can take a key first step to promote broadband affordability by passing the Lift America Act, which would, in part, ensure that the FCC is regularly collecting data about the price of broadband.¹⁴ Just as a bipartisan Congress recognized that we need accurate data about where broadband is

⁹ The White House, *Fact Sheet: American Jobs Plan* (Mar. 31, 2021), The White House Briefing Room, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/>.

¹⁰ *Id.*

¹¹ Becky Chao & Claire Park, *The Cost of Connectivity 2020* at 28 (Jul. 15, 2020), New America, https://d1v8sb8ieg2f8e.cloudfront.net/documents/The_Cost_of_Connectivity_2020_XatkXnf.pdf.

¹² *Id.* at 7 ("Modem rental fees in the United States can add an additional 75 percent to the cost of monthly internet service.").

¹³ Rafi Goldberg, *Unplugged: NTIA Survey Finds Some Americans Still Avoid Home Internet Use*, National Telecommunications and Information Administration, (Apr. 15, 2019), <https://www.ntia.gov/blog/2019/unplugged-ntia-survey-finds-some-americans-still-avoid-home-internet-use>.

¹⁴ See *LIFT America Act*, 117th Cong. (introduced, bill number pending). § 12302 (2021).

and isn't available in order to close the digital divide, so too should it realize that we need data about price to better tailor support programs to close the digital divide.¹⁵

B. Congress Must Foster a Competitive Broadband Marketplace

Creating a competitive broadband marketplace is essential for making broadband affordable. We know from competition data that new providers entering a region allow consumers to access better and more affordable broadband options.¹⁶ For example, AT&T customers in regions where a competitor is present pay approximately \$70 per month for gigabit connections; AT&T charges \$60 more a month for that same connection in regions with less competition.¹⁷ Although competition is key to lowering prices, unfortunately more than 20% of households have access to just one fixed provider offering broadband speeds, and 44% have access to just two.¹⁸ We need more competition and must fight monopoly pricing.

These studies demonstrate that we need more continual studies on the impact of competition on broadband prices and the quality of service. Luckily, the Lift America Act requires a biennial study of how competition impacts the price of broadband.¹⁹ This information can help policymakers better promote affordability and determine if and where consumers face monopoly pricing.

Municipal networks can also promote competition. Many traditional providers don't serve areas that do not promise sustained profitability over time, even with deployment funding, so federal funds should be used to encourage local broadband deployment by whatever means necessary. Congress and the FCC have been working to ensure access to broadband for the last two decades. It is no longer enough for us to tell these underserved communities that they must continue to wait. States like Arkansas have realized this fact and have moved to repeal their prohibitions on municipally owned broadband providers.²⁰ Unfortunately, municipalities in 22 states are still blocked or banned from serving their communities.²¹ Congress should preempt these unduly restrictive laws by passing the Community Broadband Act (included within the Lift

¹⁵ See *Broadband DATA Act*, 47 USC 609 (2020).

¹⁶ Jonathan Sallet, *Broadband for America's Future: A Vision for the 2020s* at 49-50, Benton Institute for Broadband & Society (Oct. 2019), https://www.benton.org/sites/default/files/BBA_full_F5_10.30.pdf.

¹⁷ Karl Bode, *Harvard Study Shows Why Big Telecom Is Terrified of Community-Run Broadband*, Vice (January 12, 2018) https://www.vice.com/en_us/article/d345pv/harvard-study-shows-why-big-telecom-is-terrified-of-community-run-broadband.

¹⁸ Federal Communications Commission, *2020 Communications Marketplace Report* at 87, GN Docket No. 20-60 (Dec. 31, 2020), <https://docs.fcc.gov/public/attachments/FCC-20-188A1.pdf>.

¹⁹ *LIFT America Act* § 11102(1)(G).

²⁰ Nick Keppler, *Why Did Arkansas Change Its Mind on Municipal Broadband*, Bloomberg CityLab (Apr. 17, 2019), <https://www.bloomberg.com/news/articles/2019-04-17/arkansas-will-allow-municipal-broadband-after-all>.

²¹ On April 13, 2021, Tyler Cooper at BroadbandNow listed 23 states that block or ban municipal broadband, but since then Arkansas has reversed course. Compare Tyler Cooper, *Municipal Broadband Is Restricted in 18 States Across the U.S. in 2021*, BroadbandNow Research, (Apr. 13, 2021), <https://broadbandnow.com/report/municipal-broadband-roadblocks/> with Nick Keppler, *Why Did Arkansas Change Its Mind on Municipal Broadband*, Bloomberg CityLab (Apr. 17, 2019), <https://www.bloomberg.com/news/articles/2019-04-17/arkansas-will-allow-municipal-broadband-after-all>.

America Act) and should prioritize funding municipal broadband projects and other alternative providers (like co-ops).²²

Deployment funding should also prioritize funding for “open access” infrastructure — infrastructure that is built and owned by one entity (often local governments, but sometimes private companies) but leased by service providers. Open access projects create a competitive marketplace without adding significantly to the cost of deployment. For example, the municipally owned open access network launched in Ammon, Idaho, “reduced the cost of a 1 Gbps connection available via one of the ISPs from \$99 a month... to \$9.99 a month.”²³ Finally, Congress should direct the FCC and other federal agencies to remove “overbuilding” restrictions from future deployment funding (although they may still prioritize funding completely unserved areas). Overbuilding is just a synonym for competition or upgrades to local networks. To encourage competition and not discourage states from investing in broadband, we need to provide funding for these efforts.²⁴

C. Congress Must Create a Long-Term Broadband Subsidy For Low-Income People

Last year, Congress took an enormous step towards ensuring that low-income households and those struggling financially because of the pandemic can afford to connect by establishing the Emergency Broadband Connectivity Fund in the Consolidated Appropriations Act of 2021.²⁵ The fund gave the FCC \$3.2 billion to establish an emergency broadband benefit (EBB) which would provide eligible households with a \$50 discount on their broadband service up to six months during the pandemic. However, low-income consumers will still need assistance when the pandemic ends, even if the cost of broadband is eventually decreased through competition. This is why Congress must take steps to create a long-term broadband benefit.

Congress has a history of enabling low-income households to access utilities (like broadband) by providing financial support.²⁶ A long-term emergency broadband benefit must continue the EBB’s legacy of broad consumer eligibility, should provide enough funding to enable consumers to access service that meets their needs, and should guarantee that all eligible consumers complete enrollment by promoting automatic verification of identity and eligibility.²⁷

²² See *LIFT America Act* § 14001; H.R. 1631, 117th Cong. (2021).

²³ Jay Woodruff, *The City with the Best Fiber-Optic Network in America Might Surprise You*, FastCompany (Oct. 21, 2019), <https://www.fastcompany.com/90416863/the-city-with-the-best-fiber-optic-network-in-america-might-surprise-you>.

²⁴ See Jenna Leventoff, *The FCC’s New Initiative Punishes States That Have Tried to Close the Digital Divide*, Public Knowledge Blog (Feb. 20, 2020), <https://www.publicknowledge.org/blog/the-fccs-new-initiative-punishes-states-that-have-tried-to-close-the-digital-divide/>.

²⁵ *Consolidated Appropriations Act of 2021*, H.R. 133 § 904 (2020).

²⁶ *Low Income Household Water Assistance Program*, U.S. Department of Health & Human Services, <https://www.acf.hhs.gov/ocs/programs/lihwap/Help-With-Bills>, USA Gov <https://www.usa.gov/help-with-bills>; Brett Walton, *Congress Adds \$638 Million in Water-Bill Debt Relief to Coronavirus Package* (Dec. 22, 2020), <https://www.circleofblue.org/2020/world/congress-adds-638-million-in-water-bill-debt-relief-to-coronavirus-package/>.

²⁷ Congress took great pains to ensure that the Emergency Broadband Benefit was open to a broader range of individuals in need than Lifeline. In addition to Lifeline recipients, it made Pell recipients, students getting free/reduced school meals, and those financially harmed by the pandemic eligible for the Emergency Broadband Benefit. *Consolidated Appropriations Act of 2021* § 904. It should keep eligibility for a long-term subsidy broad, to

Of course, we will need to figure out how to pay for any long-term broadband benefit. We urge Congress to consider a broad array of options, and combinations of options, for doing so. One sustainable option is funding through a modified Universal Service Fund (USF). The current USF contributions mechanism unfairly burdens some more than others, but an expanded contributions base that assesses all fixed and mobile broadband revenues would offer a predictable, sustainable way to pay for a long-term subsidy.²⁸ Congress could also consider using the billions of dollars brought in from spectrum auctions to create or supplement a long-term benefit.²⁹ We are concerned that solely funding a long-term benefit through Congressional appropriations would not be predictable or sustainable; however, federal funding would be an excellent way to supplement other funding mechanisms. Combined with the pricing data called for earlier in my testimony, we can ensure that the benefit amount evolves as we tackle the overall affordability of broadband, adjusting with the prevailing market price of the service.

D. Congress Must Mandate That Providers Offer a Low-Cost Option

Congress should also require any entity receiving federal funding to offer a low-cost option for anyone who wants to take advantage of it. Asking beneficiaries of federal funds to help us tackle affordability just makes good sense. These low-cost options will be essential for those who might not qualify for low-income support, but who nevertheless must stretch their budgets in order to afford broadband. Any low-cost option should enable users to meaningfully engage online, but need not be as fast as higher-priced options. Such a requirement should be relatively easy for providers to implement, as many already offer a low-cost plan.³⁰

allow anyone in need to access help. Congress should also prepare to ensure that consumers can easily apply and be verified for a long-term subsidy. The National Verifier is intended to verify consumer eligibility through an automatic process, enabled by connections with state and federal databases containing information about eligible program recipients. Unfortunately, the National Verifier does not have connections with many (if not most) relevant databases -- including the Department of Education's database about Pell recipients. This means that many applicants are forced to undergo a manual application process. However, a Government Accountability Office study has shown that "more than two-thirds of new applicants and reverification applicants who went through the manual review process abandoned their applications." Government Accountability Office, *FCC Has Implemented the Lifeline National Verifier but Should Improve Consumer Awareness and Experience* at 16 (Jan. 2021), <https://www.gao.gov/assets/gao-21-235.pdf>. In order to ensure that consumers can complete their applications, Congress should consider ways to mandate that relevant state and federal agencies enter into data matching agreements with USAC, or should find other ways to reduce the burden on long-term subsidy applicants.

²⁸ See Michael Williams & Wei Zhao, *NTCA-USF Study* (May 7, 2020).

<https://www.ntca.org/sites/default/files/documents/2020-05/2020-05-07%20-%20Williams-Zhao%20report%20Final.pdf>; In the Matter of Universal Service Contribution Methodology, *Comments of AARP* at 11, WC Docket No. 06-122 (Jul. 15, 2020) (Noting that the current contributions mechanism places a "lopsided and unfair burden...on older Americans" and results "in a situation that is both unsustainable and unfair").

²⁹ See generally Michael Calabrese and Lester M. Salamon, "How to Close America's Digital Equity Gaps: Toward a Digital Futures Foundation," *A Concept Note*, (Baltimore, MD: Johns Hopkins Center for Civil Society Studies and Washington, DC: New America, April 2021).

³⁰ Comcast's Internet Essentials program provides 50/5 Mbps service for \$9.99 a month. *Internet Essentials*, Internet Essentials by Comcast, <https://www.internetessentials.com/>; See also Spectrum Internet Assist, Spectrum, <https://www.spectrum.com/internet/spectrum-internet-assist>; Access from AT&T, AT&T, <https://www.att.com/internet/access/>.

III. Congress Must Ensure Everyone has Access to a Device and Can Learn Digital Literacy Skills

Even if broadband is available and affordable, some consumers may still be left behind because they lack a device or the digital skills necessary to meaningfully use the service. Congress must take action to ensure that these problems are not standing in the way of getting everyone across the nation connected so that all people can fully participate in society.

Thirty-one percent of non-broadband users cite the cost of a computer as one of the reasons they don't have broadband at home.³¹ The problem is particularly stark for those living in marginalized communities. Latinx teens are twice as likely to say they don't have access to a home computer.³² In order to ensure that everyone can get online, Congress must create policies (such as a voucher program) that make affordable and reliable devices available to everyone who needs them. In most cases, these programs should provide devices based on the needs of a household so that families don't have to choose who gets to attend online classes or work remotely. Moreover, these programs should prioritize computers and tablets with keyboards. For most consumers, computers and tablets are best suited to homework, remote work, and telehealth. As Acting FCC Chairwoman Jessica Rosenworcel has noted, "A phone is just not how you want to research and type a paper, apply for jobs, or further your education."³³ Congress acknowledged that desktops, laptops, and tablets are the right tools in its establishment of the EBB and we believe that is the right policy to continue.

Congress must also pass legislation -- like the Digital Equity Act (included within the Lift America Act) -- intended to teach residents how to use devices and navigate the internet.³⁴ According to the National Skills Coalition, one-third of Americans lack digital skills they need to successfully navigate digital devices.³⁵ Others lack the skills they need to navigate the web. Congress must ensure that everyone is able to learn the skills they need to meaningfully connect.

IV. Congress Must Ensure Universal Access to Affordable, Reliable, High Speed Internet by Banning Digital Redlining

Access to affordable, reliable, high-speed internet must be available to *everyone* regardless of where they live, how much money they earn, or what they look like. Unfortunately, that is not the case in America today. Not only are rural and Tribal communities unconnected, but many other low-income and marginalized communities also find themselves subject to slow, unreliable internet (if they have internet access at all), because internet service providers have determined they are uneconomic to serve. The same neighborhoods that were once redlined by

³¹ Monica Anderson, *Mobile Technology and Home Broadband 2019*, Pew Research Center (June 13, 2019), <https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019/>.

³² Brooke Auxier & Monica Anderson, *As Schools Close Due to The Coronavirus, Some U.S. Students Face a Digital 'Homework Gap'*, Pew Research Center Factank (Mar. 16, 2020), <https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/>.

³³ Jessica Rosenworcel, Remarks of Commissioner Jessica Rosenworcel at the National League of Cities Congressional City Conference (Mar. 12, 2018), <https://docs.fcc.gov/public/attachments/DOC-349670A1.pdf>.

³⁴ Digital Equity Act, S. 1167, 116th Cong (2019); *LIFT America Act* § 11001.

³⁵ National Skills Coalition, *Applying a racial equity lens to digital literacy* (March 20, 2020) <https://www.nationalskillscoalition.org/resources/publications/file/Digital-Skills-Racial-Equity-Final.pdf>.

banks and insurance companies now face similar discrimination by ISPs, which adds to an already substantial digital divide. This practice of investing less in broadband infrastructure in low-income and marginalized communities is called “digital redlining.” There is documented evidence of digital redlining occurring in Cleveland, Oakland, Dallas, Detroit, and Kansas City -- and it’s likely far more widespread.³⁶ Advocates suspect it happens at the outskirts of population centers in urban and rural areas, as well as in Tribal communities and marginalized communities. In the past, we had laws in place that prevented this redlining, requiring that cable and telecommunications providers had an obligation to serve all residents in their franchise of service areas.³⁷

Internet service providers likely redline because they don’t feel that offering or upgrading service in these communities is profitable enough. However, because many of these communities are densely populated with paying customers (and there could be even more paying customers if Congress were to create a long-term broadband benefit), ISPs can still profit. The Electronic Frontier Foundation studied Frontier’s bankruptcy filings and found that despite high upfront costs, over time, the company could have easily profited if it upgraded households from DSL to fiber.³⁸ In addition, Chattanooga, Tennessee, which is not particularly dense, outlaid about \$20,000 in 2009 to build fiber. By 2019, they were making about \$40,000 a year in profit, even though, as a municipal network, they are not trying to make a profit!³⁹ Thus, profitability is not a good excuse to keep leaving marginalized communities behind.

Congress must step in and ask the FCC to conduct a study to better understand the scope of the problem and see how widespread digital redlining is. Once we know, the FCC should take whatever remedial steps are needed to ensure providers offer everyone in their service area *comparable* affordable, reliable, high-speed broadband. This would ensure that those in low-

³⁶ See Bill Callahan, *AT&T’s Digital Redlining of Dallas: New Research by Dr. Brian Whittacre*, National Digital Inclusion Alliance (Aug. 6, 2019), <https://www.digitalinclusion.org/blog/2019/08/06/atts-digital-redlining-of-dallas-new-research-by-dr-brian-whittacre/>; Matthew Marcus, *AT&T Accused of Digital Redlining in Detroit*, Community Networks (Oct. 18, 2017), <https://muninetworks.org/content/atl-accused-digital-redlining-detroit>; Greenlining, *On the Wrong Side of the Digital Divide: Life Without Internet Access, and Why We Must Fix It in The Age of COVID-19*, Greenlining (June 2, 2020), <https://greenlining.org/publications/online-resources/2020/on-the-wrong-side-of-the-digital-divide/>; Bill Callahan, *AT&T’s Digital Redlining of Cleveland*, National Digital Inclusion Alliance (Mar. 10, 2017), <https://www.digitalinclusion.org/blog/2017/03/10/atts-digital-redlining-of-cleveland/>; Khalil Abdullah, *Google’s Broadband War Redlining Black Communities*, The Philadelphia Tribune (Jan. 6, 2017), https://www.phillytrib.com/commentary/googles-broadband-war-redlining-black-communities/article_78510d50-d377-59ef-8032-2db568d647c4.html.

³⁷ 47 U.S.C. §§ 214(e)(3), 541. In addition to these federal laws, states had their own franchising laws for telecommunications services (usually at the state level) and for cable services (at the franchise level). From 2005-07, local exchange carriers looking to enter the video market -- joined by incumbent cable operators -- persuaded many state legislatures to shift to a system of state-wide franchising and eliminated the requirement to serve all residents within the franchise area. See Heather Morton, *Statewide Video Franchising Statutes*, National Conference of State Legislators (May 31, 2019), <https://www.ncsl.org/research/telecommunications-and-information-technology/statewide-video-franchising-statutes.aspx>.

³⁸ Ernesto Falcon et al., *Frontier’s Bankruptcy Reveals Why Big ISPs Choose to Deny Fiber to So Much of America*, Electronic Frontier Foundation (Apr. 30, 2020), <https://www.eff.org/deeplinks/2020/04/frontiers-bankruptcy-reveals-cynical-choice-deny-profitable-fiber-millions>.

³⁹ Ernesto Falcon, *The FCC and States Must Ban Digital Redlining*, Electronic Frontier Foundation (Jan. 11, 2021), <https://www.eff.org/deeplinks/2021/01/fcc-and-states-must-ban-digital-redlining>.

income communities, marginalized communities, Tribal reservations, and rural communities can connect as reliably as their peers in wealthier communities.

V. Promoting Universal Access To Affordable, Reliable, High-Speed Internet Is a Bipartisan Issue

Clearly, we must close the digital divide and as a policy matter, there are concrete steps Congress can take to do so. Communities without affordable broadband, including low-income and marginalized communities, are the ones being hurt by inaction. Members on both sides of the aisle recognize that their constituents cannot partake in modern society without broadband; they recognize that it's essential. Both Democrats and Republicans included broadband in their infrastructure plans.⁴⁰ This is why Congress must come together to ensure universal affordable access to high-speed reliable broadband for *everyone*.

When Congress has come together in the past to tackle the digital divide, it created new broadband maps showing where broadband is and isn't available, provided funding to promote deployment of these networks, and provided funding for digital skills training.⁴¹ Building on that record must be the calling of this Congress. Your constituents have made up their minds and concluded broadband is an essential service; I implore you to help meet their expectations and ensure that, as a country, we provide them meaningful access to affordable, reliable, high-speed broadband.

VI. Conclusion

Congress must come together to close the digital divide. Broadband is too important to continue to allow any community, but particularly low-income and marginalized communities, to go without because they cannot afford it. Broadband represents economic opportunity, educational opportunity, and the opportunity for better health and civic engagement. A lack of access further exacerbates the economic plight and equity issues we face as a nation. We have a shared, achievable goal -- ensuring broadband is universally available and affordable regardless of income, location, or demographic characteristics. Public Knowledge has offered a few solutions here, but we look forward to further engaging with all of you to craft bipartisan solutions that help us address this challenge.

⁴⁰ See The White House, *Fact Sheet supra* note 9; *LIFT America Act*; Kelsey Snell, *Countering Biden, Senate Republicans Unveil Smaller \$568 Billion Infrastructure Plan*, NPR Morning Edition (Apr. 22, 2021), <https://www.npr.org/2021/04/22/989841527/countering-biden-senate-republicans-unveil-smaller-568-billion-infrastructure-pl>.

⁴¹ See *Broadband DATA Act*; H.R.1, § 6001, 111th Congress (2009-2010).

Mr. DOYLE. Thank you, Mr. Lewis. That concludes our witnesses' opening statements. We are now going to move to Member questions.

Each Member will have 5 minutes to ask questions of our witnesses. I ask all of my colleagues to try to stay in that 5-minute range for us. So I will start by recognizing myself for 5 minutes.

Ms. Ochillo, your organization has long advocated that cities and municipalities can benefit from having the flexibility to build broadband networks that fit their own needs. What are these benefits, and how have cities and municipalities that built their own networks responded to the pandemic?

Ms. OCHILLO. Well, thank you for the question. And one of the things that we think is most important to say at the outset is that we believe that communities should have the choice to decide what type of network they need to have. Sometimes that is going to mean partnering with the providers that are already in their market. Sometimes that means they are going to have to go it alone and build maybe a municipal network, an open-access network. They might have to partner with other counties and municipalities.

But we think that it is important that they actually have choice, and that, especially when we are talking about communities that have had to go it alone, specifically in municipal networks, it takes a lot of community buy-in, building resources, and planning to actually launch those networks. But once they are up and running, they provide some of the fastest service, some of the best speeds. And a lot of the times they have accountability measures because the people who are running those networks live in those communities.

And quite frankly, we know that the current model is not getting to every household in our communities, so we think that it is really important to be able to support, whether it is a municipal network, a mesh network, an open access network, for communities to actually be able to have choice to determine their own broadband future.

Mr. DOYLE. Thank you.

Mr. Lewis, I know your organization also has advocated for these types of networks. Do you want to add anything to that?

Mr. LEWIS. Well, I certainly agree with Ms. Ochillo, the choice of different types of buildings is important for local communities, so that they can take the risk that is appropriate to their communities' needs.

Mr. DOYLE. Let me ask you this, Mr. Lewis. You talk about digital redlining in your testimony. How can legislation like the Accessible, Affordable Internet for All Act, the LIFT America Act, and the American Jobs Plan address digital redlining?

Mr. LEWIS. I think if the bill includes options for those subsidies, or those—that funding to go to local governments or local co-ops, it can certainly also help with redlining. As Ms. Ochillo said, those communities usually are better at making sure that everyone is served, because they live in those communities, or those government officials live in those communities. And so they have an incentive to make sure that whatever is built is—

Mr. DOYLE. Ms. Chaney, do you want to add anything to that?

Ms. CHANEY. Sorry. No, I think the other witnesses answered it appropriately, yes.

Mr. DOYLE. OK, well, let me go back to Mr. Lewis, then.

In your testimony you talked about the need for a permanent broadband benefit, and the need for additional measures to increase affordability, long term. Do you think that we can close the digital divide over the long term if we—without addressing those issues?

Mr. LEWIS. I am concerned that we won't. The cost of broadband right now, just from what we see from the numbers of how many options that people have, is really driven by monopoly or duopoly prices. I think that doing the work to study the prices and the cost of broadband long term, so that we can really determine the impact of the market, and if that cost is actually affordable, or if it is simply a cost that is going up and up based on the choices of industries, is critically important.

We have already seen in the last 3 years a 20 percent rise in broadband costs, according to FCC data. That is far ahead of inflation. So these prices need to be studied.

Mr. DOYLE. How about you, Ms. Chaney? Do you have anything you want to add to that?

Ms. CHANEY. So, I mean, we absolutely think that a broadband benefit is necessary. We also are—you know, we also want to see competition addressed. We also want to see prices come down.

But we know that, for the vast majority of those who need it most, there will always be some amount of help that they need. And we found this in other areas where we have a benefit that—a need that has to be addressed that is fundamental, and we believe broadband is as fundamental as running water, electricity, all kinds of basic services.

And so, for us, we know that there are communities, in particular communities of color, who will need assistance. And so, for us, there has to be some kind of benefit that is made available for them. And we think there have to be public-private partnerships that make it happen.

Mr. DOYLE. Well, thank you. The Chair will yield 24 seconds back as an example and now recognize Mr. Latta, the ranking member of the subcommittee, for 5 minutes to ask questions

Mr. LATTI. Thank you, Mr. Chairman.

Mr. Ford, we hear from our colleagues across the aisle and in the administration that Americans pay too much for the internet, and that high prices remain the top obstacle to broadband adoption.

Similarly, the Open Technology Institute's Cost of Connectivity Report tells us there is a broadband affordability crisis in the U.S. The facts, however, seem to be at odds with this claim.

Based on data from the FCC's annual Urban Rate Survey, there was an average decline of 36 percent in broadband prices between 2015 and 2020. This price decline coincides with steadily increasing broadband subscribership over the past 5 years, according to the FCC's 2020 Communications Marketplace Report.

Additionally, a study done by the Brookings Institute finds the gap in broadband adoption rates between the high-income and low-income Americans is narrowing, which shows that the adoption gap is becoming less based on income disparity.

Mr. Ford, is it true that there is a broadband affordability crisis in the U.S.?

And what are your thoughts about the OTI study?

Dr. FORD. I mean, I think certainly for some people there will always be an affordability problem in low-income groups, primarily, who struggle just to survive and eat. That is an issue that you may need to address. And some of the other witnesses have spoken to that. There are many plans today that are very low-priced, 10 to 20 dollars. Comcast is at about \$10 for a very capable broadband circuit for qualified low-income, veterans, and other people that qualify for the program. So that is a very low price.

I mean, if broadband is an essential service and someone is not willing to pay \$10 for that, then I think we have to question whether or not it is an essential service for that person. I think the essentiality and necessity varies by person. We can't tell people what their preferences are about broadband. Some people just might not want it.

I think that prices—my analysis—I have done an extensive analysis of the FCC data on prices, and prices have declined as quality has increased. I think that is hard to dispute, at least if you want to look at the data properly.

As for the OTI report, it had several pieces, components to it. One was that municipal networks charge lower prices than private providers. I have a detailed analysis of that study. It was incorrect in the way it set up the problem. It was incorrect in the way it treated some data. And once you correct the problems, you find there is really no difference between municipal systems and private systems. In fact, if anything, municipal systems charge slightly more. I don't believe that is probably the case, but that is what their data actually show.

The case which I mentioned in my statement, for example, shows that the—that they had a \$10 price, and really it is more about \$50. And once you correct that error, you solve the problem.

Internationally—and I noticed that was being floated around yesterday, statistics from that report—the report itself concludes on page 38 that, once you standardized the prices for cost and speed, that U.S. providers, on average, advertised similar prices for similar speeds as European providers. So the study itself denies what statistics were being thrown around yesterday.

Mr. LATTA. With my last minute I am going to try to get a couple of other questions in here real quick.

You know, what is your response for the decline in broadband prices, and also the increases in subscribership in low-income households?

Dr. FORD. Well, like most goods, over time they tend to decline, as efficiencies and productivity enhancements arise. And we have—people have options as to what they are buying. You couldn't even imagine buying a 200-megabit circuit, you know, 5 years ago. Now you can get one as a base-level product for \$40. That is a material decline in quality-adjusted prices, for sure, if not prices alone.

The differences in consumption across racial groups is—I can't explain it. I mean, it is persistent. It is shrinking. We saw significant shrinks—a shrink in the gap last year, for Blacks in particular. And that is something that just needs to be evaluated.

Those differences persist, even with accounting for income and age and education and things like that. So it is there. I am not sure why it is there, and it is probably worth investigation.

Mr. DOYLE. The gentleman's time has expired.

Mr. LATTA. Well, thank you, Mr. Chairman. My time has expired, and I also have some documents that I will ask unanimous consent to submit for the record. But thank you very much, and my time has expired.

Mr. DOYLE. Without objection, so ordered.

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

Mr. DOYLE. The Chair now recognizes Mr. Pallone, the full committee chair, for 5 minutes to ask questions.

Mr. PALLONE. Thank you, Chairman Doyle. I am going to try to get in three questions to each of three witnesses, so—you know, if we can have a quick response.

But I did want to say that we know that studies have documented the racial—digital divide in the country. And during the pandemic, this often prevented kids from attending school online or taking advantage of telehealth or making a vaccine appointment. And I know it is not only the result of digital redlining but also the cost of service that is too much for many households to pay. And I just think we have got to address this.

So, Mr. Lewis, is there a risk that, if we don't act to resolve these inequalities, we leave households and communities behind? That would be my first question.

Mr. LEWIS. Absolutely, Congressman. Our policies can help make up for inequities in our society, and—or they can create inequities. In the past, communications laws have fought redlining, for example, through franchise agreements or other obligations at the FCC, franchise agreements at the local level for cable, to make sure that telecommunications was built out to everyone. Those were begun to be removed in the early 2000s, and we never saw any replacement for them in the broadband space. So policymaking can make up for these inequities or lack of investment into specific communities.

Mr. PALLONE. Thank you.

Ms. Chaney, we mentioned that we have this Emergency Broadband Benefit, but it will run out eventually. And we have heard a number of ideas today about ways to make broadband more affordable. But—and during the pandemic, many providers announced offerings and plans to help ease the divide. There were about 600 companies signed up to offer now the Emergency Broadband Benefit. But I just think more needs to be done.

So I want to ask, in your opinion, what else can Congress do to ensure that we are connected, especially when this Emergency Broadband Benefit runs out?

Ms. CHANEY. Oh, thank you, Congressman. There's lots that we can do.

I mean, first of all, we do believe that there should be, like, a permanent or a long-term broadband benefit subsidy to ensure that the extreme poor will be able to participate in a 21st century economy. And there are ways that this can be funded, right, through annual congressional appropriations. But there can also be some kind of fund that—a digital equity fund that is created by a combination of appropriations and spectrum auction revenues. And

there can be other types of public-private partnerships that are created to fund this and make sure that everyone pays in.

You know, our goal isn't to sort of tell you exactly how you have to do it. Ours is outcome determinative. We want to make sure that, at the end of this, we have not left people behind.

We had a briefing about 2 weeks ago that I think some of your staff attended, where we talked about infrastructure priorities for communities of color. And we had people representing Asian-American communities and Latinx and African-American. Every single group listed broadband at the top of their list, and affordability, and addressing digital readiness, as well as language inclusion at the top. And that is because we know that, across all of our indicia of equity, making sure that people have broadband is key and fundamental.

Mr. PALLONE. Well, thank you. And then my last question is of Ms. Ochillo.

We know that local government is very invested in making sure that communities and the constituents have equal access and opportunity to use high-speed broadband. So why do you think that digital inclusion efforts have been so successful at the local level?

And what can we do in Congress to support those efforts, if you will?

Ms. OCHILLO. Well, they have been supportive—they have been successful at the local level because they don't have another choice. I think that, you know, local officials are some of the scrappiest people that I have ever met. They are problem solvers. They run into the grocery store and to schools, and they run into their constituents. They have a different type of accountability and urgency in solving a problem. So they have to gather whatever resources they have available and whatever partnerships they can to actually make something happen.

At the Federal level, we could do a lot more information sharing, and centralizing that. At the FCC we could ask questions about improving data to actually know who is disconnected, and are we sending the money out the door to the right places, because over and over again money keeps going to the same people who keep cherry-picking who they get to serve. And that is not working.

So we can talk in platitudes about everything is going well, but the truth is that when you go into these neighborhoods and you meet them at their town hall meetings, it is not going well, and they need support.

Mr. PALLONE. Well, thank you so much. I appreciate the fact that all of you are so practical about what needs to be done, because that is really the key.

Thank you, Mr. Chairman. I yield back.

Mr. DOYLE. The gentleman yields back. The Chair now recognizes Mrs. McMorris Rodgers, the full committee ranking member, for 5 minutes.

Mrs. RODGERS. Thank you, Mr. Chairman. And thank you, everyone, for joining us today for this important discussion.

Mr. Ford, I wanted just to go back to the Emergency Broadband Benefit again. That was a benefit that Republicans and Democrats agreed to put into place in response to the challenges that Americans were facing as a result of COVID-19 and the pandemic.

You know, one idea that we are considering today is making that benefit permanent and appropriating 6 billion over the next 5 years. Several companies currently voluntarily offer low-income broadband programs such as Internet Essentials or Connect to Compete for rates around \$10 per month. And that is not to mention such programs as lift zones, which connects 16 community centers to Wi-Fi in the Spokane area alone.

And despite these offerings, there is still too many Americans who do not adopt broadband. So, Dr. Ford, I just wanted to ask, what is the main obstacle, in your opinion, to adoption?

Dr. FORD. Well, I mean, one of the main obstacles, of course, is not having access, and we are attempting to address that. I think the mechanisms in place—are in place to do that. More funding may be necessary in certain areas. The evidence that we have on that is a bit cloudy. But the number-one reason people say they don't have broadband is they don't want it.

I think that you also have situations where the government has funded anchor institutions and various places where people can get free access, and that is a substitute for home access.

Mrs. RODGERS. What about price? Can you just—

Dr. FORD. Look, the demand curve sloped downward. So if you lower price, you will increase quantity. The question is by how much.

I mean, if you view this narrowly as a price issue, you are going to be disappointed when you come back a couple of years from now and you see that there is still people who aren't adopting broadband and that this price solution didn't solve the problem.

Mrs. RODGERS. Have you—so what are your thoughts on appropriating six billion, making this program permanent, the—

Dr. FORD. I mentioned some things—OK, sorry.

Mrs. RODGERS. So what kind of impact—

Dr. FORD. I mentioned some things—

Mrs. RODGERS [continuing]. Do you think it would have?

Dr. FORD. I think it will have an impact somewhat like Lifeline program has. It will have 25, 30 percent of the people participating. You will have some increase in adoption, and you will be disappointed—

Mrs. RODGERS. OK, thank you.

Dr. FORD [continuing]. That it didn't cure the whole problem.

Mrs. RODGERS. Thank you.

In 2015 the FCC expressly declined to impose rate regulation on broadband providers, saying that doing so was not necessary and would undermine investment in broadband networks. Former FCC Chairman Tom Wheeler said, "Let me be clear. The FCC will not impose utility-style regulation" and specified, "That means no regulation, no filing of tariffs, and no network unbundling."

Mr. Lewis, according to the most recent FCC Communications Marketplace Report, prices for the most popular broadband plans have fallen by 20 percent. Since former Chairman Wheeler made that decision not to rate-regulate in 2015, at the same time those plans now average 16 percent faster speed. Do you think former Chairman Wheeler was wrong to refrain from imposing rate regulation on broadband providers?

Dr. FORD. No—

Mr. LEWIS. Congresswoman—

Dr. FORD. I think that would be very bad.

Mrs. RODGERS. Oh, I—actually, I was asking Mr. Lewis this time.

Dr. FORD. Oh, I am sorry.

Mrs. RODGERS. Then I will let you go, Mr. Ford.

Mr. LEWIS. Thank you, Congresswoman. I was grateful that Chairman Wheeler, you know, enacted strong net neutrality rules. And I think, as a compromise, he did not enact any sort of rate regulation. But I don't believe that means that the FCC should not be a cop on the beat when looking at the broadband marketplace.

And right now, it doesn't have the authority to actually look at the broadband marketplace and see what people are actually paying. So, you know, we have had, traditionally in this country, options for telecom utilities, where either we have a monopoly system or we have competition. I am trying to get us towards competition. But if we have monopoly pricing or few choices for consumers in localities like we are seeing, then that can lead to prices continuing to go up well ahead of inflation.

Mrs. RODGERS. Mr. Ford, I will give you the final 20 seconds, if you want to—

Dr. FORD. Yes, rate regulation would not be helpful. I mean, you are—rate regulation is going to affect the 90. What you are trying to do is address affordability for certain sorts of people. That is not going to solve that problem, and that is going to reduce deployment and reduce upgrades in networks.

Mrs. RODGERS. OK, thank you, everyone. I yield back.

Mr. DOYLE. The gentlelady yields back. The Chair now recognizes the gentleman from California, Mr. McNerney, for 5 minutes.

Mr. MCNERNEY. Well, thank you, Chairman Doyle, and I thank the witnesses for your excellent testimony.

My congressional district includes cities and communities that have been economically depressed. A few years ago, as a part of its economic revitalization plan, the City of Stockton, California, set out to build an open access fiber network. The project was put on hold because financing wasn't available. But I would like to discuss the benefits a project like this would have for communities like Stockton.

Mr. Lewis, how do open access fiber networks impact competition in the marketplace?

Mr. LEWIS. So open access networks, Congressman, can bring in competition by lowering the barriers to building the core infrastructure of the network, which is the most expensive part of building out a broadband network, by getting the partnership of local government or using subsidies to do it.

And then, when those networks are open, any provider can use that infrastructure to offer service to the folks that the network reaches. So this allows multiple providers to compete on price, and hopefully see lower prices.

Mr. MCNERNEY. Well, thank you. What is the impact of open access by the networks on broadband service for consumers?

Mr. LEWIS. Well, my hope is that it would start with lower prices, but it can also, hopefully, lead to competition in other areas of the service. So in responsiveness and customer service. Once a

provider doesn't have a monopoly on a territory, they really have to compete for the attention and the loyalty of the consumers there.

Mr. MCNERNEY. Well, thank you.

Ms. Ochillo, thank you for your advocacy and work on these issues. How can open access fiber networks make communities more resilient, or do you have any examples?

Ms. OCHILLO. Well, I think it is always important. I want to add one more thing to what Chris just mentioned. One of the great things about open access networks is that, when the city owns the—or the area owns the infrastructure, you get to invest it—reinvest locally. So that money actually stays in that local economy, which is something where the community actually has equity in that project. So there is a natural incentive to actually always make it something that is better.

And when you are talking about—I don't want to get into specifics about what happened in Stockton, but I think one of the things that is so ambitious is, when we are looking at communities where you have large groups of either low-income people, or also communities where it has suffered from years and decades of disinvestment, it is so important that the city actually intervene and actually provide affordable service that is actually equivalent to the service that other people would get.

So not just coming in for—it is advertised at 25/3, and it is less than, but actual competitive service that is something that might be even comparable to 100 symmetrical or even other speeds that other people would pay for with a municipal or an open access network.

Mr. MCNERNEY. Thank you. Well, Ms. Ochillo, in your written testimony you state that digital equity and inclusion programs cannot be an afterthought.

Ms. OCHILLO. Yes.

Mr. MCNERNEY. I completely agree, and that is why I introduced the Digital Equity Act, which would create two Federal programs to address gaps in broadband adoption and digital literacy and skills. Can you tell us why digital equity and inclusion programs are so important, and why they are something we should be prioritizing?

Ms. OCHILLO. They are an imperative. I think that, when we look back to even, like, the National Broadband Plan 10 years ago, the FCC actually identified saying, look, broadband access and adoption, they are both problems. And then, after that, it was singularly focused on only solving the broadband deployment problem.

So here we are, years later, when we actually know, not just because of COVID, but we actually know that there are large amounts of people who can get the infrastructure in their neighborhood or even close to their front door, and we can't get it across the threshold. So that means that we need to not only address affordability, we also need to think about do they have the digital literacy, do they have the device in their home, do they have access to tech support?

And also, I want to point out this isn't just about the economics of making sure that that person is trained. It is making sure that they actually have a digitally literate household, because that has

a generational impact on the opportunities that everyone that they touch has.

Mr. MCNERNEY. Thank you. Thank you for that answer.

Ms. Chaney, if we don't rise to the moment and fully address gaps in broadband adoption and access, what are the consequences for marginalized communities that already have been left behind?

Ms. CHANEY. I mean, the fact of the matter is I don't know of any community who is just saying that they don't want to have—that is not—broadband. That is not the experience that we had at the National Urban League. Our experience is that people want to have access but they cannot afford it, or there is such a barrier because they haven't been able to afford it and they don't know how to use it, that they are almost afraid to enter into that space.

But we know that, through your program as well as through Federal efforts that could focus on having digital equity inclusion, including the program at the Commerce Department, we would be able to address those gaps and make sure that we have digital navigators who are also—like the National Urban League, like perhaps some of the other witness organizations here, to try to close the gap and make sure people know how they can get online, how they can utilize, and also making sure that they are able to afford it. We think it is critical. Without it, you simply—you can't compete in the current market.

And on healthcare post-pandemic, it is exponential, the amount of telehealth that is being used. So frankly, having access to broadband is now not only a matter of quality of life, it is a matter of life and death.

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

Mr. GUTHRIE. Thank you, Mr. Chair. Thanks for—everybody, Ranking Member Latta, for having this hearing, this is—the witnesses for being here. This is so important. The digital divide is real, and it must be addressed, and it must be addressed with equitable solutions.

And I can tell you, I know I have a lot of urban and—more suburban areas in my district, but also very, very rural areas. And for areas to grow, they are going to have to have access to broadband, access to this resource, just to grow businesses, not to mention the fact that we are now having people get their health through telecommunicating, and also through the education with some of our schools not being fully open here. So it is really important to do.

And some of you, if you have been here long enough to remember—most of us haven't, but Ernie Fletcher, who was the Governor of Kentucky in the early 2000s, was a member of this committee. And he came in, and we did a big effort fighting over tobacco settlement dollars and dedicated a lot of efforts to trying to close the digital divide. There is a group called Kentucky Wired that spent \$1.5 billion, and they really focused on the middle mile, not getting the last mile to our—to the homes. But 1.5 billion had been spent, and still not complete.

I will tell you, there are conversations we have in this subcommittee, or as I meet with different people that have interests before the subcommittee, on just getting maps. I mean, as much money as we spent, as much—as long as we have been doing this,

we are still focusing on maps. So I kind of direct this to Dr. Ford, and just—we all want people to have access to the broadband.

And the question is, the comparison between doing it through the public sector and incentivizing through—obviously, it is going to take public dollars to get where the market doesn't work, and getting it to rural areas. But incentivizing the private sector to do—would you kind of talk about the difference in a government approach versus incentivizing a private-sector approach, Dr. Ford?

Dr. FORD. There are a couple of ways that you can address the problem of revenue not being adequate to cover costs. One is to try to get the cost down. And there is some efforts to do that with trying to clean up some barriers to entry that exist in local government with respect to pole attachment fees, or access requirements, and rights of way, and things of that nature.

And there is also just the subsidy approach, which is to pay the money to do it, which is pretty much what we do today.

I think that it is apparent, from an economic perspective, that paying a network that already exists to extend its reach at the margin is much more efficient than to overbill the entire network in order to reach the 5 or 10 percent of the people that don't have it. And a lot of times, with government programs, municipal broadband, they overbuild the entire market, giving people something they already had, for the most part, just to get to the top 10 percent that don't have it. And that is an extremely inefficient and costly way to go about doing it.

Mr. GUTHRIE. So what are your thoughts—and if anybody else wants to weigh in—and I am very interested on, you know, we are really focused on fixed fiber to home. And when we have mobile communications that are moving forward, particularly with 5G networks—and there is some question about the superiority of one over the other, or if they are equal. And so can you use 5G mobile networks to get broadband where it needs to be, or does it have to be fixed fiber to home?

And if the 5G does work, we are at a point where we were—felt like we were falling behind, or could fall behind—I don't think we are, but we certainly could fall behind China and other areas in 5G, and we need to focus on it. And we are spending a lot of money. We are spending a lot of money getting—it is not a lack of the American people, taxpayers, putting resources to broadband, if you just look at the last few plans that have been passed.

So the question—I will start with Dr. Ford, but anybody else that wants to add in: Would 5G, and really investing in 5G and making mobile networks a better way to go than fixed fiber to home, or an equal way to go?

Dr. FORD. I worry a little bit that 10 years from now we are going to be kicking ourselves for deploying all this fiber when half the people use mobile networks exclusively.

I think mobility is a superior product, in the sense that it is mobile. It may not be superior in its capacity at the moment, but 5G offers the opportunity for—

Mr. GUTHRIE. I have about 30 seconds left, if one of the other witnesses wants to add in. If not, I will go back.

Yes, Mr. Lewis, I know—I will get the gavel in 20 seconds, so—

Mr. LEWIS. Congressman, it is important to remember that 5G and fiber are—it is not a choice between one or the other. You can't have quality mobile networks, including 5G, without quality infrastructure for those 5G towers to connect to.

Mr. GUTHRIE. Oh, absolutely.

Mr. LEWIS. And right now they have to connect almost every couple of miles, or mile-and-a-half is the best——

Mr. GUTHRIE. We are talking fiber to home, though. That is the difference of fiber to home versus——

Mr. DOYLE. The gentleman's time has expired.

Mr. GUTHRIE. I am sorry, thanks. Thank you, I yield back.

Mr. DOYLE. I thank the gentleman. The Chair now recognizes the gentlewoman from New York, Ms. Clarke, for 5 minutes.

Ms. CLARKE. Chairman Doyle and Ranking Member Latta, I want to thank you for convening today's hearing. The topic of broadband equity is an urgent concern, and I would also like to thank our witnesses for virtually joining the committee and sharing your testimonies.

Broadband is an essential utility, and consumers, regardless of income, race, ethnicity, color, or national origin, deserve affordable, reliable broadband.

Communities of color are more likely to have slower and less reliable internet service. This disparity creates significant barriers to accessing employment opportunities, educational opportunities, healthcare resources, and diminishes opportunities for civic engagement. The compounded issues of availability and affordability are having a disproportionate impact on communities that have been victims of housing redlining from previous generations, and this can also be seen in our digital world.

As the Electronic Frontier Foundation outlined in their recent letter to Chairman Doyle and Ranking Member Latta, "digital redlining is the formation of a first- and second-class broadband infrastructure where wealthy communities easily access 21st century opportunities with low-cost, fast internet while everyone else is left behind."

Mr. Chairman, I would like to enter the letter into the record. Congress must take——

Mr. DOYLE. So ordered.

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

Ms. CLARKE. Congress must take urgent action to prohibit the discriminatory deployment of broadband by internet service providers based on income level of an area, the predominant race or ethnicity composition of an area, or other focus. And I will continue to prioritize the critical issue of digital redlining and will commit to working with my colleagues to draft legislation to address it.

You know, the COVID-19 pandemic has only underscored the fact, with rapid adoption of the virtual space, that high-speed, affordable broadband is a critical resource. It is a necessity, and not a luxury, and it is our job, as Congress, to remove the barriers to equitable access.

So, Mr. Lewis, I would like to ask you. Your testimony outlines the many ways in which broadband has proven to be an essential utility, like water and electricity. We are proud of the inclusion of the internet as a utility in the CARES Act and the FCC's recently-

launched EBB program. However, these are temporary solutions as the American people continue to recover from the coronavirus pandemic. How can the Federal Government establish a long-term policy for ensuring equity access to affordable and high-speed broadband?

Mr. LEWIS. Well, we need to learn from the past, as we did with telecommunications for the phone. You need to have a long-term benefit for low-income consumers to have supports to be able to afford broadband. Hopefully, that will meet the price that is coming from the industry. But we also need to study those prices to make sure that those prices are competitive and not monopoly prices.

Ms. CLARKE. Very well. Ms. Ochillo, in your testimony you discuss the economic disadvantages impacting underserved and unserved communities, both urban and rural. Can you please elaborate on this and the broader negative impact that inequitable broadband access has on our national economy?

Ms. OCHILLO. Well, I think that, in general, there is this idea that when people say “digital redlining” they automatically assume you are talking about an urban area. And we actually talk to municipalities on a weekly basis. We have done so since April of 2020. We have talked to a new municipality. And what we find out is that that comes up in midsized and rural cities just as often, if not more so.

What we know is that the places that have widespread access, they are the places that are able to attract innovation. They can maintain their population. They could actually allow residents to age in place. They have so many more benefits and advantages than the places where broadband is either unreliable or simply unaffordable.

And it would actually help if the Federal Government, in terms of not only information sharing, thinking about all of the agencies that are getting involved in broadband, whether it is the NTIA, USDA, and all sorts of agencies, there should be some sort of centralized information sharing and, actually, building off of the things that we have learned from COVID, because we know that people have, essentially, had to come up with all sorts of creative solutions. And it would actually help us to actually use those things to inform whatever is the strategy moving forward.

Ms. CLARKE. Well, thank you very much.

Mr. Chairman, I have got 13 seconds, and I am going to yield them back.

Mr. DOYLE. I thank the gentlelady for that. The Chair now recognizes my good friend from Florida and fellow Pittsburgh Pirate fan, Mr. Bilirakis.

You are recognized for 5 minutes.

[Pause.]

Mr. DOYLE. Gus, you need to unmute.

Mr. BILIRAKIS. Thank you very much, Mr. Chairman. I apologize. I had a hard time finding the mute button. My vision is not the best.

OK, well, I have a couple of questions, and I appreciate you all being here today and testifying.

Mr. Ford, I have heard proposals to change the minimum broadband speed requirements from 25-down, 3-up to a symmet-

rical or symmetric service of upwards of 100. Under the current standard, my district is largely served, except for a portion that I will address shortly. But under 100/100, there would actually be large unserved areas around the Tampa Bay area, the 18th largest metropolitan area in the country.

Are symmetrical speeds consistent with how consumers have used broadband service?

Is this a realistic expected future consumer usage rate?

And that question is for Mr. Ford, please.

Dr. FORD. No, that is not the way broadband is consumed. And I don't think the 100/100 proposal has anything to do with trying to match the way people consume broadband. It is motivated by other reasons.

Mr. BILIRAKIS. What is it motivated for, can you expand on that a little bit?

Dr. FORD. It is basically motivated because that is what fiber networks are generally designed to do, although they don't have to. They often do because they have so much excess bandwidth, so they offer symmetric circuits. So if you require a—if you have a broadband definition of symmetry, particularly at 100/100 or more a gig, symmetric gig, which some people have proposed, then you are basically saying the only broadband is fiber broadband.

Mr. BILIRAKIS. OK, thank you. Another question for Mr. Ford.

The pandemic has demonstrated how important the internet is for seniors and our disabled residents to stay in touch with loved ones and take advantage of telehealth services. But these groups in rural areas may not have access to broadband. In some cases, they don't.

Additionally, I represent the small community of Lacoochee, whose residents have been begging for internet access for years, especially after local children had to access internet on buses deployed around East Pasco, East Pasco County, to connect with teachers for distance learning, even in our great country.

Mr. Ford, how does it help our seniors, our kids, and the disabled community in rural areas catch up on internet connectivity by increasing minimum standards?

If you can, elaborate on that. I know you touched on it. That would be good. It seems to me that the people who were next in line under our current coverage standards will now be pushed to the back of the line yet again. Is that true, what do you think?

Dr. FORD. I mean, there is certainly the risk of that. If you—if the funding of broadband in underserved areas is linked directly to a symmetric 100-megabit circuit, then you are going to have a higher-cost network and they are going to be less likely to get it. So you could actually see it backfire against the present goal of expanding availability and—by giving a service that, really, nobody would use. If you gave them a 100-megabit circuit, they are only going to use 5 percent of that, probably, at max. So it pushes you into a technological solution that may be more expensive than other solutions that would solve your problem.

Mr. BILIRAKIS. Well, thank you very much.

In closing, Mr. Chairman, let us not forget the work that the providers did for our communities during the height of this pandemic, keeping—and they are still doing it—keeping people connected,

even if constituents found themselves without the ability to pay for services. They have gone above and beyond, as partners, as we transition to the remote world. And their important concerns should continue to be valued today, and I know they are.

I want to put a plug in, because I have a couple of seconds, for Withlacoochee Electric. It is a nonprofit, and Withlacoochee has transformed this wonderful town of Lacoochee. And Lacoochee is famous for many famous athletes, and what a difference it has made when a little love is spread into a community. But we have got to get broadband for those good people.

Thank you very much, Mr. Chairman. I yield back, and beat 'em, Bucs.

Mr. DOYLE. Thank you, Gus. The Chair now recognizes Mr. McEachin for 5 minutes.

Mr. MCEACHIN. Thank you, Mr. Chairman. And thank you also for convening today's hearing. And to our witnesses, thank you for joining us.

Reliable, affordable, high-speed broadband services in today's economy and the economy of the future is really the fourth utility. Not unlike water, gas, and electricity, communities who do not have fast, reliable, and affordable internet services will be left behind, and the pandemic has only underscored that fact.

Ms. Ochillo, thank you for being here today. In your testimony you make the point that sound broadband policy starts with better maps. I could not agree more. Making sure we are allocating resources based on accurate maps has been something I have been passionate about since I was appointed to this subcommittee.

Well, I was heartened that we passed legislation and funding last Congress that intended to fix some of the issues we have seen in the past. However, I worry that some of these issues we saw previously will persist if not addressed now.

In your opinion, what can we do to make sure our maps accurately reflect where providers serve, and what lessons have we learned from previous auctions?

Ms. OCHILLO. So I want to say, first, thank you for the question. I want to make sure that I am really brief.

Number one, we couldn't agree more. We are working on studying maps across the United States. And what we learned when we looked at every single—all 50 States and territories—we learned there was a contradiction in every single one of them between FCC data and the information that was collected either from their State or local officials.

What we know is that, when we start out with the poison of bad data, it ends up having this really insidious effect that touches everything. And so I want to give you an example that actually exists in Virginia that we found in our research. We looked up Virginia back in—earlier in March 2021. Basically, they had—it was House bill, I think, 1800, and it essentially said—it was a legislative proposal that prohibits broadband providers from having to submit any additional information that was required—than what was required by the FCC.

And even after that, the agency that was managing the data would only be able to publish anonymized information.

The problem is that, even when the FCC's data is bad data, as the poisonous pot, when a State comes in and says, "Hey, can we make that data better," it is now curbing efforts at the State. And then, when you get to the local level, you find out, if you were marked as served, unserved, or underserved, all of those things, that stain stays with you. It can either close off opportunities for funding, it might change what you are eligible for.

And so, when we are sending billions of dollars out the door and, you know, even thinking about the auction, it is like we are sending billions of dollars out the door and we can't even identify whether unserved or underserved is the accurate marker for the places that are going to be applying for funding.

So we think it is a problem that needs to be addressed immediately.

Mr. MCEACHIN. Thank you for that.

Mr. Lewis, it is good to see you again, my friend. What can we do to make sure that low-income communities and underserved communities actually get the broadband services that they need?

Mr. LEWIS. Thank you, Congressman. And it is good to see you, as well.

Number one, we need to have a long-term benefit for low-income consumers.

Number two, we need to do everything we can to promote competition in the marketplace.

And number three, we need to remember that the cost to consumers is not just the cost of the service. So consumers are also paying a tremendous amount of money in fees on their broadband lines right now, hidden fees, below-the-line fees. They are paying for rentals of modems and other devices. And then there is the cost of the actual device that they use, the computer or the laptop that, you know, when you have a family of four—these days, everyone is online at the same time—requires multiple devices.

Mr. MCEACHIN. Well, thank you for that. You know, when it comes to those hidden fees and whatnot, do you have a suggestion on how we should deal with those?

Mr. LEWIS. I think it starts with transparency. You know, I think Ms. Eshoo and others have worked for years to mandate a level of transparency around below-the-line fees, and we support that. But we need to have truth in billing and accuracy in the fees that are charged and why they are being charged, so that people get the actual prices, not just an advertised price with fees added on to it later on.

Mr. MCEACHIN. Thank you, sir.

Mr. Chairman, I have 24 seconds left, and I will say, go Orioles. I yield back.

Mr. DOYLE. I thank the gentleman very much. The Chair now recognizes my friend from the great State of Ohio.

Mr. Johnson, you are recognized for 5 minutes.

Mr. JOHNSON. Well, thank you, Mr. Chairman. You know, the lack of broadband in rural America is not a new problem. It is something that we have talked about for decades. And while I acknowledge that affordability may play a factor in the availability of broadband for some in urban and rural locations, the lack of infrastructure and accessibility in rural America in many places that

I represent means that broadband simply is not an option, period. You can't pay for a service that doesn't exist, even if you have got the money.

However, I am appreciative of the efforts of many ISPs to work with consumers and provide low-cost options to increase broadband affordability in areas where broadband is available, where cost is the true barrier to adoption. Particularly during the COVID pandemic, many providers pledged, as we all know, to connect as many Americans as possible, and did so without a government mandate.

So, Dr. Ford, we all want to close the urban/rural digital divide while fostering a healthy environment for competition and innovation. However, there are efforts by the Biden administration to have the Federal Government regulate consumer broadband prices. We are also seeing various initiatives at the State level to do this, as well. So do you think these rate regulation efforts will effectively close the digital divide in America?

Dr. FORD. It certainly won't close the urban/rural divide, which you mentioned. It won't close it, it will—there is going to be two effects. One is people may buy more at a lower price, and the other is suppliers may supply less because of lower price. And so these two things are going to work against each other.

Mr. JOHNSON. What do you think is a better alternative to Federal price regulating?

Dr. FORD. Well, I think you need to focus on the problem that you are trying to solve. And in your case you are talking about getting broadband deployed where it is not. That is not a rate regulation matter. That is a reduce-the-cost-of-deployment matter. That is a subsidize-the-spread-between-costs-and-revenues matter, which is how you are going to get that problem solved.

Mr. JOHNSON. OK.

Dr. FORD. It is not this other stuff. Net neutrality isn't needed for that, or any other regulations needed for that.

Mr. JOHNSON. Got it.

Dr. FORD. You just subsidize the deployment.

Mr. JOHNSON. Yes. Let me go to another question. We know that U.S. broadband innovation has flourished under a light-touch regulatory framework. In the immediate period following the 2015 title 2 open internet order, which threatened companies with burdensome public utility rules, including rate regulation, we saw a significant decline in broadband investment. Yet, after our return to the light-touch regulatory framework under Chairman Pai's leadership at the FCC, U.S. broadband companies increased their investment. Now they are investing more than three times as much in broadband infrastructure per household as their tightly regulated European counterparts.

So do you think, Dr. Ford, that rate regulation is necessary to keep broadband prices low?

Dr. FORD. Well, I think rate regulation can make price whatever they want to, but you have to suffer the consequences of it.

I think that, when you have got the vast majority of Americans buying broadband, it is kind of hard to make the argument that the price is too high, and you have got affordability plans by almost every carrier. These things are extremely expensive to build, these

networks. And, as you mentioned, we invest far more than Europeans do. And that is a reflection of cost——

Mr. JOHNSON. Yes.

Dr. FORD [continuing]. Of providing the service. So those costs have to be recovered if you want network.

Mr. JOHNSON. Yes. You know, some of my Democrat colleagues are proposing to increase the definition of broadband to 100 megabits, 100-megabit symmetrical service upload/download, drastically increasing the areas considered unserved and eligible for Federal funding. I am concerned that this will mean funding will most likely be used to upgrade places that already have broadband, while truly unserved rural customers continue to wait at the back of the line.

It also mandates a certain technology that can provide those symmetrical speeds.

So, Dr. Ford, should these unserved areas be forced to wait until fiber technology can be built 6 to 10 years from now, or should we fund technologies that can provide service as soon as possible to unserved areas?

Dr. FORD. They need to have—if broadband is really important, they need to get broadband as soon as possible at a speed that satisfies the need. And 25/3 satisfies almost any socially valuable need.

Mr. JOHNSON. Yes, I—well, I have a comment on that, but my time has expired. And out of respect for my chairman, I will forego that.

Mr. Chairman, I yield back.

Mr. DOYLE. I thank the gentleman very much. Let's see.

Next, Mr. O'Halleran, you are recognized for 5 minutes.

Mr. O'HALLERAN. Thank you, Mr. Chairman, Ranking Member, for this meeting today. I want to thank the panel for a great discussion.

Broadband access is a problem in both Democratic and Republican districts, and the— [audio malfunction]. The fact is that access to broadband in America's rural communities is downright terrible. It is not even close to being where it needs to be.

In Arizona, only 66 percent of the population has access to broadband at the FCC's minimum speed standard. And that is not competitive with the rest of America. In Apache County, the download is 2.28, and this is a Google speed test. And the upload is .80. The Navajo County, 6.71 download, 1.83 upload. In Greenwood County, 9.68 download and 2.75 upload. And that is where they have it. And again, everybody on this panel knows that the—where it is accessible is not even near to be able to be afforded or get into your home in these areas, the census areas. This is especially true in Tribal communities, where broadband deployment lags behind in nine Tribal areas.

High-speed internet access is required to participate in our 21st century economy, as well to ensure that our children receive a high-quality education, and not to mention telemedicine and other health areas. Businesses need high-speed broadband to compete. Workers need it to do their jobs. Children need it to do their homework. The lack of broadband results in poor health and educational outcomes for those who live in rural and Tribal communities.

We must make a real investment to bring every community online. Our top priority must be to reach every home in America. Everyone must be able to get online, regardless of where they live. This will require flexibility in how we expand access to every neighborhood.

What works in cities might not work in most remote areas. We can't have a system where the best technology is only available in major cities and suburbs. Rural America needs to catch up. Our children in those areas need to be able to compete in the worldwide economy, and so do the businesses in those areas.

My first question is to Ms. Ochillo.

I am concerned that, if we all fall short, or if we fall short of our goal in connecting every household with broadband, the communities that will be left out will be the rural and tribal areas of my district and other districts like it. How can Congress work with local governments in rural areas to make sure 100 percent of households get online?

Ms. OCHILLO. Well, I think it is important—thank you for the question, Congressman. I think one thing that is important is to actually make sure that we are tapping in to the actual data collection and information that has been collected, especially in the last year because of COVID.

Essentially, municipalities have had to set up their own information tracking. So they are not only finding out about access, they are also finding out about adoption. And we need to make sure that we are able to send that information back up, because usually we are relying on FCC information and trickling it down. We need to make sure that that is actually stored somewhere, and usable.

When we also think about things that are happening on the ground, there are really cool partnerships that are happening in places like Mesa and other places that, quite frankly, when we actually find out what are the things that are working, we can find ways to actually share it with other people within even counties. So local officials can actually learn from local officials to replicate those success stories in other places.

Mr. O'HALLERAN. So I have a comment here. You know, I have been listening, and what I have heard is we are trying to make excuses why we shouldn't do something, and to—instead of finding ways that we can do something. And we need to start thinking in that direction. I know, if we were a business, that is what exactly we would be doing.

Mr. Lewis, there are some rural areas in my district where building out broadband will be very difficult, and we may have to consider options other than fiber optics to get it done. Do you think we should prioritize speed or access?

And do you think there is a tradeoff between the two?

Mr. LEWIS. Well, certainly, as technology develops, we hope there will be more and more options for making sure that we get the quality and the speed to everyone.

But I think it is important that, as a country, when we are setting policy, that we are setting a standard that is—in urban, rural, Tribal areas, that everyone has the same standard for the quality of broadband, the speed of broadband that they can get. And hope-

fully, over time, that will be able to be provided by multiple different types of technology.

Mr. DOYLE. The gentleman's time has expired.

Mr. O'HALLERAN. Thank you, I yield.

Mr. DOYLE. OK, the Chair now recognizes Missouri's favorite congressman, Billy Long, for 5 minutes.

Mr. LONG. Thank you, Mr. Chairman. I appreciate that.

And Dr. Ford, I am—as we have this discussion here today, I am reminded of the king that sent out one of his servants, and he wanted him to come back and research all the history of the world, all the knowledge of the world, he wanted every bit of knowledge he could gather. So the guy goes off, comes back in a year, he has got eight volumes. The king said that was way, way, way too much. Get it down to one volume.

So he comes back another year, and he has got all the information, knowledge of the world, in one volume. Way, way, way too much. Come back with one chapter.

So he does that, the same thing, comes back with eight paragraphs. Finally—says, “That is way too much. I want all the knowledge of the world, but I want it condensed.”

And he finally, coming back after another year, and he said, “There's no free lunches.” And that is kind of what my question or direction is going to go today, since we know there are no free lunches.

When I hear talk about the government regulating broadband prices, I wonder what the cost is going to be. As an economist, could you discuss how this country has benefited from choosing not to heavily regulate broadband, and what you predict the impact would be if we decided to regulate rates?

Dr. FORD. Yes. Giving private providers the flexibility to meet the needs of their customers and try to obtain customers is very important to the development of the market. It encourages the private providers to invest in the network and to upgrade their networks.

When you constrain the firm, with respect to its prices, then it has to try to do that in some other way. And that other way may not be desirable. If you constrain its price, it may reduce quality, it may stop upgrades, it may reduce where it goes. I mean, there are consequences. It is not that you can just change price and nothing happens. There is a response. Firms are not passive recipients of regulation, and that would be my one sentence, if somebody asked for the volume of the history of regulation. Firms respond to what you do to them, often in ways that you don't expect, and often in ways you don't like.

But I don't think that the problems that we are talking about today are going to be addressed or solved by rate regulation. They are going to be addressed and solved by very targeted policies to deploying broadband in rural areas and dealing with the affordability problem for people who face it.

Mr. LONG. Are you—staying with you here, Dr. Ford—are you concerned about all the Federal broadband money crowding out private investment?

And what impact is this having on the incentive for private investment and the speed of deployment?

Dr. FORD. When you—well, it comes in many ways, but yes. I mean, if there is money there, why not wait for it, or why not just take it?

If you continue to invest in areas that are already built, what you are going to see is the withdrawal of investment from those areas. It is very hard to compete with a subsidized competitor, particularly when they are your regulator, like the government. So, you know, there is going to be that response, and I think it could be detrimental.

I do think that, if we design very good policies, we can avoid a lot of that. But about ham-handedness and getting a little too excited about it can be detrimental.

Mr. LONG. Isn't it true that the combination of increasing broadband speeds and falling prices means that residential broadband prices have dramatically declined on a megabit-per-second basis?

Dr. FORD. On a megabit-per-second basis the prices are way down, yes.

Mr. LONG. Yes, that is what I thought. And the COVID-19 pandemic presented extraordinary circumstances for all Americans. As a response, Congress enacted temporary programs to provide relief to struggling families, including \$3.2 billion in funding from the FCC's the Emergency Broadband Benefit program, which just started accepting applications.

Now that our economy is finally starting to reopen, does it make sense to make the Federal Emergency Broadband Benefit program permanent?

And shouldn't we study the effectiveness of those subsidies before we make them permanent?

Dr. FORD. I mean, I think there may be more cost-effective ways to make broadband affordable for people who really need it than that program was. I mean, that was, obviously, rushed in a very panicked time.

I think there are better ways to do it, and I think there—we could set up good incentives for firms to compete for those customers, and that those customers are able to get affordable, if not free, services that satisfy their needs.

Mr. LONG. OK, thank you.

And, Mr. Chairman, I yield back.

Mr. DOYLE. I thank the gentleman. The chairman now recognizes the gentleman from Florida.

Mr. Soto, you are recognized for 5 minutes.

Mr. SOTO. Thank you, Chairman, for the opportunity.

America has been here before. There was a time as late as the 1940s where so many families in rural America had no electricity. And a young Member of Congress campaigning for Senate named Lyndon Johnson promised farm families that electric cooperatives could help them in their reliance—get them off of oil lamps and wood-burning stoves. And America got it done.

Can we imagine living in places without electricity across America? That would be unspeakable. This is the challenge of the 21st century: providing internet access to all Americans. Because it is just as essential.

I was looking at the statistics and the staff analysis: 20 percent of Anglos have no access to home broadband, 29 percent of African Americans have no access, 35 percent of my fellow Hispanic families have no access to broadband. Whether it is broadband, or whether it is other internet options to get us to those last miles, to those isolated rural areas, such as Native American Tribal lands, we need to get it done. That is the charge of this committee. That is the charge of this Congress.

And then, when we see studies like the Deutsche Bank study finding that Blacks and Hispanics are 10 years behind Anglos with regard to internet access, it is an equity issue.

Then, when you look at the number of students, 15 to 16 million lack internet access. That became exacerbated by COVID-19, and kids not being able to distance learn.

I think about areas like South Osceola County and rural Polk County, where we have communities of Anglos, Hispanics, African Americans, many of whom are living without adequate access to internet, like a small Hispanic business that wants to do—have a website that works, and be able to take clients and customers online, but their internet is too slow. An African-American student in a small city that couldn't distance learn over the pandemic because he or she didn't have internet access. Or the Anglo farmer in my district and—with a cattle ranch or with a citrus grove that wants to use advanced sensors and Wi-Fi for precision agriculture. It is out of reach for these constituents and others. And as I mentioned, COVID has only exacerbated these disparities.

So my first question is for Ms. Chaney.

Do you think that the American Jobs Plan and the goals of this committee to boost internet access through those plans will make a big difference to getting internet access to all Americans?

Ms. CHANEY. I think it will make a huge difference, so long as it doesn't just solve for deployment, as long as it also solves for affordability.

Congressman, I am from Florida, it is good to see you. Let me just say that, in addition to the examples that you gave, I would like to give some examples around women. I come from the women's economic security space. We know what this pandemic has done to women's employment. We know that when women make more money, right, there is a lower wage gap when women have flexibility in the workplace.

Having broadband in the home allows for flexibility. It allows them to meet caregiving responsibilities. It allows men to meet caregiving responsibilities and be able to work. It allows them to work at night, pull an all-nighter. It allows children to be able to pull an all-nighter, to be excellent. And when they can take jobs that allow for flexibility, they can usually earn more money. This is a critical piece for us to address.

Mr. SOTO. Absolutely, and I agree.

Mr. Lewis, we have heard a lot said today about how we don't have enough info to act to increase internet access in rural areas and communities of color. Do we have enough information to get started on this?

Mr. LEWIS. Congressman, absolutely, we do. We have years—over a decade of efforts by policymakers and industry saying they

were going to close the digital divide. And in that amount of time, millions and billions of dollars have been given to industry, and they still pick and choose who gets infrastructure built up to them.

We have to put some rules—build out requirements and rules around anti-redlining into effect to make sure that, when you serve a service area, whether it is in an urban community, a rural community, a Tribal community, that you serve everyone in that area.

Mr. SOTO. Thank you so much.

Ms. Ochillo, we saw in the CARES Act supplemental—we passed the first internet assistance program. Our staff analysis says we could greatly expand access if families in need could pay 10 to 15 dollars a month. Is this a key part of the solution?

Ms. OCHILLO. Very much so. We have to be able to provide affordable service options.

And also we acknowledge that there are going to be families that aren't even going to be able to afford the 10 or 15 dollars. Either way, that is something that we have to commit. If we are serious about making sure that broadband gets to every single household, that means that we are going to have to serve the people near, the people far, the people who can afford it, and the people who can't.

Mr. DOYLE. The gentleman's time has expired. The Chair now recognizes Mr. Walberg.

You are recognized for 5 minutes.

Mr. WALBERG. Thank you, Mr. Chairman. I appreciate that. I appreciate this hearing and all of the panel members that are with us.

I would like to point out an important distinction between underserved households and unserved households. I think we discussed that, but I just want to punctuate the point. Families in most urban areas can find at least one option, albeit maybe not an ideal option in terms of cost or speed, but at least there is something to build off of.

Most folks where I am seated right now and parked in my district, not very far, just a—really, a few miles from where my good friend and colleague Debbie Dingell's district is, don't have a choice of even a single provider, let alone a high-cost option. During my socially distanced live town hall meeting a few days ago in Bedford Township, one constituent told me the waiting list to check out a MiFi from the local library was 4 months. That is not satisfactory.

At this moment, when digitization of our economy is advancing so rapidly, our immediate focus should not be on unsubscribed households, but more so on unserved households, which data tells us are overwhelmingly in rural and Tribal communities. For these folks, the number-one barrier to broadband adoption isn't price, but lack of access in the first place. That is because Americans can't adopt broadband in areas where broadband hasn't been deployed.

Now our Democrat colleagues in Congress and the administration have introduced plans to expand broadband deployment, but most of their proposals, including the LIFT Act and the Biden-Harris administration's infrastructure plan, focus on upgrading technology in areas that are already served and overbuilding existing high-speed networks rather than connecting areas without any service at all.

In contrast [audio malfunction] for deployment we have to discuss this.

Mr. Ford, how would proposals that focus on future-proof networks and [audio malfunction].

Mr. DOYLE. Tim, we are not able to hear you. Your audio has cut off.

[Pause.]

VOICE. Bad broadband.

Mr. WALBERG. Can you hear me now?

Mr. DOYLE. Yes, I think you are in one of those underserved areas.

Mr. WALBERG. Yes, it is a perfect example, isn't it, Mr. Chairman?

[Laughter.]

Mr. WALBERG. I am sorry about that.

Mr. DOYLE. OK.

Mr. WALBERG. But you can hear me now?

Mr. DOYLE. Yes, yes, we can. Yes, we can.

[Pause.]

VOICE. No.

Mr. DOYLE. Well, no, we can't now, Tim.

[Pause.]

Mr. WALBERG. If you can hear me, I just made my case.

Mr. DOYLE. Well——

Mr. WALBERG. I yield. I yield back. I yield back.

Mr. DOYLE. OK, the gentleman yields back, and we are going to have to get some service out your way right away, Tim. I am glad to see your car wasn't moving. But we will get—try to get back to you, if we have some time, because you were cut short.

OK, let's see. Miss Rice, you are next. You are recognized for 5 minutes.

Miss RICE. Thank you so much, Mr. Chairman. I want to thank all the witnesses for being here. You know, I am so glad, Mr. Chairman, that we are having this hearing today. But I just honestly am at a loss to understand that we are quibbling over this issue, you know, access versus cost. The bottom line is kids are being left behind and opportunities are being lost, and that is going to have an enormously huge impact on the competitiveness of this country, going forward.

Look, the inability for some families to afford internet service has caused connection disparities along racial and geographic lines, as we have spoken about. We all saw during this pandemic when students who lived in one neighborhood had extremely different outcomes with at-home learning than their counterparts in a neighborhood just a few blocks over, all because one student could get online while the other couldn't.

Affordability should not be a barrier to entry, and that is why I think all of us in Congress should be proud that we—with what the EBB program has done. And we will see how this goes, as the application process begins.

So, Ms. Chaney, I would like to start with you. If you—just a couple of questions. Can you talk again about how the EBB program is going to help close the adoption gap?

Do you agree that encouraging broad provider participation in the broadband benefit program will help maximize both consumer choice and increase enrollment?

And do you believe that this benefit, this EBB program, should be made permanent?

Ms. CHANEY. Thank you so much, Congresswoman.

We absolutely support the Emergency Broadband Benefit program. We know there are areas where it could be improved, but ultimately we believe everyone should be very focused—and certainly our affiliates will be focused—in working with the FCC to make sure that what—that people know that this benefit is out there, that they know how to utilize the benefit, and they know how it would have vast improvements, you know, in their lives and in their ability to compete in a 21st century market and educational environment.

So we are very excited about that. We want to partner with other organizations who are here, who want to do that outreach work. And we welcome the participation of anyone who is engaged in trying to make sure that program is deployed. And yes, we think, if it is successful, we want to see where improvements need to be made, but we do believe that having some kind of permanent program is important. Because otherwise, what is going to be the difference at the end of the emergency? People will still need broadband service.

And what has not been talked about enough here, in my view, is that—the fact that our world has changed, and we are not just going to go back to prepandemic levels and standards and norms. We are moving on. Everything will be more digitalized, and more—there will be a lot more tele in all of the work that we do.

And so I will yield, but I wanted to make that point. I think it is really important.

Miss RICE. No, it is a really good point, Ms. Chaney. And, you know, look, all of us know that we were talking about access and affordability of broadband well before this pandemic. But now what we can't do is ignore it, because the pandemic has laid it bare for all of us to see, and it is impossible to ignore, nor should we.

Ms. OCHILLO, I would like to ask you to talk about eligibility to receive a discount through the program. I have just talked about different communities that are more likely than others to lack broadband service at home. But one group that doesn't usually receive much attention is older Americans.

Ms. OCHILLO. Yes—

Miss RICE. A lack of home broadband for older Americans makes it harder to get critical health information, make appointments for telehealth services, and even vaccine appointments. We have seen that in my district. So are you aware of community digital inclusion efforts to ensure that seniors are connected?

And can those programs be replicated in other places around the country?

Ms. OCHILLO. Well, there are several community programs that are making sure that seniors are connected, not just in New York but nationwide.

But I do think that one thing I want to drag in here is that one of the reasons why is because of librarians. They are actually one

of the people who are my favorite. They are my digital social workers. They make sure that people actually stay connected when they aren't enrolled in school.

And one thing I want to point out: If we are talking about economics, when we have people who are older adults, they are living longer. People are not just going to have one career. And usually that second career is going to require some sort of online training to up-skill. So we need to not only think about how do we get the K through 12 and the college students trained. How do we make sure that people are ready for their second career and prepared for that?

When we are talking specifically about the Emergency Broadband Benefit, it is not only that people don't know about it, it is that it is actually—most of the information sometimes is online. So we have to actually get out into neighborhoods to make sure that people find out that they are actually eligible.

Mr. DOYLE. The gentlelady's time has expired. Let's see, the Chair now recognizes Mr. Duncan for 5 minutes.

Mr. DUNCAN. I thank the chairman for holding this important hearing. And I support the idea of a broad, bipartisan effort to address the need for rural broadband. I believe this means a focus on doing what will last for the long term while also getting the most bang for the buck. That will require investing in fiber optic infrastructure in the ground that we can grow with and grow the network with, again, so that we are not paying for the same areas over and over.

We need to ensure that government isn't paying for the same urban-center broadband networks over and over again. That means emphasizing the work this committee has done to ensure that we are utilizing accurate mapping to help push broadband where it is needed: to rural areas in Appalachia and throughout the South and the West.

There exist two or three organizations which I believe can get us to rural broadband coverage most efficiently: electric and telephone cooperatives, and private-sector telecom companies. They have done similar things before, and I believe they can do it again.

But let's let them plan for future growth—i.e., fiber optic—and let them set competitive rates that allow them to be profitable without being subsidized by the government, because the Biden ask—a \$100 billion plan that is being proposed—just doesn't work. And there's numerous examples where these Bidenesque plans have failed.

In Senator Bernie Sanders's backyard of Burlington, Vermont, the city tried to build its own broadband network and was unable to service the debt for the project.

In Provo, Utah, Mr. Curtis's area, when the city ran the network, subscriptions were not enough to cover the debt, and the city had to infuse up to \$2 million a year from the city's energy department surplus funds.

In Philadelphia, Chicago, Portland, Orlando, and others, the experiment with government-sponsored broadband is a panoply of recklessness and waste, with losses totaling in the billions.

Another example, Salisbury, North Carolina, the city wound up \$32 million in debt and ultimately had to lease their system to a private provider.

In Groton, Connecticut, the city wound up \$27½ million in debt, even after selling off their network for less than a million dollars, and now their credit rating has been impacted.

Lake County, Minnesota, lost 40 million on that network.

Burlington, Vermont, tried to prop up their network, 17 million in funds, but ultimately only sold it for \$6 million because of lack of interest.

The examples are numerous, so why don't we focus on incentivizing the private sector to do this?

And I agree with Miss Rice, who said, you know, access to rural broadband helps with telemedicine and education and all that. I think that is why we are all bipartisanly interested in this effort.

Mr. Ford, I want to ask you, what is the quickest and most affordable method to get broadband internet services to those Americans identified as underserved, without wasting taxpayer money? Because, with examples like I just mentioned, that is exactly what it looks like will happen under this plan. Mr. Ford?

Dr. FORD. I think that you are going to get existing providers, public or private, I guess, to extend their networks to unserved areas, if that is a possibility, and try to use a mechanism that exists to do it. And I think the FCC has a mechanism. There might be some quicker way to do it, but I am not aware of it.

I think the FCC might be more open to some areas, but it is clearly to try to exploit what network is there now, through an extension based on subsidy dollars. That is the most efficient way to do it, and not to overbuild existing areas, which just doesn't accomplish the task.

Mr. DUNCAN. That is a great answer. Mr. Chairman, I want to just point out to this committee that, when we needed to electrify rural America in the post-Depression era, from the 1930s through the 1950s, and even on into the late 1950s, we created a cooperative system, the electric cooperatives, that actually provided that. And those companies have not gone broke. In fact, they are member-owned, they meet an underserved area, they continue to do a great job, and that model should be what we, as Americans, look for to reach these underserved areas.

And I would love to work with my colleagues across the aisle to figure out how we can do this without having the Federal Government pay for it, because that money comes from the taxpayers. And there is example after example of government-run systems which have been sold for pennies on the dollar, which have had to raise taxes or use other funds to help subsidize because they do not work. The private sector can do it better than anyone, and that is where we need to focus our efforts.

And with that, I will yield back the time I have.

Mr. DOYLE. The gentleman yields back. I see Mr. Walberg is back.

Tim, I would be willing to give you 2 minutes because you were cut off for about 2 minutes, if you want to ask a question in 2 minutes. Would you like to do that?

Mr. WALBERG. I would, if you can hear me. Can you hear me now?

Mr. DOYLE. We can hear you.

Mr. WALBERG. I——

Mr. DOYLE. We are going to run some fiber out to you, Tim, shortly. So it is——

Mr. WALBERG. Well, I am blessed with broadband at my house now, finally, out in the rural community. But I was out in an area I was talking about, so now I have rushed into town, to Saline, Michigan, and I am at a bank parking lot. So now maybe I am doing an OK job here.

Mr. DOYLE. All right.

Mr. WALBERG. Let me go back, Mr. Ford. How would proposals that focus on future-proof networks and symmetrical speeds such as the LIFT Act and the Biden-Harris infrastructure plan delay broadband access in unserved areas and, in turn, hinder the ability of Americans living in those areas to adopt broadband?

Dr. FORD. I think the purpose of those proposals—or the effect of those proposals, I would say—is to increase the cost of deployment, which makes it harder to deploy. It is going to make the subsidy burden go up, because those networks are not going to be deployed by the private sector because there is no point in doing that. Our networks have proved resilient over time, and upgrade when they need to.

So I think it is going to be detrimental to deployment in rural areas.

Mr. WALBERG. You know, I think it would, as well. Let me jump to another issue, Mr. Ford. Would rate regulation help close the rural broadband gap, or is competition and a light-touch regulatory framework a better way to get broadband to those who do not have it yet?

Dr. FORD. I mean, if the goal is to expand availability, then rate regulation is a terrible idea. It just works against it, plain and simple. And it also increases the burden on society, from the taxation required to subsidize the deployment, because now, to get—you have just made the business case worse, so now you got to—now they are going to ask for more money to deploy the network. So whatever you think you are getting out of rate regulation, you just gave back in taxation. So it doesn't—it just doesn't make any sense.

Mr. WALBERG. Thank you, I appreciate that.

Mr. Chairman, thanks for your courtesy. I will yield back my 12 seconds.

Mr. DOYLE. OK, I thank the gentleman. Let's see. Next up we have my good friend, the gentlewoman from California, and my next-door neighbor in the Cannon Office Building, Anna Eshoo.

Anna, you have got 5 minutes.

Ms. ESHOO. Thank you, Mr. Chairman. This is a very important hearing, and I thank you again for having it.

I have a few observations before I ask a couple of questions. Mr. Ford has advanced something that I really have not heard of before in all of the hearings that we have had on broadband. And we all wish we had a nickel or a dollar, because, on a bipartisan basis, affordability, access, who has it, who doesn't—but this notion of people don't want it, I don't find that to be a compelling argument.

I haven't heard Ms. Ochillo or Ms. Chaney from the Urban League mention that at all within their membership. I think they are pretty darn close to the ground. And so I don't—well, I don't find that to be a compelling argument at all.

Now, the issue of rate regulation has been raised. I don't know how many Members have read all the bills. Go back and read them. You are not going to find rate regulation in any of them. If you want to call affordability "rate regulation," well, tell your constituents that. Tell your constituents that. We know, if someone can't afford something, they don't—access doesn't mean a darn thing to them. So read the bills instead of the talking points.

Now, Mr. Walberg described a very powerful case. He hits on access, he hits on price, he hits on competition. The problem that we have in the country is the following: Yes, we have the private sector, terrific, they all have a business plan. They are in business to make money, and we accept that. That is our system. But in their plans they go only where they can make money. So we have large swaths in our country, represented by Republicans and Democrats, where people don't have access. And if there is some access, they can't afford it. And there is the lack of competition. So that is what we are trying to fix.

On this issue of municipal networks not working, you know what? I could list all the ISPs that have failed. It would be a much longer list. I will give you that list.

And on municipalities having the power to establish them, we allow municipalities to have their own utility. I have one in Palo Alto, California, the home of Stanford University. So what is the problem with that? I just—it is a kind of a little bit of political double talk.

Anyway, let me get to my question, first, to Ms. Ochillo. To all of the witnesses, thank you. I have paid very close attention to what—as you can tell, what all of you have said.

On the municipal networks, how do the prices work? Can you give me or give us an idea of how much money people are saving, or the affordability of it, and how does that compare with private providers?

Just very quickly, because I talked——

Ms. OCHILLO. Just very quickly——

Ms. ESHOO [continuing]. About my observations too long.

Ms. OCHILLO. Municipal networks work a little bit—thank you for the question. Municipal networks work a little bit differently than private, in that they usually post their prices for their service tiers online. It is hard to compare municipal networks to private networks, because there is no standardized tiers. So it depends on which State and which company that you are looking at. But they are known for being lower prices, higher speeds. And also, they are always—they always have a low-income option for all of the residents.

Ms. ESHOO. Thank you.

And to Chris Lewis, congratulations. I think it is the first time you are testifying.

Mr. LEWIS. Thank you.

Ms. ESHOO. Very good. In your written testimony, you included a brief mention about how Arkansas recently changed its mind and

repealed its State law prohibiting municipal broadband. What can you tell us about why the State made this decision?

Mr. LEWIS. In short, the community called for a change. You know, Arkansas tried using subsidies that went to 2011, I believe, and those carriers simply did not choose to invest in all the communities. And so there were still people left out. And so communities heard from their constituents that something had to be done.

Mr. DOYLE. The gentlelady's—

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

Mr. DOYLE. I thank the gentlelady. Let's see, Mr. Curtis, you are next. You have 5 minutes.

Mr. CURTIS. Thank you, Mr. Chairman. As a newer member of the committee, we have this unusual situation of being near the last. And I cannot think of a single time where I hope my colleagues are listening more than right now. And that is because a little over a decade ago I became the mayor of Provo, Utah. And as such, I inherited a struggling municipal broadband network. So I have lived this.

The network failed, and it caused serious problems. Our local paper described it as a millstone around our neck. And it fell for a variety of reasons, most notably our inability—and I hope people are listening—our inability to deal with the fast-changing nature of broadband and the large capital needs that happen on a recurring basis. And, as a result, taxpayers over a decade later are still bearing the financial burden of that gamble.

I saw firsthand the inherent problem with local government stepping out of their core competency.

Let me be very clear. There are dramatic differences between streets, sewers, parks, and yes, even municipal power—and I had municipal power—and broadband deployment. When we put our network in place, nobody could dream of a gig speed. That was just 10 years ago. We upgraded it to a gig speed at massive amounts of money. And today gig speed is now in the rear-view mirror. You have got to be talking 10 gig.

So, despite our failures and the failures of other municipalities with these networks, this plan still includes infrastructure prioritization for funding of these networks. Mr. Ford, can you speak to the track record of these government-owned networks?

And do you understand what I am saying with the problems with the municipality dealing with this?

We were called earlier by one of our colleagues “scrappy.” As a mayor, I want you to know I actually believe that. I own that. But scrappy doesn't work with tens of millions of dollars, and billions of dollars, in a core competency they are just not capable of.

Mr. Ford?

Dr. FORD. I think you laid it out pretty clearly there and may be a better witness than I am about the details of that.

We also heard earlier, from the Congressman from Florida, a long list of the failures. And I mean, I hate that. I mean, I have had one here near where I went to university, in Opelika, Alabama, just recently. I hate that it works that way. It is entirely predictable.

Mr. CURTIS. Yes, and just because of time, I am going to move a little bit.

After fits and starts, today the residents of my city have had free access to internet for 7 years, free for all of our residents. And I wish I had the time to discuss the layers of complications that you have tried to describe today with why people don't take advantage of that and why we can't get every household to take advantage of it even when it is free. And there are layers of complication that we are not really discussing in today's hearing.

Now, let me switch gears just a little bit. My experience that I have learned through this process is the single biggest impediment to expanding network coverage and higher speeds and more locations, quite frankly, is regulation. And it is not just Federal, it is local regulation, pole attachments and things like that.

In one of my counties, San Juan County, 90 percent of the land is owned by the Federal Government, and it can take up to 9 years to permit across this Federal land. That is not doing the project. That is just to get permitting in place.

Mr. Ford, I have got a bill that is called the Rural Broadband Permitting Efficiency Act. I don't know if you are familiar with it. Can you speak to how bills like this, how bills like shot clocks and things like that, that some of my colleagues have, could help us accomplish the goals we are talking about today?

Dr. FORD. I think bills like that could be very important to pushing broadband out, particularly at the margins, and even outside that. I mean, if you have got a 9-year program, I mean, that is not going to work.

And you also see that many areas—I have talked to many providers who say, “I just can't build there. I would like to, but it just takes so long, and you put so much capital in and you don't get to earn on it for years because of these processes.” So I think that could have a huge difference, and it reduces the subsidy that is required in areas where that doesn't solve the problem, because you reduce the cost of deploying, so the bids will be lower in the FCC's auctions—

Mr. CURTIS. In the last—just very quickly, is it even possible to get where we want to get, where we all agree we want to get, without permitting reform?

Dr. FORD. I think it would be very costly, and it will take a very, very long time to get there.

Mr. CURTIS. OK, I thank you. And in my last few seconds let me just appeal to my colleagues.

I would love to come talk to you, even personally, about my experience. Obviously, I have had some unique experiences. I have some insight on this. I think we all agree on the same goal, and I would love to share the insight I have with you on how I think we can get there.

Thank you very much, Mr. Chairman. I yield my time.

Mr. DOYLE. Thank you, Mr. Curtis. OK, next is our vice chair of the subcommittee, the gentlelady from California.

Ms. Matsui, you are recognized for 5 minutes.

Ms. MATSUI. Thank you. Thank you very much, Mr. Chairman, and thank you very much for having this hearing. We have been having—we have been talking about broadband for a very, very

long time. But, with the pandemic and all, we realize most of America has realized how important it is. And there has been many challenges here, but I also believe that there has been many ideas that are already working that we need to expand on further.

And we also have to look at communities and how important they are too. In, for instance, my community, Sacramento, there has been an additional commitment to really make sure everyone who needs broadband has access to it because it is so, so very, very important. In fact, when the CARES funding came, they used a portion of it to distribute to 1,300 hotspots at libraries serving more than 1,000 families. And those who received the hotspot also got hands-on training to ensure they had the skills they need to use these tools.

Now, thanks to updates included in the American Rescue Plan, these libraries are now preparing to extend their broadband service further into the community, reaching people where they live.

Now, we have made progress. I think we already know now how much more needs to get done. The high costs of broadband service, digital redlining are still keeping American families on the wrong side of the digital divide.

Now, I have mentioned libraries because they are anchoring institutions, and I really believe in—Ms. Eshoo was saying how important the municipalities are, and communities working together. Anchor institutions are really powerful, and I look at libraries because they are powerful forces of connectivity by, you know, distributing the hotspots and providing onsite digital training for those who need it. And this approach realizes that connectivity alone is not enough to get families online. Digital literacy and equipment training is a fundamental part of increasing adoption.

Ms. OCHILLO, what role can community anchor institutions like libraries or schools or community centers play in promoting digital literacy amongst underresourced households?

Ms. OCHILLO. Thank you for the question, Congresswoman. And when we are talking about librarians, they are—very often they are the people that are actually—about 30 percent of people who are living near the poverty line rely on their local library for reliable access. So that is going to be the place where they go for information on taxes, COVID relief, how do I get in touch with, you know, whatever services that they need, and they are also going to use librarians as a coach.

And especially in schools, a lot of the times we know that, when students need reduced lunch and other social services, schools are going to play an imperative role in being able to identify who needs service.

Ms. MATSUI. OK, and how have public Wi-Fi networks or other community broadband access points helped cover the gaps in service?

Ms. OCHILLO. They are essential, because very often you will have a large amounts of the community—look at COVID. We knew that there were actually libraries that actually went in and turned their equipment outward towards parking lots, to make sure that people had reliable access points, because they fill in the gaps.

So while—whether it is you trying to figure out a solution with a provider, or your local government trying to figure out a stopgap

solution, very often schools and libraries are going to be there to fill in the gaps. And also, they might be able to help support ideation, where you can get people together to say, "Should we build a mesh network? Should we partner with other people?"

Ms. MATSUI. Well, they are trusted institutions. That is why it is really—libraries.

Eligibility for Emergency Broadband Benefit expanded on—by using—by including Pell recipients, students getting free or reduced lunch, and those experiencing economic hardship from the pandemic. There is still a need for a long-term broadband subsidy to build on this work. And I believe that the eligibility for EBB should serve as a floor for our future work. And as we expand the reach of Federal support, we need to ensure that those who are eligible for a qualifying program are not forced to complete burdensome paperwork, especially if they are without internet access.

Mr. Lewis, how can the Federal Government leverage existing databases to reduce the burden on families seeking broadband support?

Mr. LEWIS. So hopefully we can learn from not only the implementation of the EBB system, we can also use databases, such as the SNAP database, other databases that can verify who is applying, and get them expedited into the system.

Ms. MATSUI. Right, and so it is a good way to reach out in order to make sure that we are reaching the people who really need it. So, OK, great.

Mr. LEWIS. You want to meet people where they are, yes.

Ms. MATSUI. Absolutely, absolutely.

Well, I am going to yield back 7 seconds, Mr. Chairman, thank you so much.

Mr. DOYLE. I thank the gentlelady for that. Let's see, next I believe we have Mr. Carter.

You are recognized for 5 minutes, Buddy.

Mr. CARTER. Thank you, Mr. Chairman. And thank you to all the panelists. This is certainly important.

But I have to tell you that I have got concerns. The proposal that we are looking at now puts nearly \$100 billion to fund broadband build-out, and the emphasis is placed on policies that lead to overbuilding in already served areas and on government-run networks.

We heard during this hearing about existing examples of cities that tried to build out their own municipal networks and failed, after spending significantly—a significant amount of money. Having cities which may be able to sustain a network build out government-run systems can lead to additional strain on local budgets. I too was a mayor at one time, and I know what a strain it can be when you don't plan for the maintenance, or for having to upgrade, and those type of things. And that is a problem, a concern that—or a problem that is often made with municipalities. So it is a concern for everyone.

And the proposals that we have seen in this package focus on the idea that throwing billions of dollars to the issue will address the long-term needs of our communities. But I am concerned that too much emphasis is being placed on throwing billions of dollars into overbuilding and not enough on long-term sustainability.

Dr. Ford, I want to ask you, these proposals that are focused on injecting billions of dollars into communities without the notion or any notion of overbuilding our long-term sustainability, what kind of shortcomings do you see in maintenance here?

Dr. FORD. Well, I mean, if you build these networks, they are going to require—with government money, they are going to require more and more and more and more government money over time. I mean, we spend \$80 billion a year maintaining our broadband networks, the private sector. You don't get out of that. As Congressman Curtis was talking about earlier, they are very, very demanding of finances. And so you are going to be talking about this every year, how much money you are going to write.

Mr. CARTER. How much does it cost to maintain a system like this, any idea?

Dr. FORD. Oh, I don't know what the capital base of the network is, but, I mean, \$80 billion, at least, for nationwide. So——

Mr. CARTER. How do——

Dr. FORD [continuing]. Probably 10, 20 percent of your capital base a year.

Mr. CARTER. Exactly. And how are cities expected to pay for it?

Dr. FORD. Well, normally they will tax. They will ask you for it, which is the first task. Then they will raise electricity——

Mr. CARTER. You said it right there, they will ask us for it.

Dr. FORD. Yes, absolutely. Yes. And in some cities that have municipal electrics, they will raise the municipal electric rates. That happens very, very often.

Mr. CARTER. Right now the private sector's investment we have seen in broadband over the last 20 years has been in excess of \$1.8 trillion. And the ISPs invest three times as much per household than is—than the providers in Europe do. My understanding is that each year the ISPs in America apply about \$80 billion into keeping these networks up to date. That is just to keep them up to date, about \$80 billion. But the proposals that favor municipal or government-controlled broadband seems like there is an expectation that it will provide a better outcome.

Dr. Ford, do you think that government-controlled networks are able to deliver better broadband?

Dr. FORD. Not in the long term, no. I mean, it is—there is a lot of evidence that that is not true. And, really, it is the long term that we are thinking about here. I mean, this is not a 1-year process. This is a long process.

Mr. CARTER. Well, let me ask you. Are there any examples out there that you know of where government-owned networks failed or had to be transferred to the private sector?

Dr. FORD. Oh, there are very, very many of them. I have written about quite a few. We talked about them in this hearing. There is a long, long list of financial disasters in municipal broadband. And it is not that—it is not like somebody else is paying. It is taxpayers that are being forced to pay the cost of those financial failures. This isn't voluntary, this is coerced participation in a financial failure.

Mr. CARTER. I tell you, again, in my experiences as a mayor—I was mayor for over 8 years, and I can tell you that this is just the type of thing that gets municipalities into serious, serious trouble. And this is dangerous. I hope that, you know, we do everything

we can to encourage the private sector to be involved in this and to get out of their way and let them do what they do best.

And thank you, Mr. Chairman, and I will yield back.

Dr. FORD. I like your poster.

Mr. CARTER. Thank you.

Mr. DOYLE. The gentleman yields back. Let's see, Mr. Welch, you are now recognized for 5 minutes.

Mr. WELCH. Thank you very much, Mr. Chairman.

Mr. Lewis, I wanted to ask your thoughts on how we provide an adequate and sustainable funding mechanism by any means—it doesn't—whether it is government or otherwise—to address the affordability issue that we did on a temporary basis with the Emergency Broadband Program.

Mr. LEWIS. Sure, Congressman. There are a variety of options, I think, at the disposal of the policymakers that—you know, we have a USF program that was built for the essential communications network of the 20th century, phone, that can be reformed for broadband. And I think that is one possible way. There are other ideas out there, such as building a fund using spectrum options or even through appropriations.

You know, I think the most important thing is that the funding is long-term sustainable and reliable, so that low-income families can feel secure that it won't go away.

Mr. WELCH. OK, what is your view about some of the programs like Comcast has for a low-cost option for folks who are on that economic fringe, where they don't quite qualify for whatever the Lifeline-type program would be but don't have the money to be able to pay the full freight?

Mr. LEWIS. I think it is great that they are offered, and it is good that the trend is that more and more providers are creating these low-income—low-cost offerings. It would be great if it was required that every provider provide it for someone who qualifies and also that some of the rules that make it difficult for low-income families to subscribe to those low-cost options are relaxed.

It can often—you know, the Comcast program, you know, still may require a family to unsubscribe from something that they couldn't afford, but were—in order—for a few months, in order to subscribe to the low-cost program.

Mr. WELCH. OK, thank you.

Ms. Ochillo, on the open access projects, that is an operating principle. Would that help, as you view it, to decrease the cost of broadband?

Ms. OCHILLO. Very much so, because part of what we know is that, when providers get Federal funding, there is really no requirement for them to share their infrastructure. So, essentially, if somebody even goes nearby, essentially, you have to start all over again. When you have an open access network, you have publicly owned infrastructure that everyone else is tapping into. So you get the best of both worlds, in terms of having community infrastructure that, essentially, whatever profits generate from that stay in that community. And then also, you get the competitiveness with providers plugging into that network.

Mr. WELCH. So how did—just—I want to answer my colleague Mr. Carter's concerns about the private sector doing this. These

open access projects, in a way, feel like a road, you know? Anybody can go on the road. It gets built, and then everybody can use it.

But would—his concern about getting out of the way of the private sector, would you see having these open access projects as an impediment to the private sector being able to do what it does do in some cases really well?

Ms. OCHILLO. Not at all. And I think that, quite frankly, we are seeing more and more examples of open access networks that are working.

But one thing that I think we need to be really authentic about this is the fact that there are always going to be talking points to protect providers and, you know, their investment, and how great they are at their jobs. But essentially, the reality is, when you go out into these neighborhoods, they also decide the places that they don't want to go.

Mr. WELCH. Right.

Ms. OCHILLO. So we can't have this existential question saying we want everybody to be connected, but then still fund with public funds providers who choose not to go to places that are—remain unserved.

Mr. WELCH. Well, it is interesting. That has definitely been a challenge we have had here, in rural Vermont.

I thank you, and I thank the panel for your excellent presentations.

Mr. Chairman, I yield back.

Mr. DOYLE. I thank the gentleman. Let's see, the gentleman from Oregon, Mr. Schrader, you are recognized for 5 minutes.

[Pause.]

Mr. DOYLE. Is Kurt with us?

OK, I don't see Kurt, so I think we are going to go to Mrs. Fletcher.

You are recognized for 5 minutes.

Mrs. FLETCHER. Thank you so much, Mr. Chairman. Thanks to you and Ranking Member Latta for holding this important hearing today, and all of the witnesses for taking the time to testify. This has been a really interesting and useful hearing for all of us. And I think, you know, we have heard across both sides of the aisle that reliable, high-speed internet connection at home is now essential for everyday life.

We have talked a lot about students. We have talked a lot about the gap and who is getting left behind. But from education to job searching and, you know, here in my home in Houston, vaccine appointments are done online. So having access to the internet in the modern world isn't a luxury, it is a necessity.

And you know, access to affordable, high-speed internet isn't universal. That is clear today. Whether it is due to the cost of the locally priced plans, lack of existing infrastructure, or digital literacy and skills gaps, so many Americans find themselves at a disadvantage when it comes to using the services that they need.

So, Ms. Chaney, in your testimony you mentioned that the adoption gap is three times larger than the availability gap. And I was wondering if you could talk a little bit about that a little bit more today, and how the affordability has kind of driven these dynamics.

Ms. CHANEY. Absolutely. So, I mean, so much conversation, we—most Americans understand that there is an availability gap in rural America, but many of them don't realize that their neighbors are—around them don't actually have access. That is because we see people on their phones. We see people being able to seemingly interact at a Starbucks or a library. The Latimer Plan talks a lot about libraries. As well as Ms. Ochillo, we believe they are heroes.

But when the pandemic happened, we realized just how important that is, but how inadequate that is. Most of us—I am looking around—are at home. We are at home, I am at home. And so, if you—we are able to do our work from home. My mother is in the other room. My stepson is in his room, doing his homework. My husband is in our bedroom, doing his work. We are all here together. If we didn't have that, we wouldn't be able to keep up with our work responsibilities. We couldn't be able to get a little side hustle, if you are retired and you want to do a little work. We couldn't be able to manage the responsibilities of child care and elder care while being at home. We wouldn't be able to do any of the things that we are doing here.

So we know that, for the vast majority of Americans, numerically and disproportionately, those are Black and Brown people. And so—and they are also very poor Asian-American people who have no access.

Someone wanted to talk to health earlier today, and I haven't talked about it enough, so I want to raise it here. In terms of language access, the ability to access telehealth means that, if you are a person who is having a difficult time finding a person who speaks your language in your community that you can get healthcare from, it means that through telehealth you may have a service that has a translation service. You may be able to find someone in another community that you could not reach who might be able to help you. The innovations are endless, and they will only grow.

So many people care about competition and innovation and the importance of industry. That will only grow on the other side of this pandemic as we find new ways to meet our modern needs with what we have discovered about being able to be online and be home and to be able to take care of the things we need. So very important, three times as much.

So, you know, we don't have to have an equal response, but we want to have an equitable response, which means we absolutely must address affordability and digital readiness.

Mrs. FLETCHER. Well, thank you, Ms. Chaney. I appreciate that. And I definitely agree with the shout-out to the librarians and to the libraries. They are such important hubs across our communities. So I agree with that, and also with the importance of connecting people and the opportunities that access—for example, in telehealth—to finding people to connect with that can really address particular needs is so important.

So I want to ask, with the time that I have left, which is getting shorter by the second, but with this Emergency Broadband Benefit rolling out this month, what is the best thing that we can do? And maybe I will direct this to Ms. Ochillo.

What is the best thing we can do to sustain the momentum that the Congress has created right now to expand adoption and in collaboration?

And we have had some discussion of whether the EBB should be made permanent. Maybe you could just weigh in on that with the few seconds left.

Ms. OCHILLO. Thank you for the question. And we need to make sure that people who are eligible find out about the program. So often we set up these really high expectations for these programs, and then we don't tell anybody about them. And I think there is this assumption in Washington, DC, that people in other places actually know what happens here. So it is incumbent upon all of us to make sure that people not only find out about it but that we educate State and local leaders, who we need as partners in this endeavor.

Mrs. FLETCHER. Right. Well, thank you so much. And I have gone over my time, so, Mr. Chairman, I yield back. Thank you so much.

[Pause.]

Mr. DOYLE. Oh, I am sorry, the gentlelady has yielded back.

I think we have called on all members of the subcommittee, so now we have some Members that have waived on. And I think first in line to waive on is Mr. Pence from Indiana. Is Mr. Pence available?

Mr. PENCE. Yes. Thank you, Chair Doyle.

Mr. DOYLE. You are recognized for 5 minutes.

Mr. PENCE. Thank you, Chair Doyle and Ranking Member Latta, for holding this important hearing today. And thank you to the witnesses for appearing before the committee.

For rural districts like the one I represent in southern Indiana, the pandemic highlighted a clear division of opportunity that exists between rural communities and our urban counterparts. There is no doubt that each of us here have heard stories of students sitting outside restaurants or gas stations to access Wi-Fi to participate in remote learning when their classrooms were closed.

Unfortunately, that was nothing new for Hoosiers living in my rural communities. In my district, even before the pandemic hit, I knew students that would drive to the local McDonald's just to complete their homework because the broadband connection to their home was unavailable. This situation was not because their family didn't want to adopt internet service, but because there was no service provider in their area.

Just the other week, I had an opportunity to sit down with both Hancock Regional Hospital and NineStar Connect, a rural broadband provider in Greenfield, Indiana. Together, this team made extraordinary strides in making broadband connections to unserved areas to make sure the community had access to telehealth services. As a result, physicians at Hancock Regional were able to develop a portable camera system for COVID-19-infected patients to connect with infectious disease experts located at neighboring hospitals systems. This application is just one example of how telehealth is a wave of the future for rural patients often living several hours away from healthcare services.

As telehealth became more critical during the pandemic, more and more physicians found that they could operate in the same fashion as in-person visits for prescreening, post-follow-up, or rehabilitation services, just to name a few. However, these innovative techniques will only get us so far without reliable access to a broadband connection.

Rural internet providers in my district, like New Lisbon Broadband Company, Smithville Communications, and Decatur RAMC, are community institutions on the front line of closing the digital divide. Our efforts should be focused on leveraging their expertise with Federal resources to more efficiently deploy infrastructure into remote and unserved populations. Rural patients, seniors, veterans, and other unserved, vulnerable communities need to be our first priority when we talk about broadband equity.

Mr. Ford, I am concerned policies being pushed by the majority will shift the Federal attention away from areas that are completely unserved, and towards areas that are looking for faster speeds. Before we talk about 100 symmetrical upload and download, let's figure out how to connect the remote parts of our country that have been living on the wrong side of the digital divide.

My question: How could proposals like the Democrats' LIFT America Act and President Biden's infrastructure plans lead to unintended consequences and exasperate the digital divide in rural America?

And, in contrast, how would focusing finite resources on unserved rural Americans help bridge the broadband adoption gap?

Dr. FORD. Well, I think you made the point pretty clearly. You are going to distract attention. And there are limited resources for building network in this country. It is not like you can just go get anybody in the world to string fiber. I mean, those resources will get redirected to urban areas that may be more profitable to upgrade than rural areas that may be very expensive to deploy to.

I think the point of my testimony is to focus on the problem, and that problem is getting broadband where it is not, you know, and addressing the people that don't have it, or don't buy it that do have access to it, and forget about the rest, because you have got to prioritize where you are going to focus your attention and you are going to focus your dollars, unless there is just an infinite sum of money available. And these days I am starting to wonder if that is the way people think about it.

Mr. DOYLE. The gentleman's time is expired.

Mr. PENCE. I yield.

Mr. DOYLE. OK, let's see who is next on the waive-in list. Ah, the gentlelady from Michigan.

Mrs. Dingell, you are recognized for 5 minutes.

Mrs. DINGELL. Thank you, Chairman Doyle, and thanks for holding this very important hearing, and thank you to everybody who is testifying today.

We have talked at length in this committee about how the COVID-19 pandemic has highlighted the inequalities in broadband access—to my colleague from Indiana, yes, both rural and urban. I think we all experience that, it doesn't matter whose district it is. And it has underscored the dramatic disparities in access.

These services are an essential utility. And as such, every American has a right to quality, affordable broadband. Now we have got to put those words into action, and I look forward to discussing what we do, as Congress, to achieve that goal.

Ms. Ochillo, in your testimony you briefly discuss the need to hold providers accountable for serving whole communities to combat digital redlining. Are there incentives or guardrails that can be put in place to achieve this goal?

And how do we ensure that subsequent expansions in affordable broadband to areas that these companies may not view as profitable do not come at the expense of significant compromises in quality or affordability to the consumer?

Ms. OCHILLO. Well, thank you for that question, and I will try and take it in two parts, quickly.

In terms of what can the Federal Government do to actually implement guardrails, that is something that we can actually put conditions on Federal funds. That is something that, even if we say, moving forward, money that is going out the door must be able—like, local officials should be able to enforce you going to the entire area, not just picking and choosing which parts of the areas are most profitable.

To your question about what guardrails are in place right now: very little. You know, looking, like, historically over the past at least decade, local officials have less and less power when it comes to enforcing providers that are in their network, in their district. So the thing is, it makes it very, very difficult when they have very little regulatory teeth to actually say, “No, you can’t stop at this neighborhood, you need to go to the entire neighborhood.”

And so I think that, more than anything, we need to really rethink how are we empowering local officials to do the enforcement actions that maybe isn’t happening all the time at the Federal level.

Mrs. DINGELL. Mr. Lewis, do you have any comments to add to that?

Mr. LEWIS. Not many. I agree, I think rules can be done at both the local and the Federal level to make sure that there are requirements to serve everyone in a service area. We used to have them. Let’s remember that. And the networks that broadband was built on top of, the old cable and the old telecom networks, had build-out requirements, either at the local level with franchise agreements or at the FCC for telecom networks, for phone networks. And they have been rolled back over the years. So we have been successful at this in the past, and we can learn from those lessons.

Mrs. DINGELL. So I would like to pivot briefly to discuss digital literacy. Mr. Lewis, can you briefly elaborate on how promoting digital literacy is critical for our future workforce needs?

And if Congress neglects to make a robust investment in broadband access and digital literacy skills now, do you foresee any potential long-term consequences for our workforce, our communities, and our economy?

Mr. LEWIS. It is extremely important. We need to make sure that not only are we giving folks the broadband that they need but that they are prepared to use it in a way that is helpful to them and their communities’ economic development. Digital literacy training

can not only help with basic skills of using the technology but also in how to use it in a way that can promote new businesses, entrepreneurship outside of your community.

This is why we support the idea of the Digital—the Equity Act that—I think it is called the Digital Equity Act—that promotes, you know, communities making digital equity plans to help do this work in your community, and specific to your community.

Mrs. DINGELL. Ms. Ochillo and Ms. Chaney, I have got less than a minute left. Do either of you want to comment on that?

Ms. CHANEY. I will just jump in to say we also—the National Urban League also supports the Digital Equity Act, as well as members of the Leadership Conference on Civil Rights, and others. And we support making sure that we have digital navigators and investment in that program to make sure we meet people where we are.

The only thing I would also mention is we have to make sure people even know how they would use the internet. And I think that is actually maybe a problem of yesteryear, literally, than it is right now. I think all Americans, including many older Americans, understand the benefits of broadband, whether they are able to access their church services in a way that they weren't before. People who were once sick and shut in are now able to have community with people. I think that's ways and discoveries that—again, I think there is a lot we need to be learning now about where people are instead of judging where they might have been before.

But absolutely, we have to make people aware of the benefits of it. And I have no doubt that—I have never heard of anyone not wanting it. It is usually that they cannot afford it or don't have it available to them.

Mr. DOYLE. OK, the gentlelady's time has expired. I see Mr. Schrader is back.

So, Kurt, I am going to recognize you for 5 minutes.

Mr. SCHRADER. Great. Thank you, Mr. Chairman. Sorry. Like everybody else here, we are multitasking today, and I enjoyed this hearing. This is a pretty critical here. And I would like to ask a couple of basic questions, if I may, right off the bat, maybe Ms. Ochillo to start with and then Mr. Lewis.

What is the basic level of service? Right now we are using the 25/3 to—the idea being that that is adequate to make sure we can have access to schools, access to healthcare, good business access to conduct business. Do you agree that that is an adequate basic level of service?

Ms. OCHILLO. No, and I just want to say that we talk to local officials on a regular basis, and one thing that unanimously comes up is that 25/3 service, while it might be enough—it might have been enough before the pandemic, when we essentially had more than one individual using the same networks and essentially needing to actually tax those lines, it wasn't enough.

So we need to actually revisit whether or not the 25/3 benchmark even makes sense and why we keep sending Federal money out the door. Public funds and networks that are not going to be adequate 5 years from now—we need to be forward-thinking about what is not only the service that we need right now, but what is the service that we need 5 and 10 years from now.

Mr. SCHRADER. Mr. Lewis, same question.

Mr. LEWIS. I agree, 25/3 is not enough. As the uses of the internet have changed over time, so has the standard for what kind of broadband is needed. So while 25/3 may serve one person well in streaming, you know, their favorite TV shows, it does not serve a family of four who are doing real-time video conferencing while their student is doing online education supplements.

And so this is why, you know, thinking about the upload speed is also very important. It is why you hear the talk about symmetrical, because the more real-time video that we are doing, the more the upload speed becomes important.

Mr. SCHRADER. Is there a speed you guys would recommend, a minimum speed, based on what we learned?

Mr. LEWIS. We have been promoting the idea of going at least 100; 100/100 symmetrical would be great, but I understand, you know, folks don't feel like that upload speed is necessary yet. But we are getting to that point.

Mr. SCHRADER. What about—

Ms. OCHILLO. Next Century—

Ms. SCHRIER. Go ahead.

Ms. OCHILLO. I said Next Century Cities supports increasing it, as well. However, it is not to the exclusion where we think that unserved communities shouldn't get service until they can get there. What we are looking for is that people can upgrade their service, and some people might need to start at 25/3.

Mr. SCHRADER. OK, OK.

Ms. CHANEY. Urban League agrees.

Mr. SCHRADER. What about the access—OK, thank you, Ms. Chaney.

Ms. Chaney, what about the subsidies? I mean, there has been some suggestion here today that, you know, a lot of these companies already give a 10-to-20-dollar subsidy for low-income folks in the city and in rural communities. Is that enough of a subsidy to get people to sign on?

Ms. CHANEY. Well, I mean, I guess we will find out, right?

I mean, so part of what we know is that, for many, they are not going to be able to afford even that. And it will be a barrier to them making the choice to actually endeavor to do it. There are some people who are so poor that these are things that they are making decisions about. What can they sustainably get on? Is it worth investing all of the time to get on and learn, if they think it is not going to be permanent for them? So, yes.

Mr. SCHRADER. OK—

Ms. CHANEY. Not the best answer, but yes.

Mr. SCHRADER. All right.

Mr. Ford, you talked about targeted and untargeted subsidies. I tend to agree that we should target subsidies if we are going to use Federal assistance for low-income folks, not just for their access but to make sure they can maintain the service. What are the targeted subsidies you think that would be worthwhile?

Dr. FORD. Well, I think, in terms of targeting—and, you know—process to design a subsidy scheme, but they should be targeted to the sorts of people who are having affordability problems and no one else.

And likewise, the subsidy dollars for expansion should be targeted to areas that don't have broadband today.

That is—those two things, I think, from my understanding of what this hearing is about, are at the top of the list of problems that we see: a lack of access and the lack of affordability. So targeting to those two things is going to be the most important thing.

Mr. SCHRADER. OK, OK, well, I would agree with that.

We have got our work cut out for us, Mr. Chairman, and I really appreciate the opportunity to have that hearing, and I will yield back my remaining 20 seconds.

Mr. DOYLE. I thank you, Mr. Schrader. I see Mr. Cárdenas is back with us too.

So Tony, you are recognized for 5 minutes.

Mr. CÁRDENAS. Thank you very much. I took the committee to downtown Los Angeles and back, and we are still going strong here. So thank you for putting me back in the queue, Mr. Chairman, and thank you for having this hearing. Also to the ranking member as well.

A lot has been covered today, but I want to reemphasize that, when we are talking about access, for example, one UCLA study estimated that 29 percent of Hispanic students and 27 percent of Black students didn't always have internet last fall. We are talking last fall, in the middle of a pandemic, where almost every student in America found out that they couldn't go to school and they had to figure out how am I going to learn, and they had to do it online.

But I don't—I want to also point out this, that that same study mentioned that 20 percent of White students didn't have access to internet. So I want to emphasize that, because a lot of people think that some of us are in Congress and only representing one community. I believe that every Republican and every Democrat does believe in their heart that we represent everybody. So when I speak about students not having access, it breaks my heart to know that kids who look like me are disproportionately not accessing it, meaning that they are less likely to get the education that they deserve—and we need to provide for them—than their White counterparts. But the White kids are suffering as well. And I just wanted to point that out.

Eligible households will receive up to \$50 a month toward their broadband service, and even a one-time discount of up to \$100 to purchase a laptop, desktop computer, or tablet from participating internet service providers if, in fact, my good colleague, Mr. Marc Veasey—with his leadership, his bill, the Federal Communications—will provide that through the Federal Communications Commission, if his bill were to pass. I just wanted to point that out. That will go a long way for the families of every color and students of every color across America, especially rural America, where that last mile is just not happening with the private sector.

In fact, this Friday I will be holding a virtual roundtable and briefing for community partners and leaders in my district to talk about this incredible benefit. And I thank Acting FCC Chairwoman Jessica Rosenworcel and her team for taking the time to participate in it and to talk about this important program and how crucial it will be for everyone to work together to get the word out to

communities across the San Fernando Valley and across this country.

I am also aware that internet service providers have done their part and really stepped up during this pandemic. I just want to give a shout out to an exception—not the rule, unfortunately—where Charter Communications had announced that they are moving every single employee up to \$20 an hour. They are not waiting for the Federal Government to get the \$15-an-hour minimum wage—where it should be—they are stepping up.

But like I said, that is an exception. Those kinds of efforts, coupled with Emergency Broadband Benefit, will surely make a significant dent when it comes to the challenges of affordability and adoption for low-income individuals of all colors and all communities. But that is not enough.

Ms. Chaney, can you please elaborate on the need for making the Emergency Broadband Benefit a permanent, sustainable solution for low-income households and households of color?

Ms. CHANEY. Oh, absolutely. I mean, first of all, let me acknowledge that the importance of what Charter did also means that people are having greater access to economic opportunity, which is also important for the Urban League.

Let me say—echo what all of us have said. We need to make sure that, at the end of this pandemic, at the end of this emergency—God, we can't wait for that to happen—that people aren't—that we are not reverting back, that we are not squandering the lessons that we have learned and, frankly, squandering the benefit of such an investment in an emergency broadband program. You invest in all of it and then you just drop it, and people go back to where they were before. That is not, you know, a great idea.

We want to make sure that there is an emergency—there is a long-term, permanent broadband program, but also that it is sustainable, right? So we want to look at sustainable ways for funding it and we want to make sure that it is continually renewed and reviewed, so that we make sure that the products that people are receiving are actually ones that meet their current need.

So we want to keep improving the program, but it is very important that it be extended.

Mr. CÁRDENAS. Thank you, Ms. Chaney. My time is short, so I just want to point something out, as well, that I believe does need to be pointed out.

Unfortunately, when people in America think about the government spending money to help those who are less advantaged to get to where they need to be, I just want to remind everybody, 6 in 10 people in America who are on Social Security are White. Six in 10 people in America who benefit from public funds going to help them have a life of dignity are White. So it is unfortunate that, in committees like this, we have to emphasize that, unfortunately, the people who are disproportionately disadvantaged happen to be people of color.

But I just wanted to point that out, that what we are doing here today is going to benefit every American, regardless of their background, regardless of whether it is rural or big city or what have you, and that 6 in 10 people who benefit when we make these good decisions are White. Thank you so much.

Mr. DOYLE. The gentleman's time has expired. OK, back to the waive-on list.

Ah, from the great and powerful State of Delaware, the gentlelady, Ms. Lisa Blunt Rochester, you are recognized for 5 minutes, although I would say Pennsylvania has a claim to the president too. But Lisa, 5 minutes is yours.

Ms. BLUNT ROCHESTER. Thank you so much, Mr. Chairman. And we are small but mighty little Delaware. And thank you so much, Ranking Member Latta, for calling this hearing. And thank you to the witnesses.

This hearing is vital. In the wake of a pandemic, we have seen a phenomenal growth in telework, telehealth, distance learning, and the urgent need for digital literacy. And as the cochair of the bipartisan Future Work Caucus and a member of Majority Whip Clyburn's Rural Broadband Task Force, I know that in order for us to leave no one behind, we must meet the goals of bridging the digital divide, ensuring that America can compete globally and that our citizens can live, learn, and earn. Ultimately, we must ensure that high-quality broadband is truly accessible for all.

And according to Delaware officials across our small but mighty State, our rural, urban, suburban, and coastal communities, when it comes to broadband, access—affordability is a much larger issue for us than even the broadband infrastructure. That is why I joined my good friend Mr. Veasey of Texas in advocating for Emergency Broadband Connections Act inclusion in the December COVID bill, which created the Emergency Broadband Benefit.

And I want to announce to any Members who are still on and to all of our constituents that the EBB enrollment will begin May 12th. So please spread the word.

And now I am proud to colead with Mr. Veasey the Enhanced Emergency Broadband Act, because all households need reliable, affordable access to the internet. Our bill would provide \$6 billion to make the Emergency Broadband Benefit even more accessible to more low-income households. In Delaware, by providing additional full coverage subsidies, more low-wealth households can access the internet and potentially incentivize companies to invest in these communities.

And my first question is, Ms. Chaney, if you could, just briefly, briefly tell how might programs like the Emergency Broadband Benefit incentivize more providers to serve low-income areas that are currently underserved.

Ms. CHANEY. Absolutely. I mean, I think that, as we see people getting online and we see people utilizing and we see the competition and the competitiveness that will come out of that, I think that we will have more providers who are interested in investing here and investing long term. And if they know that it is not something that is going to be a flash in the pan, it is something that is permanent, we will see that growth there. I think that, you know, the market will definitely work there.

Ms. BLUNT ROCHESTER. Thank you so much.

We know also that a significant part of the affordability—the crisis is really about the competition among providers. And unfortunately, in cities like Wilmington, Delaware, and some of our rural communities like Harrington, we just see that there is not enough

competition, which keeps the prices high. I was hoping that—Mr. Lewis, can you discuss the relationship between digital redlining and competition?

And aside from reducing cost, in what ways can people benefit from having increased competition among providers in their area?

Mr. LEWIS. Sure, Ms. Rochester. Where we see little competition I think we are more likely to see digital redlining, where a company may choose not to serve or—sometimes digital redlining isn't just that they choose not to serve a neighborhood, but they simply don't upgrade the infrastructure there to get the newer, high-quality broadband speeds and reliable networks. So competition, hopefully, will drive them to want to serve those areas in order to get the subscribers that are there. This is happening in urban and rural communities and Tribal communities.

But it is really sad when it happens—when it happens in urban communities, where there is the density but simply not the value placed on those specific neighborhoods.

Ms. BLUNT ROCHESTER. Great, thank you. And in preparing for today's hearing, my staff was really unable to gather sufficient data on broadband access because the information is not made public. I am proud to have supported the Broadband Data Act to require the FCC to reform their existing broadband deployment maps. But we also need more public data on broadband pricing speeds and adoption.

Ms. OCHILLO, in your testimony you stress the need for better and more data as we work together to address the digital divide. Can you talk about why it is crucial to have this data and—for sustainable solutions?

Ms. OCHILLO. Well, I was actually just looking—I had something on my desk this morning, because I pulled Delaware's statistics as I was just thinking about some things, and you would be surprised to find out that the FCC says that 96 percent of rural Delaware residents have 25/3 access in their area, which would surprise the local officials there.

And so I think that it is important for us to really confront some of these numbers. When we have the Federal Government saying, "Oh, 96 percent of your area is served, everything is fine," and then you get down to either their town hall meeting, maybe you talk to a county commissioner and they are saying, "No, that is way off," I think we need to find out what is happening in that disconnect.

And it is not enough for us to say, in theory, we need to improve data. It is enough—we need to actually get it done. And so we keep talking about possibly, you know, maybe we could add pricing and, you know, hopefully, they will get more granular and, hopefully, they will actually adopt our suggestions to be able to correct their information. But we need to get all of those things done now. And then we need to actually supplement it with the information that is being generated at the local and State level. Otherwise, we are going to keep spending money that we can't target.

Ms. BLUNT ROCHESTER. Thank you so much. My time has expired.

And thank you so much, Mr. Chairman. I appreciate it.

Mr. DOYLE. I thank the gentlelady. Last, but certainly not least—and I want to thank her for her patience—from the great State of Washington, Dr. Schrier, you are closing up the hearing.

Ms. SCHRIER. I am honored. Well, thank you, Mr. Chairman. And thank you to our witnesses. Thank you for holding this hearing on a really important issue which has taken on even more urgency and attention during this pandemic.

Sometimes it sort of takes that in order for everybody to pay attention, because access to broadband now translates directly to access to education and jobs and telehealth. And while this has touched all populations, it is so much tougher to address for rural America because there are areas where there simply is no access. And it isn't just a matter of affordability for an individual family or business.

My State of Washington is laser-focused on expanding broadband connectivity, and recently our State passed a bill that—by State Representative Ybarra, opening up retail services to our public utility districts. And for those who don't know, public utility districts are unique to Washington and Oregon, and the mid-Columbia PUD networks currently provide broadband access to about 70 percent of the population in central and eastern Washington, which is mostly rural and traditionally underserved.

But we still have a lot of work to do. In Washington State, for example, we see strong availability in our urban areas, but access to robust connectivity fades really quickly when you go to suburban and then really dramatically to rural regions. And it doesn't even stop there. Very few of our 29 recognized Tribes in Washington have access to adequate broadband. So Tribal communities, they have been historically underserved, and it continues, and that is why it is so important to have provisions like 500 million going straight to the Tribes in the LIFT Act.

Now, we also know that partnerships are vital, and the people closest to the problem also have the best solutions. And I will be introducing legislation to create a year-long, competitive grant program available to establish State broadband offices, with the goal of creating public-private partnerships to expand broadband connectivity. And these partnerships can find really creative ideas for broadband deployment and to close those gaps where the private investment alone, it just will never pencil out.

So the hope is that great ideas imagined and implemented by really smart State broadband offices partnering with private industry could then be replicated and scaled up elsewhere in the country.

So Ms. Ochillo, I wanted to ask of you, in your testimony you noted public-private partnerships are key to innovation and creativity, and that can get broadband to more remote areas. And it has certainly worked well in Washington State with one last year between Starlink and our State broadband office bringing connectivity to the Hoh Tribe. I was wondering if you could just give some examples from your own experience of public-private partnerships yielding new innovation for better connectivity.

Ms. OCHILLO. Well, I think that they have been in lots of different States. And one thing that you mentioned about the State

broadband office, some of the idea-sharing that happens in those offices is the most important thing that can happen.

Look at the State of Colorado. Look at the State of Minnesota, Georgia, just recently in New Mexico. When you have—and even in your State, Washington, you have a great State broadband officer who just added a—is adding a digital equity officer. I think that it is really important for us to have a place for local officials who are looking for ideas to actually go for direction.

And then also, for ISPs that are looking to expand, they go to State broadband officers to say, “Who were the best partners?” So it is really important to have that place where they can actually intersect, where you have an ISP who is saying, “We have got great ideas” and a local official who is saying, “I want you here,” where they can actually find out here are funding options, here are possibilities.

So those are things that are happening in lots of different States, especially yours.

Ms. SCHRIER. Yes, I have been so pleased with our State broadband office because, when we talk about private industry doing this, what they find is that what they do is end up just putting faster fiber to areas that already have access instead of going those extra miles to get people who don’t have any access. And it really—it is, like—it is investments there where private industry won’t do it. It just doesn’t make sense with dollars and cents. But that is where we step in and say no, if we want to get this to rural America, just like we did with electricity, this is where we invest.

So thank you very much, and I really appreciate that. I yield back the rest of my time.

Mr. CÁRDENAS. This is Cárdenas. Will you yield?

Ms. SCHRIER. I would be happy to yield.

Mr. CÁRDENAS. Is that OK, Mr. Chairman?

Mr. DOYLE. I guess so.

[Laughter.]

Mr. CÁRDENAS. Mr. Chairman, I just wanted to take an opportunity on her time to say thank you for having this hearing, and what a closer. That public-private partnership needed to be expanded upon in this committee. And that is how you get things done.

And Utah, try it again the right way.

Thank you, I yield back.

Mr. DOYLE. You take all the time you need, Tony.

Well, I want to thank all of our witnesses for their participation today. Your opening statements, your answering the questions of all these Members, we really appreciate it.

I need now to request unanimous consent to enter the following records—documents into the record: a letter from a group of 40 undersigned business associations and corporations in support of a long-term broadband benefit program; a study from the Information Technology and Innovation Foundation; a letter from Asian Americans Advancing Justice, Asian Pacific Advocates, and National Council of Asian Pacific Americans; op-ed in the Austin American-Statesman by Angela Siefer, executive director of the National Digital Inclusion Alliance; a report from the Benton Institute for Broadband & Society by John B. Horrigan; a study from the

Technology Policy Institute entitled “Does Competition Between Cable and Fiber Increase Adoption?” by Scott Wallsten; a letter from the Electronic Frontier Foundation; a letter from the National Digital Inclusion Alliance; a letter from the Healthcare Leadership Council; a letter from Western Governors Association; a letter from the Leadership Conference on Civil and Human Rights; a letter from the Student Internet Equity Coalition; a letter from the National League of Cities; a study from Free Press entitled “Price Too High and Rising: The Facts about America’s Broadband Affordability Gap” by S. Derek Turner; a white paper entitled “Broadband Build the Future” by Reimagine Appalachia; a policy proposal from the Student Internet Equity Coalition; a letter from the US Telecom–The Broadband Association; a report from the FCC submitted by Ranking Member Latta; a study entitled “2020 Broadband Pricing Index” by Arthur Menko, Telcodata and Business Planning, Incorporated; an article in The Brookings entitled “Broadband adoption is on the rise, but states can do much more” by Lara Fishbane and Adie Tomer; a study from the Phoenix Center for Advanced Legal and Economic Public Policy Studies entitled “OTI’s Cost of Connectivity 2020 Report: A Critical Review” by Dr. George S. Ford; a study from the Phoenix Center for Advanced Legal and Economic Public Policy Studies entitled “Subsidizing Broadband Price Relevance and the Digital Divide” by Dr. George S. Ford; a study by the Phoenix Center for Advanced Legal and Economic Public Policy Studies entitled “Are Broadband Prices Declining? A Look at the FCC’s Price Survey Data” by Dr. George S. Ford; a study from the Technology Policy Institute; a study from the Advanced Communications Law Policy Institute at the New York School of Law; a study from the Technology Policy Institute entitled “Increasing Low-Income Broadband Adoption through Private Incentives”; a letter from R Street Institute; and last but certainly not least, a letter from the Americans for Tax Reform.

So without objection, so ordered.

[The information appears at the conclusion of the hearing.¹]

Mr. DOYLE. I want to remind Members that, pursuant to committee rules, that they have 10 business days to submit additional questions for the record to be answered by the witnesses who have appeared. I would ask each witness to respond promptly to any such questions that you may receive.

And at this time, with my thanks and thanks to my ranking member, Mr. Latta, this committee is adjourned.

[Whereupon, at 2:45 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

¹The Free Press, Advanced Communications Law Policy, and March 2016 and July 2020 Technology Policy Institute studies, the “Reimagine Appalachia” paper, and the FCC report have been retained in committee files and are available at <https://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=112553>.

April 6, 2021

The Honorable Rosa DeLauro
Chairwoman
Appropriations Committee
U.S. House of Representatives
Washington, DC 20515

The Honorable Frank Pallone, Jr.
Chairman
Energy & Commerce Committee
U.S. House of Representatives
Washington, DC 20515

The Honorable Richard Neal
Chairman
Ways & Means Committee
U.S. House of Representatives
Washington, DC 20515

The Honorable Patrick Leahy
Chairman
Appropriations Committee
U.S. Senate
Washington, D.C. 20010

The Honorable Maria Cantwell
Chairwoman
Commerce, Science & Transportation
Committee
U.S. Senate
Washington, D.C. 20010

The Honorable Ron Wyden
Chairman
Finance Committee
U.S. Senate
Washington, D.C. 20010

The Honorable Kay Granger
Ranking Member
Appropriations Committee
U.S. House of Representatives
Washington, DC 20515

The Honorable Cathy McMorris Rodgers
Ranking Member
Energy & Commerce Committee
U.S. House of Representatives
Washington, DC 20515

The Honorable Kevin Brady
Ranking Member
Ways & Means Committee
U.S. House of Representatives
Washington, DC 20515

The Honorable Richard Shelby
Ranking Member
Appropriations Committee
U.S. Senate
Washington, D.C. 20010

The Honorable Roger Wicker
Ranking Member
Commerce, Science & Transportation
Committee
U.S. Senate
Washington, D.C. 20010

The Honorable Mike Crapo
Ranking member
Finance Committee
U.S. Senate
Washington, D.C. 20010

Dear Chairwomen, Chairmen, and Ranking members,

The COVID-19 pandemic and related economic challenges have been a year-long study in the central role the internet now has in our daily lives. In March 2020, virtually overnight, much of our daily experience— jobs, health care, education, civics and connection to our family and

friends – shifted online. A year later, we as a country are working to forge a more equitable recovery and prepare the workforce for an increasingly competitive technology-driven global marketplace. Broadband internet access will be a significant key to unlocking the door to better education, improved healthcare, and higher-skilled jobs.

While there has been progress to close the digital divide, it is clear that more needs to be done. Today, there continue to be multiple barriers to broadband connectivity, resulting in far too many people who still lack internet service. Some don't have access to broadband networks, some cannot afford broadband services, devices or equipment and still others lack the digital literacy skills necessary to make use of them. Approximately 10-15 million students don't have broadband at home. People with disabilities are 20% less likely to be connected to broadband at home or have the technology to go online than people without disabilities. Forty percent of seniors don't have residential service sufficient to meet with their doctors for telemedicine appointments, which have increasingly taken on life-and-death importance. And the numbers are even worse for people of color and indigenous peoples. The digital divide is real. To strengthen our families, our communities and our nation, we must recommit to the bipartisan goal of connecting all Americans to broadband internet service.

America has never shied away from big goals. We put a man on the moon, eradicated polio, and declared a war against cancer because they were national priorities of the 20th century. Closing the digital divide must be a national priority for the 21st century.

While research suggests there are several, often interrelated barriers to broadband adoption, we know one of the primary barriers is that too many people cannot afford broadband service and equipment. Efforts by broadband providers to connect low-income Americans through discounted offerings have succeeded in connecting millions of people, but again more needs to be done. The federal government has never adopted a robust, permanent, and coordinated program to help more people get connected to broadband. And while Congress should be commended for allocating funding to build out broadband in rural America – a job that needs to continue until complete – addressing the rural broadband challenge is only part of the solution.

Congress should comprehensively address the affordability challenge facing low-income Americans. Existing programs aren't sufficient. The current Lifeline program has been effective at helping people to adopt and maintain telephone service, and it has served as an important safety net to help provide millions with access to broadband. But, the \$9.25 per month it provides cannot facilitate the kind of swift and substantial shift of millions of low-income Americans to broadband that this moment requires. The new Emergency Broadband Benefit (EBB) passed in December to help economically vulnerable families stay connected during COVID-19 was an important first step. But it is a temporary program designed for the pandemic and is not a long-term approach.

It's time for Congress to adopt a long-term federally-funded broadband benefit program that the FCC would manage and administer to provide low income individuals with enhanced financial support for broadband long after the pandemic ends. This new program should provide consumers with a higher benefit than the current \$9.25 available from Lifeline. It should use simplified, safe, and streamlined payment systems to encourage full participation, with benefits delivered directly to consumers. The new program's requirements for broadband providers must be simple and straight-forward. The program should also empower consumers by allowing them maximum choice in service offerings. The new program should also remove the current requirement that service providers must become Eligible Telecom Carriers to participate in the program, which unnecessarily limits carrier participation – and therefore competition and consumer choice – in the provision of broadband services to low-income communities.

To make sure this program works and has staying power, it has to have predictable, dependable and consistent funding. And that requires that it be codified and funded by Congress through mandatory directed spending as other entitlement programs are, rather than being subjected to the vagaries of the annual, discretionary appropriations process. Additionally, Congress could explore other supplemental funding sources such as proceeds from spectrum auctions. A predictable, dependable, long-term, broadband benefit program would help ensure that all people across the nation are connected.

Finally, because affordability is only one of the barriers, we have to renew our commitment to a national plan for digital literacy and skills development. To this end, as with the long term benefit program described above, Congress should support grant programs to empower state and local governments, school districts, and community nonprofits to pilot and scale effective outreach to under-resourced communities and multilingual digital literacy training programs. A decade of experience from digital inclusion programs shows that these front-line local organizations are highly effective at helping people gain the skills, comfort, and confidence they need to join the digital community. We need to give these digital inclusion programs more resources to tackle the numerous intangible barriers that keep too many from adopting broadband.

The undersigned stand ready to work in collaboration with policy makers to reimagine and reassess how to make sure low-income Americans are not left on the wrong side of the digital divide. Together, a long-term broadband benefit program and a renewed commitment to digital literacy training will help ensure that the economic prosperity that emerges out of this recovery is more dynamic, more equitable, and more accessible to every American. We respectfully ask you to create a predictable, sustainable, long-term broadband subsidy to ensure all people are empowered to fully share in the possibilities and opportunities that come with access to the internet.

Sincerely,

ACA Connects – America’s Communications Association
 African American Mayors Association (AAMA)
 American Association of People with Disabilities (AAPD)
 Asian Americans Advancing Justice (AAJC)
 Asian/Pacific Islander American Chamber of Commerce & Entrepreneurship
 AT&T
 Balm in Gilead
 Benton Institute for Broadband & Society
 Black Women’s Roundtable
 Business Forward
 Charter
 Code for America
 Comcast
 Doctor On Demand
 Eaton
 eHealth Initiative
 Grubhub
 Healthcare Information & Management Systems Society
 United States Hispanic Chamber of Commerce
 Kapor Center
 League of United Latin American Citizens (LULAC)
 The Latino Coalition
 LGBT Tech
 MANA, A National Latina Organization
 Multicultural Media, Telecom and Internet Council (MMTC)
 National Action Network (NAN)
 National Association for the Advancement of Colored People (NAACP)
 National Black Caucus of State Legislators (NBCSL)
 National Coalition on Black Civic Participation
 National Conference of Black Churches
 National Consumers League
 National Council of Asian Pacific Americans (NCAPA)
 National Digital Inclusion Alliance (NDIA)
 National Grange
 National Hispanic Caucus of State Legislators
 National Hispanic Media Coalition (NHMC)
 National LGBT Chamber of Commerce (NGLCC)
 National Organization of Black Elected Legislative Women (N.O.B.E.L. Women)
 National Urban League (NUL)
 One Economy
 Personal Connected Health Alliance
 ServiceNow

T-Mobile USA
Third Way
UnidosUS
U.S. Black Chambers
US Cellular
US Distance Learning Associates
Verizon

Broadband Myths: Are High Broadband Prices Holding Back Adoption?

DOUG BRAKE AND ALEXANDRA BRUER | FEBRUARY 2021

Broadband affordability is a problem for some Americans, but not the “crisis” advocates claim. U.S. broadband prices are comparable with those charged abroad and by municipal networks. To ensure affordability for everyone, we need a better subsidy program, not changes to industry structure.

KEY TAKEAWAYS

- Municipal broadband prices are not substantially different from private ISPs' broadband prices. After accounting for associated costs, private entry-level broadband plans are comparable to, if not more affordable than, municipal broadband.
- U.S. entry-level broadband rates are also comparable with prices in peer nations. Studies focused on advertised prices often fail to account for average income. Normalizing the data demonstrates America's competitive rates.
- Affordability is only part of the adoption problem in America's digital divide. Digital literacy, device costs, and other barriers also hamper adoption. So, to get more people online, policymakers need to avoid affordability tunnel vision.
- Congress should provide flexible subsidies directly to low-income users rather than attempt large changes to industry structure. Policymakers also should incorporate automatic stabilizers to surge broadband benefits during economic downturns.

INTRODUCTION

The COVID-19 pandemic has brought new attention to the long-standing problem of societal disparities in the adoption of fixed broadband Internet service. Near universal broadband adoption is a worthy policy objective: The United States and other countries around the world would be better off if everyone could access the Internet regardless of their income level. Unfortunately, myths and misconceptions around broadband affordability in the United States undermine productive efforts to get everyone online.

ITIF | Broadband Myth Series

Some advocates make ill-founded arguments that expensive broadband is to blame for the digital divide, in part to justify calls for wide-ranging changes in broadband policy and in the structure of the industry. But while affordability is indeed a barrier to broadband adoption for some Americans, the affordability problem is often overstated and presented as a silver bullet to “fix” broadband adoption. Wide-ranging interventions into the broadband system predicated on affordability concerns are not justified, especially when direct subsidies to low-income residents would be more effective.

BROADBAND ADOPTION BARRIERS MUST BE ADDRESSED

Fixed broadband does not suffer from Solow’s paradox. Economist Robert Solow famously asserted in 1987, “[you] can see the computer age everywhere but in the productivity statistics.”¹ While it took some time for the benefits of computers to show up in economic indicators, empirical economic literature has long recognized broadband as a clear boon to economic growth, productivity, and innovation. For example, UNESCO’s Broadband Commission for Digital Development has highlighted historical World Bank data, noting, “for high-income countries, a 10-percentage-point rise in broadband penetration adds a 1.21-percentage point rise in economic growth.”² For those already online, the benefits of broadband are obvious: access to information, entertainment, communication, education, employment opportunities, better access to health care, etc.

But importantly, the entire economy is better off as more people get online. Policymakers should be working toward a society where every business and government service can be organized and designed based on the assumption that all residents are online. Broadband is also a particularly important tool to counteract economic downturns. For example, researchers have found that young, unemployed individuals who use the Internet in their job searches have been re-employed about 25 percent faster than others using only traditional offline methods.³ Other studies have found that unemployed workers in households with broadband access are more likely to gain employment one month after losing it than those without access.⁴

The socio-economic benefits of broadband have become even more critical during the current pandemic. In a world where public health requires children to attend school remotely and millions of individuals to work from home, connectivity should be available to all. But if

policymakers are to succeed in narrowing the digital divide, it is important to understand the impediments standing in the way of that goal and how to effectively address them.

U.S. Broadband Pricing Is Relatively Comparable Between Municipal and Private Providers

Given the benefits of near-universal broadband adoption, it is critical to understand barriers to adoption. Some advocates of government-run or heavily regulated broadband networks argue that price is the key barrier preventing adoption and that prices are too high due to lack of competition, or even because for-profit companies provide the lion's share of broadband services. Without the profit motive, these advocates claim, municipal providers could offer much lower retail prices. But this does not appear to be the case.

Broadband prices are difficult to study. Different bundles of different performance tiers do not make for easy comparisons. How products are offered—what speed, whether there is a data cap, whether it is bundled with other advertising-supported services, etc.—can have a significant effect on the advertised price. Introductory rates that are often different from long-term subscription prices, subsidies for mobile devices purchased through service plans, and equipment rentals can all affect the price. As a result, studies attempting to compare broadband prices, especially between municipal and private providers, are often riddled with flaws. In reality, private U.S. providers typically offer entry-level prices that are competitive with municipal broadband. But unfortunately, this realization is often lost under the forage of skewed analysis.

Studies attempting to compare broadband prices, especially between municipal and private providers, are often riddled with flaws.

Some pricing studies stand out for their brazen methodological flaws, which give activists fodder to claim, as they often do, that Americans pay "some of the highest broadband prices in the world."⁵ For example, the "Cost of Connectivity" report published in 2014 by New America's Open Technology Institute (OTI) contains cherry-picked data that focuses on advertised prices without attempting to normalize for income or the costs of providing service.⁶ Methodological choices by OTI and others reveal that the likely aim of these reports is to make the prices of private providers look bad and municipal offerings over shared infrastructure look good.⁷

In one such specific instance, an OTI report held up the open-access municipal broadband of Ammon, Idaho as having the lowest prices the researchers found in the United States. However, the prices that the report used for providers using Ammon's city infrastructure explicitly did not include monthly fees charged by the city.⁸ The report summary lauded "advertised speeds [in Ammon] as low as \$9.99/month," yet deeper in the report the authors acknowledged this did not include monthly utility and construction fees charged by the municipality, which raised the cost to consumers by nearly \$40 per month—in line with rates charged by private competitors.⁹ Residents connecting to Ammon's fiber network also faced installations fees that, when paid upfront, came to \$3,200–\$3,600.¹⁰ In addition, because the infrastructure was provided through a government agency, the infrastructure provider doesn't pay any taxes or fees to city. In fact, the city has loaned more than \$1.1 million to the fiber agency at rock-bottom interest rates between 1.5 percent and 3 percent.¹¹

An Information Technology and Innovation Foundation (ITIF) review of Wilson, North Carolina's municipal broadband pricing (the second of five cities included in OTI's study that have municipal providers) indicates a similar methodological flaw.¹² Advertised prices used in the analysis were only offered for those who purchased multiple services from the provider.¹³ Moreover, when comparing affordability, excluding Ammon's municipal broadband (for reasons explained earlier), only one of the four other municipal broadband city providers offered a broadband package that cost \$50 or less—Wilson, North Carolina's Greenlight—which, as noted earlier, required bundling services to receive the advertised rate.¹⁴ By comparison, in each of the cities ITIF evaluated (to include cities with municipal broadband), there was at least one non-municipal provider that offered a broadband subscription at \$50 or less.¹⁵ This underscores that comparing prices requires an appropriate level of scrutiny. Especially when evaluating entry-level broadband prices, private Internet service providers offer competitive, if not lower, rates than municipal broadband providers.

While aspects of OTI's price studies are flawed, it does present some interesting data as to how prices change relative to broadband performance in different countries. The range of pricing is larger between different price plans in the United States than it is among most other international cities studied in the report. In the United States, low-end, slower broadband is cheap, while high-end faster options are relatively more expensive.¹⁶ While OTI might attempt to make hay of this by focusing on the prices of high-end plans, the important policy question when it comes to driving broadband adoption is the affordability of a basic broadband package that enables online work, study, and participation in society. In other words, U.S. broadband pricing is progressive, seeing slightly higher fees for faster services that are generally purchased by above-average income households and less expensive plans for slightly slower services that on average are bought more by below-average income households.

OTI's choice to exclude affordable offerings is strange when these Lifeline-supported and other low-income offerings like Comcast's Internet Essentials are a fraction of the prices charged by municipal broadband providers OTI studied.

Private Internet providers also offer low-priced services for qualifying low-income subscribers, either in tandem with the FCC's Lifeline low-income subsidy program or wholly separate from it. If policymakers are concerned with broadband affordability, these programs should be of great interest—because affordability is a question of lowest-cost prices offered, not average prices. After all, if affordability is a barrier to broadband adoption, it is entry-level, low-cost options that cost-conscious users will turn to. Yet OTI chooses not to include Lifeline-supported or private programs aimed at assisting qualifying low-income users, claiming there is not enough information available online. It is strange that, after performing so much research and analysis, OTI would draw the line at looking up the terms of low-cost offerings from major providers (most of which are available with a simple online search). OTI's choice is all the stranger when Lifeline-supported and other private low-income offerings like Comcast's Internet Essentials are a fraction of the prices charged by municipal broadband providers OTI studied.¹⁷

OTI also claims that “plans targeted at low-income consumers may offer poor value” because they are generally provide lower speeds. OTI's analysis focusing on dollar-per-Mbps is flawed, because additional speed is not evenly valued by consumers. Going from no broadband

connectivity at all to even a relatively low-speed connection is tremendously valuable, and the marginal value of higher broadband speed drops off quickly after the connection can provide basic functionality and stream video. As discussed in our earlier entry in this series, “Broadband Myths: Is It a National Imperative to Achieve Ultra-Fast Download Speeds?”, the added benefit of super-fast speed is marginal, so low-cost offerings often provide considerable value even if they are slow compared to super-fast offerings.¹⁸

Private-Sector Providers Are Better Positioned Than Municipalities to Affordably Serve Most American Households

Given the high capital intensity of building broadband networks, the retail price of broadband is tied to the cost of deployment. Deploying broadband always requires some degree of cooperation between private providers and municipal authorities. And sometimes outright municipally provided broadband can make sense, generally where there is no cable deployed and it is not economical to upgrade existing DSL networks. In those limited geographies, the positive externalities of providing broadband certainly outweigh the long-term drag on innovation that comes with government-provided broadband.¹⁹ But even in these situations, the answer doesn't have to be municipal ownership; it could be public-private partnerships where the local government works to reduce the costs of deploying more robust networks.

Where municipalities attempt to offer service in cities already served by multiple providers, they often find it difficult to gain sufficient market share to recoup their costs. This is especially true when a municipality is building redundant infrastructure that competes with incumbents. This is why prices offered by municipal broadband are roughly in line with private competitors' prices and also why many municipal providers face difficulty in repaying their bonds (an implicit subsidy for government broadband).²⁰

The fact that municipal broadband is not dramatically cheaper than those services offered by private providers is even more noteworthy, because most municipal broadband providers are “cherry pickers.” Municipal deployments generally serve relatively densely populated areas, which are cheaper to provide service to. Not only do they necessarily serve the municipalities in which they have jurisdiction, often municipal deployments will focus first on the lowest-cost, highest-return areas of a city to prioritize deployment. In contrast, nationwide private-sector providers serve most American households, even many that are expensive to serve because of low population density. Supplying additional infrastructure through municipal broadband is simply not a good tool to ensure broadband is affordable for everyone.

U.S. Broadband Pricing Is Also in Line With Rates Abroad

It is notoriously difficult to compare the prices of communications tools from country to country. For example, in the EU, it is especially difficult to account for the differences between the broadband speeds that are advertised to consumers at various prices and the speeds that are actually delivered. Historical data shows that Europe traditionally has had challenges making good on advertised speed promises when compared to broadband providers in the United States—and such comparisons are still likely to be inaccurate.²¹

Moreover, advocates seeking sweeping changes to the U.S. broadband system often cherry-pick data to paint a skewed picture that broadband is more affordable abroad than it is in the United

States. But the argument does not hold up as entry-level broadband pricing plans for U.S. users are not substantially out of line with prices consumers pay in other peer nations.

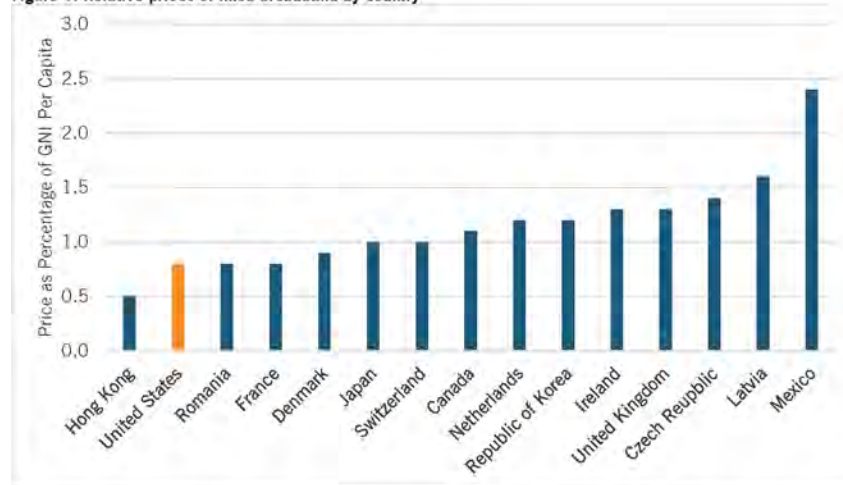
While there is no definitive international broadband pricing study, reputable sources put the United States on even footing with peer countries. The International Telecommunications Union (ITU) ranks the United States as tied for sixth place globally for affordability of fixed broadband prices as a percentage of gross national income (GNI) per capita, on par with France and Singapore.²² In fact, the ITU's *Measuring Digital Development* report has long ranked the United States favorably in terms of the affordability of lower-speed offerings.²³

Separately, the *Inclusive Internet Index for 2020*, a report developed by The Economist Intelligence Unit (EIU) for Facebook, highlights where the United States stands in comparison to 99 other countries when evaluating Internet availability, affordability, relevance, and readiness.²⁴ The United States ranks third overall, propelled by a first-place ranking in affordability. Importantly, the EIU index considers income and competition, which are omitted from other similar reports that focus narrowly on advertised prices.²⁵ Considering these additional factors puts the numbers in perspective: Even if two countries have the same average price for broadband, the price tells two completely different stories if it is 1 percent of the average income versus 10 percent of the average income.

The lack of pricing comparison relative to income is a noticeable flaw in other studies where the United States is ranked lower than peer countries. Studies such as the OTI's "Cost of Connectivity" simply compare advertised prices of broadband without controlling for purchasing power in different countries.²⁶ Of the OECD countries evaluated in the OTI's study (a total of 13, including the United States), all but one have annual average wages well below that of the United States (Switzerland is the exception).²⁷ Without factoring in average wages and purchasing power parity, it is difficult to compare the relative affordability of broadband prices. (See figure 1 for a comparison of prices based on GNI per capita.) Moreover, even if broadband prices are normalized for average wages, dollar denomination can still paint a misleading picture. In the event the U.S. dollar increases in value, which it has over the last decade, foreign broadband prices will look cheaper in comparison.

Data from the OECD illuminates another common flaw of international price comparisons.²⁸ Often, studies fail to account for the difference between bundled and unbundled services. While the OECD fixed-broadband basket for high-speed data puts the United States on the more expensive side of developed countries, the data does not rigidly control for different bandwidth offerings, making it difficult to accurately compare prices.²⁹ OECD price studies swing a fair bit from year to year due to the somewhat arbitrary methodology: The contractor performing the study simply picks advertised prices within a large range of offerings from companies that represent 70 percent market share.³⁰

The steeper price discrimination of broadband offerings in the United States means digital elites looking for higher-speed services may indeed face higher prices compared to some European countries. But again, if we are concerned with whether broadband is affordable, it makes sense to focus on making sure entry-level plans are affordable to all Americans before worrying about the price of the highest performance tiers. For entry-level speeds, OECD data puts U.S. broadband prices below or within two dollars of Iceland, Ireland, Luxembourg, New Zealand, Norway, Spain, and Switzerland—by no means outside the norm of peer countries.³¹

Figure 1: Relative prices of fixed broadband by country³²

Sadly, some countries do indeed face wildly expensive broadband prices, particularly landlocked countries in Africa.³³ Four of the five most expensive broadband packages are found in Africa—specifically, in Eritrea, Comoros, Ghana, and Mauritania—and all are well over a thousand U.S. dollars per month.³⁴ Assertions from activists that the United States has the most expensive broadband thus are completely false.

AFFORDABILITY IS ONLY ONE PART OF THE BROADBAND ADOPTION PROBLEM

Misunderstanding the role affordability plays in broadband adoption risks focusing with tunnel vision on only part of the problem. The United States will not succeed in closing the digital divide by focusing on affordability alone. No doubt, affordability is a real issue for some Americans, and policymakers must take steps to address that problem, but we should not overlook the many complications that impede broadband adoption if policy efforts are to be effective.

There is a rich trove of research showing that broadband non-adoption is a complicated issue, with multiple contributing factors. In 2010, the Federal Communications Commission's (FCC's) Omnibus Broadband Initiative (OBI) Working Paper Series, produced in support of the National Broadband Plan, found that when non-Internet users were asked the most important reason they didn't use the Internet, "no single reason stands out."³⁵ A 2014 study published in the *Information Economics and Policy Journal* indicated that roughly two-thirds of non-adopters "face primarily non-price barriers to adoption."³⁶ Surveys often indicate additional barriers, such as digital literacy and other practical considerations, impede adoption. The pandemic has generally decreased barriers around relevancy; increasingly, more non-adopters have found they have reason to require broadband in order to carry out previously in-person tasks and visits, yet other impediments remain.

Access to physical networks is still an issue that must be addressed in any effort to close the digital divide.³⁷ Robust infrastructure is lacking rural areas in large part due to the high costs and low returns broadband providers would earn serving dispersed populations.³⁸

Setting aside the access issues, digital literacy remains a significant barrier to broader digital inclusion. Data from the Pew Research Center indicates that "having access to the Internet did not lead to more online exploration" for about 39 percent of respondents.³⁹ This points to the need for a focused effort around digital literacy support.

Moreover, some who argue that affordability is the cause of lack of connectivity cite 2019 data from the Pew Research Center, which found that 50 percent of survey respondents cited the cost of broadband as a reason for not having a subscription.⁴⁰ This statistic should not be misconstrued to mean price was *the* reason for not purchasing a subscription (rather than a factor). The Pew Research Center's data indicated that for slightly more respondents, advancements in mobile broadband technology was the primary reason for forgoing a fixed broadband subscription in the home.⁴¹

An effective policy effort to increase broadband adoption must address barriers beyond price. As researcher Colin Rhinesmith has noted, "successful digital inclusion efforts depend on a recognition of how persistent poverty shapes people's ability to access and use computers and the Internet in ways that are meaningful to their lives."⁴² He points to the need for active outreach, digital literacy training, easy access to low-cost devices, and publicly accessible computing facilities such as libraries as important tools in addition to low-income subsidy programs like Lifeline.

ADDRESS AFFORDABILITY DIRECTLY: SUBSIDIES FOR LOW-INCOME USERS

The system of private competitors providing broadband is working quite well, but that does not mean affordability is not a serious barrier to broadband adoption and inclusion. Unfortunately, the United States has relatively high rates of poverty. Of OECD countries, it has the third-highest poverty levels, so certainly affordability is a challenge for large numbers of Americans.⁴³ But policymakers should address that problem directly with a robust broadband subsidy program for low-income Americans.

To ensure broadband is affordable for all, policymakers should provide a robust broadband subsidy program to support low-income Americans rather than build redundant infrastructure.

There is no need for a complicated intervention in the competitive system, or a widespread shift to municipal broadband infrastructure. Such strategies reallocate critical funding away from direct end-user support toward efforts to generate artificial competition and redundant infrastructure. The type of competition OTI and other advocates want to promote may give users more superficial choice, but the choices will be relatively uniform and will not have the incentives that drive long-term innovation. Instead of policy bank shots of injecting competition or socializing more of the infrastructure costs, simple and direct steps, such as improving subsidies, would be most effective in closing the digital divide.

The existing FCC mechanism to provide support to qualifying low-income users—the Lifeline program—should be improved or revamped entirely. We should move away from the current,

outdated framework for designating telecommunications carriers to receive subsidies, known as the Eligible Telecommunication Carrier (ETC) framework. The ETC process is an anachronism, designed for a time of local telephone monopolies overseen by state utility commissions.⁴⁴ A modernization of Lifeline should use a flexible voucher system, empowering eligible users to put their subsidy toward a variety of communication tools of their own choice. This could be bundled with Supplemental Nutrition Assistance Program (SNAP) benefits or other similar assistance programs.⁴⁵

While Congress is at it, Lifeline should incorporate automatic stabilizers to surge broadband benefits and eligibility during economic downturns. ITIF's previous report "Lessons from the Pandemic" outlined potential modifications to the Lifeline program that would support this in order to ensure the program adapts during times of excessive strain when potential users are most at-risk and have the highest demand.⁴⁶ Doing so would not only help to avoid stagnation that occurs during partisan debates on the Hill, but also ensure mechanisms are in place to automatically respond in times of crisis.

CONCLUSION

During the COVID-19 pandemic, policymakers have a rare opportunity to galvanize support for closing the digital divide. We should not squander this opportunity with myopic debates broadband price comparisons.

Affordability clearly is a barrier for some Americans, and the government is more than justified to offer support to ensure everyone who wants broadband can afford it. We also must improve and support programs that work to encourage digital literacy and broadband adoption within communities.

But the fact that we need to ensure broadband is affordable for all does not mean there is a broader problem with America's competitive system. We should look instead at the existing support infrastructure to ensure it is assisting the right audiences in the right ways. We need to adapt current subsidy programs to fit the times, improve digital literacy, and decrease barriers to access that are beyond the price tag. Fixing affordability is not the silver bullet to fixing broadband adoption.

About the Authors

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Brake is a recognized broadband policy expert, having testified numerous times before Congress, state legislatures, and regulatory commissions, as well as serving on the FCC's Broadband Deployment Advisory Group. Brake holds a law degree from the University of Colorado Law School and a bachelor's degree in English literature and philosophy from Macalester College.

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About ITIF

The Information Technology and Innovation Foundation (ITIF) is a nonprofit, nonpartisan research and educational institute focusing on the intersection of technological innovation and public policy. Recognized by its peers in the think tank community as the global center of excellence for science and technology policy, ITIF's mission is to formulate and promote policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress.

For more information, visit us at www.itif.org.

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Written Statement For the Hearing Entitled, “Broadband Equity: Addressing Disparities in Access and Affordability” on May 6, 2021 at 11:30 AM
Testimony from Asian Americans Advancing Justice | AAJC , OCA – Asian Pacific Advocates (OCA), and National Council of Asian Pacific Americans (NCAPA)

Dear Chairman Doyle, Ranking Member Latta, and Members of the Subcommittee on Communications and Technology of the House Committee on Energy and Commerce,

On behalf of Asian Americans Advancing Justice | AAJC, OCA – Asian Pacific American Advocates, and the National Council of Asian Pacific Americans, we submit this written statement ahead of the Committee’s hearing to urge Congress to do more to ensure families and communities continue to have access to an essential service beyond the pandemic. Fast and reliable internet is critical to providing economic opportunities, connecting communities, and giving access to educational, health, and other indispensable programs. Communities will continue to rely on broadband access. A permanent broadband subsidy that is as inclusive and targeted towards communities in most critical need is necessary to bridge the digital divide.

Asian Americans Advancing Justice | AAJC (“Advancing Justice | AAJC”) is dedicated to civil and human rights for Asian Americans and to promoting a fair and equitable society for all. We provide the growing Asian American community with multilingual resources, culturally appropriate community education, and public policy and civil rights advocacy. In the communications field, Advancing Justice | AAJC works to promote access to critical technology, services, and media for our communities.

OCA – Asian Pacific American Advocates (“OCA”) is a national membership-driven organization of community advocates dedicated to advancing the social, political, and economic well-being of AAPIs. OCA strongly believes that as our country continues to digitize and create modern communications networks, it is pivotal that Asian Americans and Pacific Islanders shape the policies and regulations that create the framework for that innovation.

The National Council of Asian Pacific Americans (“NCAPA”) is a coalition of 37 national Asian American Pacific Islander (AAPI) organizations around the country. Based in Washington D.C., NCAPA serves to represent the interests of the greater AAPI communities, the fastest growing

racial group in the nation, and to provide a national voice for Asian American and Native Hawaiian Pacific Islander issues.

Our organizations are also members of the Asian American Tech Table, which was created to facilitate a more unified voice and presence in national tech and telecom policy debates. The Table, which is co-chaired by Asian Americans Advancing Justice | AAJC and OCA – Asian Pacific American Advocates (OCA), convenes regularly with its members to discuss relevant policy concerns, while also engaging with industry and other stakeholders to raise the visibility of the Asian American community in tech policy and digital civil rights issues. We thank the subcommittee for holding this hearing on systemic barriers that many low-income communities and people of color face in broadband accessibility and affordability, and we welcome the opportunity to share how the digital divide still needs to be bridged for Asian Americans as well.

Asian Americans and Pacific Islanders and the Digital Divide

Although studies have shown that 95% of English-speaking Asian Americans use the Internet, suggesting high levels of digital access and literacy, these studies are often limited in scope and obscure key inequities within our communities. Surveys that are conducted in English and online and that aggregate data of over 20 different ethnicities select for people who are likely already connected and provide a skewed perspective on broadband access in our communities.

Despite the lack of disaggregated and inclusive data, digital divide indicators—educational attainment, income level, and English proficiency—suggest that a gap in access exists among different ethnic groups in the AAPI community:

- For example, 4.6% of Japanese Americans have less than a high school diploma, compared with 53.6% of Burmese Americans.
- The median household income of Indian Americans is \$114,261, that of Samoan Americans and Burmese Americans is \$54,193 and \$39,730, respectively.
- In 2015, 2.6% of SNAP recipients were categorized as Asian American. However, the divide between certain ethnic groups was stark: 2.38% of Thai Americans were enrolled in the program, compared with 67.3% of Bhutanese Americans.
- In 2016, 26% of Asian Americans and 37% of Pacific Islanders were enrolled in Medicaid or some other public insurance program.¹

These indicators suggest that there are likely millions of Asian Americans and Pacific Islanders for whom the digital divide has yet to be bridged, and more work needs to be done. Many members of our communities could benefit from services like Lifeline, E-Rate, or the Emergency

¹ <https://www.advancingjustice-aaajc.org/sites/default/files/2020-02/Lifeline%20Background.pdf>

Broadband Benefit (EBB) program, but misleading studies that portray our communities as already-connected obscure the need for dedicated and targeted outreach to low-income AAPIs.

For Asian American and Pacific Islanders, accurate data is one of the first and primary challenges to broadband access. Few studies on broadband access specifically focus on Asian Americans, fewer still disaggregate their data, and even less data exists for Pacific Islanders.

Digital Literacy and Skills Among Asian Americans and Pacific Islanders

Another dimension to the challenge of getting Asian Americans and Pacific Islanders connected is cultivating digital literacy and skills in a population where approximately 34% of individuals have limited English proficiency (LEP). Disaggregated data shows that LEP rates among Asian Americans and Pacific Islanders also vary significantly:

- Among Asian Americans, nearly 80% of Bhutanese Americans have LEP while 27% of Indian Americans have LEP.²
- The average LEP rate among Pacific Islanders is 8.5%, but these numbers also vary among different ethnic groups, from 41% of Marshallese Americans to 2% of Native Hawaiians.³

Language access and accessibility is critical to ensuring that Asian Americans and Pacific Islanders, once connected to broadband, can get the most out of their experience online. This is especially important when it comes to accessing government services and relief programs. For example, none of the financial relief services offered by the Small Business Association provide translations into Asian or Pacific Islander languages on their websites.

In addition to this, the FCC has acknowledged the need for language access in preparation for the EBB program by offering outreach materials in 14 different languages, including multiple Asian languages. This is an important first step in ensuring that everyone who is eligible for the EBB program can receive its benefits. More work needs to be done in continuing to expand translated materials and language support for all Asian Americans and Pacific Islanders.

Furthermore, some languages do not have written alphabets, posing unique challenges for groups like Rohingya refugees who do not have a universally accepted script and who require additional in-language audiovisual support. Expansive and robust language access can make a world of difference in getting everyone connected.

² <https://aapidata.com/infographic-aa-limited-english-proficiency-2015/>

³ <https://aapidata.com/infographic-nhpi-limited-english-proficiency-2015/>;
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Digital literacy and skills training are increasingly necessary to assist people with navigating technology as it rapidly develops and changes. In-language training will be even more necessary to ensure that AAPIs are adequately equipped to adapt to the digital age.

Infrastructure and Other Barriers to Access

Communities of color are disproportionately negatively impacted by lack of or insufficient access to broadband. A permanent broadband subsidy must be inclusive and equitable to provide service to the communities that need it most. An updated broadband access plan must consider and address more than just affordability issues. Congress must also consider how federal funding and companies can begin investing in overcoming other barriers such as infrastructure issues that exist because of historical redlining and other profit-driven decisions, ensuring there is access in non-English languages for those who are not English proficient, working closely with trusted messengers and community groups to adequately publicize the program, providing necessary equipment and trainings, and expanding benefits to immigrant populations, including those that may be differently documented.

For example, in San Francisco's Chinatown, racial, economic, and environmental inequalities contribute to digital inequality and redlining for the largely working class and immigrant population. 2015 data found that only 56% of San Francisco Chinatown residents had Internet access at home, compared to the city-wide average of 88%. Historic Chinatowns and other ethnic enclaves all over the United States were born out of housing and labor discrimination and racially motivated exclusionary policies. This history of neglect, disinvestment, and displacement made its mark on the very physical landscape and infrastructure of areas like Chinatown, impacting residents to this day.⁴

40% of housing in San Francisco's Chinatown is single-room occupancy, meaning that many only have a general address and not one that pointed to their specific room, disqualifying them from getting Wi-Fi access if someone else already has an account using that same general address. The decades-old concrete flooring and walls in many buildings in the area also make the penetration and transmission of Wi-Fi signals through the building almost physically impossible. Moreover, these residences lack the infrastructure to install hard-wired internet or other connections. Residents' only option is lower quality and speed hotspot devices.

Redlined neighborhoods and urban areas that are home to predominantly low-income communities of color also frequently face the threat of gentrification and redevelopment. This presents another challenge for getting these communities connected as the potential of infrastructural renovations needed for broadband connectivity must be weighed against the danger of increasingly unaffordable housing and displacement.

⁴ <https://journals.uic.edu/ojs/index.php/fm/article/view/6196/5187>

Affordability is just one of the barriers between communities and adequate broadband access. While a permanent subsidy will go a long way to remediate the digital divide, internet service provider companies and other stakeholders must continue to do more to invest in adequate infrastructure for underserved communities and provide equitable and high-quality services to beneficiaries.

For individuals and families to benefit from a subsidy, they should have a variety of services and plans that they can choose to best meet their unique internet needs; thus, companies should ensure a diversity of high-quality plans made available at price-points that beneficiaries are able to afford. Moreover, beneficiaries must be protected from unexpected fees and costs. The benefit is meant to assist families that cannot afford adequate broadband access; unexpected costs or increased rates would create financial stress on communities that are already under strain. Internet service providers must commit to transparent pricing, consumer awareness, and fair notice and choice.

Challenges to Connecting the Pacific Islands

As the Federal Communications Commission prepares to launch the Emergency Broadband Benefit (EBB) program later this month, the lead-up to EBB rollout has also revealed barriers to broadband connectivity on the Pacific Islands. As of Wednesday, May 5, 2021 the American Samoa, Guam, and the Northern Mariana Islands have the fewest participating providers of any state or territory—with two, three, and two providers respectively. Of these limited options, only one provider offers a connected device for American Samoans, leaving households on Guam and the Northern Mariana Islands entirely unable to take advantage of the \$100 discount towards a device that the program offers.

Broadband access and affordability in the Pacific Islands has long been a challenge. In 2012, the American Samoa had the dubious distinction of having America's most expensive Internet.⁵ Since then, broadband connectivity has improved in the Pacific Islands but costs remain among the highest in the nation. Thousands of miles away from the continental U.S., internet connections are especially slow and prices are often unaffordable in the American Samoa and Northern Mariana Islands. An undersea cable linking the American Samoa to Hawaii was laid in 2009, but BlueSky, the telecommunications company that bore costs along with the American Samoa government, charges \$115 a month for speeds of 383 kilobytes per second.⁶

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<https://slate.com/technology/2012/05/internet-access-and-cost-in-american-samoa-northern-marianas-islands-guam.html>

⁶ <https://pacificbasindevelopment.org/wp-content/uploads/2020/02/2019-U.S.-Pacific-Islands-CEDS.pdf>

Greater infrastructure investment in the region is necessary to ensure that everyone can access the internet and fully participate in our society as more and more of our lives, work, and essential services move online. In 2015, the only undersea fiber-optic cable servicing the Northern Mariana Islands was damaged in a storm, disconnecting nearly 60,000 residents from telephone, internet, banking, and other services for a couple of days. This prompted the construction of a second fiber-optic cable, but such vulnerabilities reveal the challenges to getting Pacific Islanders connected to the rest of the world.⁷

Establishing a Permanent Broadband Subsidy

A permanent broadband subsidy must persist beyond the pandemic to assist historically marginalized and vulnerable populations. A subsidy should be as inclusive, straightforward, and easy to qualify for and access as possible to service those who need it most.

The pandemic has demonstrated how critical internet access is for communities to be able to survive and thrive. Asian Americans Advancing Justice | AAJC found that many community organizations and programs relied on and will continue to rely on access to the internet. High quality reliable broadband is necessary to keep immigrant families connected to their in-language communities both in the U.S. and abroad, providing the elderly with more accessible health care, for ESL homework assistance programs, job training programs for refugee populations, and connecting community members to essential federal, state, and local services and benefits. These services were essential before the pandemic and communities expect to rely even more heavily on tech and remote solutions even after the pandemic subsides.

For a permanent broadband subsidy program to successfully reach the communities that are in greatest need of and can benefit most from better internet access, the program must be designed to be easily accessible, well-publicized, and simple to qualify and sign up for. Communities that are eligible for the program may struggle with navigating complicated forms, have English-access issues, only have a mobile device with low internet connection, and/or have low digital literacy. Communities may already harbor mistrust of federal programs and may fail to complete the process if it is overly complex or qualification requirements are excessively onerous.

For example, the EBB program allows for multiple forms of government issued identification (driver's license, ITIN, passport, social security number, tribal ID number, etc.) for an individual's identity verification. Those who already receive Lifeline benefits are also able to easily opt-in to EBB benefits. Flexible qualification requirements can lower unnecessary barriers for participation and make the registration process more straightforward. The FCC is also

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<https://www.guampdn.com/story/news/2015/07/07/thousands-lose-telecommunications-cnmi-guam-customers-lose-service/29844973/>

currently preparing EBB informational materials, tutorials, and PSAs in multiple non-English languages and working directly with trusted community partners to publicize the program. A permanent broadband subsidy must emulate these elements of the EBB program to make the process as seamless as possible to maximize participation and uplift the communities who need these benefits most. A program that fails to consider the experiences and needs of and design intentionally for the elderly, immigrants, communities of color, non-English speaking individuals, and other marginalized communities will inevitably fail to uplift communities that need broadband access most.

Conclusion

This past year has proved to all of us that broadband access is essential for school, work, and life—but millions are still being left behind, including AAPI communities. Limited studies portray our communities as having already bridged the digital divide, but deeper analysis demonstrates that AAPIs still experience disparities and inequalities in broadband access.

We urge Congress to do more to ensure families and communities continue to have access to an essential service beyond the pandemic—by disaggregated data, investing in infrastructure, committing to language access, and implementing a permanent broadband subsidy.

Asian Americans Advancing Justice | AAJC, OCA – Asian Pacific Advocates (OCA), and National Council of Asian Pacific Americans (NCAPA) thank you for your attention to and examination of this critical issue, and urge you to support a permanent broadband subsidy that is equitable and beneficial to families and communities.

Please contact Emily Chi, Assistant Director for Telecommunications, Technology and Media at Asian Americans Advancing Justice | AAJC at echi@advancingjustice-aaajc.org; Michael Nguyen, Senior Policy & Advocacy Associate at OCA - Asian Pacific American Advocate at michael.nguyen@ocanational.org, or Annie Yang, Policy and Communications Associate at annie@ncapaonline.org for any inquiries.

Sincerely,

Asian Americans Advancing Justice | AAJC
OCA - Asian Pacific Advocates (OCA)
National Council of Asian Pacific Americans (NCAPA)

<https://www.statesman.com/story/opinion/columns/more-voices/2021/04/22/opinion-heres-how-we-end-digital-divide/7201613002/>

Op-Ed by Angela Siefer, Executive Director of the National Digital Inclusion Alliance

Here's how we end the digital divide

By Angela Siefer

April 22, 2021

The COVID-19 pandemic dispelled any doubt about the importance of broadband in the quest for equity in the digital age. The federal government is now rethinking its entire approach to universal broadband access and use — and it's about time.

A whopping 27% of Americans report not subscribing to home broadband. Texas isn't faring much better. According to the Census Bureau, 19% of households across the state do not have a home broadband subscription.

While the challenge of the availability of internet service in rural areas is real and urgent, our nation's digital divide is also driven by huge disparities in broadband adoption.

If we truly want to “Build Back Better,” we need a national commitment to eliminating this broadband adoption gap. That's going to take all hands on deck: funding and leadership from the federal government, buy-in and investment from broadband providers, and deeper partnerships with the community organizations here in Texas and across the country that are on the front lines helping unconnected Americans get online.

Until recently, Washington had largely ceded its responsibility on broadband adoption, crossing its fingers that the private sector would handle it. In this vacuum of federal leadership, some broadband providers have made valuable efforts to help close this gap, but it is not enough.

Even before the pandemic, most providers [offered low-cost programs](#) — generally in the range of [\\$10-\\$18 per month](#) — for low-income Americans. During COVID-19, many provided additional discounts and free introductory periods. Comcast's Internet Essentials initiative, the largest example, reports having connected more than 10 million Americans since 2011, and recently doubled the program's broadband speeds.

Private sector partners are essential to digital inclusion work, but the federal government must be a bigger part of the solution. To get everyone connected in a meaningful way, we need public agencies, private companies and community-based efforts all rowing in the same direction.

Congress is finally weighing in. In December, bipartisan majorities in Washington approved more than \$3 billion to create a new Emergency Broadband Benefit. Under this program, low-income and unemployed Americans will be eligible for a subsidy of up to \$50 per month (\$75 on tribal lands) to purchase home broadband. In March, Washington approved over \$7 billion for school students and library patron connectivity.

These two programs are valuable band-aids for now. Next, Congress and the Biden Administration need to build on this momentum.

First, lawmakers need to get to work on a long-term solution that will help low-income families stay connected after the pandemic ends. Low-income families need and deserve a Permanent Broadband Benefit that will ensure every American can afford to purchase home broadband service. Every capable broadband provider should be encouraged to participate so that consumers are empowered with more choices.

Second, policymakers must remember that affordability is only one of the many sociological hurdles fueling broadband adoption disparities. We also must address the need for appropriate devices, digital literacy and digital navigation support.

The National Digital Inclusion Alliance's years of work on this issue has shown that digital navigators — advocates in the community who can help marginalized families navigate the sign-up process, gain access to a device and obtain basic tech support — are critical ambassadors for universal adoption.

The success of Comcast's Internet Essentials effort, for example, rests in no small part on the company's investment in community outreach and digital literacy training to encourage more sign-ups. For these new federal broadband adoption programs to succeed, they'll need similar investments in community outreach partnerships that are critical to closing adoption gaps.

Congress can — and should — continue investing in rural broadband projects. But it can no longer ignore the broadband adoption challenges that are the bigger driver of our digital divide. It's long past time to get everyone connected.

Siefer is the executive director of the National Digital Inclusion Alliance.

5/5/2021

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Focusing on Affordability

Submitted on April 19, 2021



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Monday, April 19, 2021

Digital Beat

Focusing on Affordability:

What Broadband Adoption Rates in Cities Tell Us About Getting More People Online



Morgan

With a proposal to spend \$100 billion to ensure that all Americans have affordable and reliable internet service, the Biden Administration has made closing the digital divide a huge priority. Much remains to be done to fill in the specifics of what this means, but two types of policy tools come to mind when thinking about how to address the digital divide.

Top of mind is promoting competition. Fostering competition means investing in new infrastructure, thereby giving consumers more choice for very high-speed service. This competitive alternative would lower prices to consumers and put subscription service within reach of more households. Research shows (https://www.benton.org/sites/default/files/BBA_full_FS_10.30.pdf) that just 55% of U.S. households have two or more wireline service offering for very high-speed internet service, so encouraging development of another network alternative has obvious appeal.

An alternative tool is providing a subsidy. A subsidy tackles affordability more directly by offering cost relief to households who currently lack the means to subscribe to service. Since research shows that affordability of service (<https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019/>) is the chief reason households do not subscribe to broadband, easing cost pressure through a subsidy is an attractive approach.

Spoiler alert: This article will explore whether the presence of competition helps to explain adoption rates across U.S. cities, as well as other socio-economic factors that may matter. There is a positive correlation between the presence of fiber competitor to cable and home broadband adoption, but it is modest in magnitude. Cities' poverty rates and degree of residential segregation have larger (and negative) correlations with home broadband adoption. This suggests that, as policymakers aim at the goal of affordable and reliable internet for all Americans, they will have to rely on both competition and subsidies as policy levers.

Fiber Networks, Competition, and Adoptions Rates

Developments in the market for home internet service in the past decade offer some clues on how competition may boost home broadband subscribership. Households in a number of cities already experience competition between an incumbent cable provider and a fiber optic service provider (such as Verizon FIOS or Google Fiber). Many other urban areas have only a cable provider; competitive choice is limited to a telephone company's digital subscriber line (DSL) service, whose speeds often do not meet the Federal Communications Commission's (FCC) 25 Megabits per second threshold for broadband service and do not approach the speeds of cable or fiber. Wireless data plans are another option, though monthly data caps can limit their usefulness for some applications, particularly two-way video.

<https://www.benton.org/blog/focusing-affordability>

1/5

5/5/2021

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Do adoption rates differ in cities with a cable-fiber market structure compared to those with cable-DSL markets? Data from the American Community Survey (ACS) and BroadbandNow (<https://broadbandnow.com/research/fcc-underestimates-unserved-by-50-percent/>) help in addressing that question. ACS provides information on cities' wireline broadband adoption rates, as well as other city characteristics (e.g., poverty rates, household incomes, racial/ethnic composition, and levels of education attainment). For competition, BroadbandNow has data on the share of households in cities covered by specific broadband technologies (e.g., fiber, cable, DSL).

The table below shows how adoption rates differ, overall and by household income category, when looking at four cable-DSL cities and four cable-fiber cities. Each of the fiber cities have 80% or more households with fiber service available.

WIRELINE BROADBAND - 8 CITIES (2019 1-YEAR AMERICAN COMMUNITY SURVEY DATA)						
Cable-DSL	ALL	<\$25k	\$25k-\$50k	\$50k-\$75k	\$75k-\$150k	>\$150k
Baltimore	58.7%	31.8%	52.3%	59.6%	84.6%	84.8%
Detroit	55.1%	39.8%	53.5%	73.0%	76.6%	83.4%
Columbus	77.4%	51.9%	71.0%	84.0%	90.6%	92.4%
Boston	78.1%	53.2%	72.3%	76.3%	87.5%	93.6%
Average	67.3%	44.2%	62.3%	73.2%	84.8%	88.6%
Cable-Fiber	ALL	<\$25k	\$25k-\$50k	\$50k-\$75k	\$75k-\$150k	>\$150k
Austin	77.6%	49.7%	70.1%	76.7%	87.2%	92.0%
Kansas City, MO	69.5%	41.8%	64.0%	77.5%	83.8%	91.2%
Newark	58.2%	41.0%	52.9%	76.4%	74.0%	84.9%
Tampa	75.7%	42.9%	74.2%	86.8%	80.3%	91.3%
Average	70.3%	43.9%	65.3%	74.4%	81.3%	89.9%

Cities with a fiber operator competing with cable have higher broadband adoption rates for wireline internet service at home – by about 3 percentage points when looking at a handful of examples. The table also indicates that, for poor households, adoption rates for wireline service are about the same in areas with a robust network alternative compared to the places where DSL is the alternative. This result may not be a surprise. Price is only one possible feature on which providers might compete; rather, a new entrant may drive carriers to compete on network speed or reliability. It is also possible that price competition may not result in price decreases of sufficient magnitude to address affordability for very poor households (or at least very many of them).

The results for a small sample of cities are only suggestive. More persuasive evidence requires a larger sample and for that I assembled data on the 105 largest cities in the United States. I modeled wireline adoption as a function of whether a city had more than 80% household coverage with a high-speed (i.e., fiber) option, as well as poverty rates, share of households in various categories of educational attainment, the share of the population that is white and African American, and the share of population over the age of 65. Statistical analysis showed that cities with a high-speed network alternative to cable service had home wireline adoption rates that were **2.6% percentage** points higher than they otherwise would be – while controlling for other factors noted. This difference, while significant statistically, is not that great.

Poverty and Residential Segregation Help Explain Adoption Differences Across Cities

Two other factors stand out both for their significance and how their link to adoption rates. One is poverty. Across the 105 cities used for analysis, the average poverty rate for 2019 was 15.6%. Among cities whose poverty rates exceed 20%, the wireline broadband subscription rate was 63% while the figure for all other cities was 74%.

The other element is residential segregation for African Americans. Measures of residential segregation comes from the Diversity and Disparities (<https://s4.ad.brown.edu/projects/diversity/segregation2010/Default.aspx>) project at Brown University. A residential segregation figure of 50 (comparing Black and white households) means that 50% of Black households in a city would have to move in order for the racial composition of all city neighborhoods to reflect the racial composition of the entire city. A score of 60 or above is considered a sign of very severe residential segregation and, for those cities, broadband adoption is 67.1%. For all other cities, the figure is 74.1%.

5/5/2021

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Both factors – poverty and residential segregation – loom large in having strong correlations with the level of household broadband adoption in cities. In fact, they are stronger than the correlation between the presence of competition and broadband adoption. You'll win more bets on predicting a city's broadband adoption rate if you know its poverty rate than if you know only whether it has a fiber network competing with cable.

“Wireless-Only” Adoption Ticks Down in the Presence of Fiber Networks

The adoption data show another interesting pattern. Places with a competitive high-speed alternative have a lower incidence of households relying only on wireless data for internet access. For cities with fiber competition, 10.9% of households using wireless only to go online without any other sort of subscription compared with 12.4% for all other cities. In conjunction with the boost in wireline adoption that is associated with competition, this suggests that another high-speed network lures some wireless-only subscribers to wireline service. That may result in a more robust online experience for this new wireline subscriber. But, as the data in the table with eight cities suggests, few of these new wireline subscribers are likely to be low-income households.

What's the Right Policy Mix?

The preceding analysis suggests policymakers should think carefully about the mix of policy tools and the problems different tools might address. Promoting competition, as this analysis indicates, has a modest association with overall adoption rates. That does not mean that additional competition is not worthwhile. Drops in prices will be beneficial to all broadband consumers. Competition that sparks improvement in network speeds or reliability will similarly benefit a wide range of subscribers.

Yet changes in the market due to competition may not be enough to spark adoption among households with the lowest incomes. Entry-level broadband prices are about \$65 per month; even a 20% price drop may still leave broadband out of reach for low-income households. For that reason, making service more affordable for low-income households may be a better approach. Discount Internet offers have demonstrated their viability (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3431346) in increasing broadband adoption among low-income households, with some service plans charging \$10 per month. Those programs are not universally available and are not the same as subsidy programs. The government's subsidy program for phone service, Lifeline, has to date attracted few broadband subscribers, which underscores the importance of program design in contemplating a subsidy program. Solving those problems and scaling new initiatives to cover all low-income communities would not be easy, but there are models to build upon.

A final issue is time horizon. The time between today's \$100 billion broadband proposal and new networks serving households is four years or more. In the meantime, many low-income households will remain unconnected because they cannot afford service. If policymakers want to get more Americans online with high-speed internet connections at home, then relying on competition alone may prove insufficient. Programs that more directly address affordability offer help in the near-term for those in need.

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Does Competition Between Cable and Fiber Increase Adoption?

Scott Wallsten

April 2021

Does Competition Between Cable and Fiber Increase Adoption?

Scott Wallsten*

April 27, 2021

Abstract

U.S. broadband policy has emphasized the importance of facilities-based competition given its potential to encourage investment, improve quality, and lower prices. A natural question to ask today is whether this competition can encourage more adoption. Using Census-tract-level data from the FCC and the American Community Survey (ACS) from 2017-2019, I find that competition between cable and fiber does not seem to bring the last group of unconnected people online. More accurately, broadband adoption, all else equal, is not higher in tracts with cable and fiber providers than it is in tracts with only a cable provider or only a fiber provider.

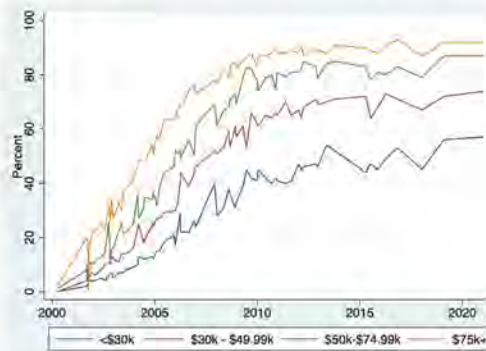
* President and Senior Fellow, Technology Policy Institute. The views expressed here are mine alone and do not necessarily reflect the views of TPI or anyone else affiliated with it.

U.S. broadband policy has long emphasized the importance of facilities-based competition—competition among providers who use their own infrastructure rather than leasing others’—due to its potential to encourage investment, improve quality, and lower prices. Today, focus has shifted to considering ways of getting the last unconnected people online. It is natural to wonder if, among its benefits, facilities-based competition could encourage adoption. The answer is not obvious. On one hand, more competition nearly always brings benefits of some sort, and additional varieties of offers to encourage the unconnected to subscribe might be among them. On the other hand, there is no guarantee that competition will focus on acquiring subscribers who have the weakest demand for broadband, and therefore may have little effect on adoption.

Using Census-tract-level data from the FCC and the American Community Survey (ACS) from 2017-2019, I find that competition between cable and fiber does not seem to bring the last group of unconnected people online. More accurately, broadband adoption, all else equal, is not higher in tracts with cable and fiber providers than it is in tracts with only a cable provider or only a fiber provider.

While adoption continues to increase, the rate of increase in home wireline broadband subscriptions has slowed, almost to nothing according to the Pew Research Center (Figure 1). The ACS shows continued, but very slow, growth in the adoption of home wired connections—increasing from 67.8% of households in 2015 to 70.8% in 2019.

Figure 1: Home Broadband Adoption by Income



Source: Pew Research Center¹

¹ <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/?menullem=2ab2b0bc-6364-4d3a-8db7-ac134dbc05cd>

This slowdown may be irrelevant to policy for wealthier groups—92% of households that earn at least \$75,000 annually report having a home broadband connection, which is quite close to the 96% adoption of fixed telephones at its peak popularity. However, according to Pew, fewer than 60% of households that earn less than \$30,000 annually have no home connections and, according to the ACS, about 64% of households with less than \$20,000 a year in income, or about six million households, have either wired or mobile broadband at home.

The key policy question is determining the most cost-effective way of encouraging the remaining unconnected people to subscribe. In this analysis, I ask whether additional facilities-based competition is likely to increase broadband adoption, particularly among low-income people.

Ultimately, whether competition affects adoption is an empirical question, and this paper tries to answer that question. Using Census-tract level data from the FCC and the U.S. Census, I find that all else equal, adoption in tracts with both a cable and a fiber provider is not higher than tracts with only a single cable or fiber provider.

Competition and Adoption

Little empirical literature evaluates the connection between facilities-based competition and adoption, particularly in recent years. Instead, the research on competition and adoption has tended to focus on comparing the effects of facilities-based competition to facilities-sharing competition, typically across countries.

Broadband providers can compete along many dimensions for customers, including price, bandwidth, bundled services, and other factors. The nature of the competition may change over time, as well. When high-speed broadband first became widely available, providers competed for customers to upgrade from dialup. One would expect competition to increase adoption of the new technology. As the share of people already connected increases, the potential effects of competition on overall adoption are likely to become smaller simply because fewer people remain unconnected.

One of the first empirical papers on the effects of competition on adoption, Aron and Burnstein (2003), found that competition between DSL and cable providers was correlated with increased adoption at the state level.² Their broadband adoption data was from 2000, when, according to the Pew Research Center, only about one percent of adults had broadband at home. Using data from 2000 through 2006, Prieger and Hu (2008) find that intermodal competition is correlated with a higher share of minorities adopting broadband.³ By 2006, more than 40% of adults had broadband at home.

² Debra J. Aron and David E. Burnstein, "Broadband Adoption in the United States: An Empirical Analysis," SSRN, 2003.

³ James E. Prieger and Wei-Min Hu, "The Broadband Digital Divide and the Nexus of Race, Competition, and Quality," *Information Economics and Policy* 20, no. 2 (June 2008): 150–67, <https://doi.org/10.1016/j.infecopol.2008.01.001>.

Wallsten and Mallahan (2010) used nonpublic data at the FCC combined with publicly available Census data and commercially available price data to explore the effects of competition.⁴ They found that the number of broadband providers in a Census tract was positively correlated with the maximum available speed and negatively with the price of the slowest broadband tier. These results included endogenizing the number of providers, which revealed that penetration was driven partly by housing density and primarily by income. In 2010, just over 60 percent of adults had broadband at home.

Both demand and supply have changed considerably since those studies were done. Today, cable and fiber networks both commonly offer gigabit service downstream, with fiber offering it also upstream and cable generally offering up to 35 Mbps upstream. DSL is now generally considered outdated technology, at least in the U. S., with the telephone companies replacing it with fiber.

Newer research has focused more on the effects of competition on speed rather than adoption. Fister (2019) finds that entry encourages faster technology upgrades and higher maximum available speeds.⁵ Somewhat contrarily, when controlling for factors that affect entry, Fenner (2020) finds that fiber entry does not affect the mean available speed and is negatively correlated with the fastest speed offered by the incumbent.

Data

Data from the FCC and the U.S. Census make it possible to test whether multiple facilities-based providers affect adoption. The FCC's "Form 477" provides data on availability at the Census block level and the American Community Survey (ACS) from the Census make public data available at the Census tract level beginning in 2017. Because tracts are comprised of several blocks, our geographic unit of analysis is therefore the Census tract. The most recent data on availability is June 2020 while the most recent Census data on adoption is from 2019. Thus, from 2017 – 2019 we have a dataset in which an observation is a Census-tract-year. Prior to 2017 the Census made data public only to the county level, so we can go further back in time at this less disaggregated level.

The ACS asks whether anyone in the surveyed household has internet, and then, if the answer is yes, asks from which technology (Figure 2).

⁴ Scott Wallsten and Colleen Mallahan, "Residential Broadband Competition in the United States" (March 2010), <http://ssrn.com/paper=1684236>.

⁵ Joanna Fister, "The Impact of Competition and Regulation on Broadband Internet Deployment in the Telecommunications Industry" (Dissertation, Northeastern University, April 2019), <http://hdl.handle.net/2047/D20318694>.

Figure 2: ACS Questions About Internet Use

At this house, apartment, or mobile home – do you or any member of this household have access to the Internet?

Yes, by paying a cell phone company or Internet service provider
 Yes, without paying a cell phone company or Internet service provider → *SKIP to question 12*
 No access to the Internet at this house, apartment, or mobile home → *SKIP to question 12*

Do you or any member of this household have access to the Internet using a –

a. cellular data plan for a smartphone or other mobile device?	Yes ☐	No ☐
b. broadband (high speed) Internet service such as cable, fiber optic, or DSL service installed in this household?	☐	☐
c. satellite Internet service installed in this household?	☐	☐
d. dial-up Internet service installed in this household?	☐	☐
e. some other service? Specify service: _____	☐	☐

Source: ACS

Unfortunately, the public data do not link the second question to the demographics. Thus, while we know the overall share of the population that subscribes to different technologies, we do not know the share of different income or racial groups by technologies. In other words, we know the share of the population overall that subscribes to home wired broadband and mobile broadband only but not the share of the low-income population that subscribes to fixed wired broadband. Table 1 shows share of households with internet access from the ACS data.

Table 1: Share of Households with Internet by Type and Income

ACS 1-Year Estimates						
Year	Fixed broadband	Mobile only	Any Internet			
			Total	Less than \$20k	\$20k-\$75k	\$75k and up
2017	68.8%	11.0%	83.5%	59.3%	81.6%	95.0%
2018	69.6%	11.6%	85.3%	62.3%	83.0%	95.3%
2019	70.8%	11.8%	86.6%	64.2%	84.1%	95.6%

ACS 5-Year Rolling Average Estimates						
Year	Fixed broadband	Mobile only	Any Internet			
			Total	Less than \$20k	\$20k-\$75k	\$75k and up
2017	67.0%	7.5%	78.7%	51.5%	76.1%	93.4%
2018	67.9%	8.8%	80.9%	54.7%	78.1%	94.0%
2019	70.8%	10.0%	83.0%	58.0%	80.2%	94.6%

Source: American Community Survey.⁶

Note: This paper uses the 5-year estimates as the 1-year estimates are not available at the Census tract level.

⁶ <https://data.census.gov/cedsci/table?q=S2801&tid=ACST1Y2017.S2801>

Increasing adoption among low-income people is a key policy objective, and this paper evaluates one possible mechanism that might increase adoption – competition. Broadband adoption is a function of demand and supply, each of which is affected by many factors. At an individual or household level, demand is strongly correlated with income and the perceived value of activities available online. Average income across a geographic area affects supply because demand is likely to be higher. Other factors affect the costs of building out broadband in an area, including population density, ease of access to rights-of-way, the cost of pole attachments, and local and state rules an ISP must follow. Demand and supply (competition) together may then affect various measures of broadband, including adoption and varying available features.

Another way to think about the many factors affecting supply and demand is to recognize that these factors differ across locations and time. So, for example, if the objective is to compare the effects of competition on adoption, it would not make sense to compare a wealthy suburban area to a poor rural area and attribute adoption differences solely, or even primarily, to different levels of competition. Double-blind controlled studies such as those done to test pharmaceuticals represent the gold standard, in principle, for eliminating confounding effects such as those described above. While experimental economics has become increasingly popular, that kind of experiment is usually not possible in the real world.⁷

Without a controlled experiment, we rely on the natural experiment of differences across space and time and attempt to control for factors like income, density, and topography that will also affect the variable we care about, which in this case is adoption. With only one year of data and a cross-section, the best we could do empirically is to control for factors that are measured. But even that approach is flawed because indicators are measured with error and it is not possible to capture all the local effects that drive adoption in order to leave us with only the competition effect.

Multiple years of data, which gives us a panel across space and time, opens up more rigorous options. Specifically, we can eliminate the confounding effects that do not change much, if at all, across years by subtracting the data for a given place in one year from the data for that place in the previous year. Econometrically, we do that by including “fixed effects”—a separate indicator variable for each geographic area (Census tract fixed effects in this case) as well as an indicator for each year (year fixed effects). Those remove all the location-specific, time-invariant factors as well as factors caused by events across areas but attributable to time, such as trends or macroeconomic shock.

⁷ While double-blind trials are usually not possible with telecom, the area is ripe for experimentation. For example, different approaches to improving Lifeline could be implemented across states, making it possible to study which approaches are more successful.

To implement this approach, I estimate the following equation:

$$\text{adoption}_{ty} = f(\text{cable}_{ty}, \text{fiber}_{ty}, \text{cable \& fiber}_{ty}, \text{year fixed effects}_y, \text{census tract fixed effects}_t)$$

As an observation is a Census tract-year, the subscript t indicates census tract and y indicates year. Cable_{ty} , fiber_{ty} , and $[\text{cable \& fiber}]_{ty}$ are whether census tract t in year y has a cable broadband provider, fiber provider, or both. So, for example, for a tract with only a cable provider, $\text{Cable}_{ty} = 1$, $\text{fiber}_{ty} = 0$, and $[\text{cable \& fiber}]_{ty} = 0$. In a tract with cable and fiber, all three variables equal one. Census tract and year fixed effects act as controls as described above.

I estimate the equation several times using different measures of adoption available from the Census, including wireline broadband, any internet, by income, and by race. As discussed, the ACS shows wireline broadband only for the overall population. It does not divide adoption into wired and mobile for demographic breakdowns, so those variables measure adoption of either technology.

Table 2 shows the results of the adoption regressions. In these regressions, tracts with both cable and fiber providers are the excluded category, meaning that the coefficients on the “cable only” and “fiber only” variable tell us about adoption in those tracts relative to tracts with both cable and fiber.

Table 2: Cable or Fiber Alone vs Cable and Fiber and Adoption, Regression Results

	Share of Households with		
	Wireline Broadband	Any Internet	Mobile Only
Cable Only	-0.07 (0.05)	-0.31*** (0.04)	-0.19*** (0.03)
Fiber Only	-0.01 (0.14)	0.37*** (0.12)	0.43*** (0.09)
Other	0.33* (0.20)	-0.23 (0.18)	-0.13 (0.13)
2018	0.87*** (0.02)	2.35*** (0.02)	-2.69*** (0.01)
2019	1.83*** (0.02)	4.70*** (0.02)	-1.34*** (0.01)
Constant	64.45*** (0.01)	76.56*** (0.01)	10.46*** (0.01)
Obs.	218,394	216,620	216,620
R-squared	0.98	0.97	0.92
Tract Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

Standard errors are in parenthesis

Note: Cable and Fiber together and year 2017 are reference categories.

The results suggest that broadband adoption is not higher when both technologies are present. The first column of results in the table shows adoption of fixed, wired technology, such as cable or fiber. The coefficients on the cable only and fiber only variables are small in magnitude and

not statistically significant, meaning we cannot reject the hypothesis that having both cable and fiber has no effect on adoption.

The second column shows the results of estimating the regression when the share of households with any internet, including mobile only, is the dependent variable. Here, too, the results do not support the notion that adoption is higher when cable and fiber are both present, as they suggest that adoption of any internet is highest in areas with only fiber, followed by areas with fiber and cable, and then areas with only cable. The results are statistically significant, but very small in magnitude: Each one percentage point increase in fiber coverage is associated with a 0.4 percentage point increase in adoption of any technology. These results are likely driven by the inclusion of mobile-only adoption in the dependent variable. The third column, in which the share of households with mobile-only coverage is the dependent variable shows similar results, consistent with the hypothesis that patterns in mobile adoption are driving this seemingly odd result.

As discussed, the Census data on broadband by income and race are connections of any type, including mobile only, so have the same potential problem just discussed. Table 3 shows the results of estimating the equation with internet adoption by income and race as the dependent variables. Again, the evidence does not support the hypothesis that areas with cable and fiber have more internet adoption than areas with only one or the other. Cable only, fiber only, and cable and fiber together areas do not have statistically different adoption rates, and the other groups show the same pattern as the overall result for any technology: negative for cable and positive for fiber, relative to having both cable and fiber, presumably also driven by patterns of mobile only adoption.

Table 3: Cable or Fiber Alone vs Cable and Fiber and Adoption by Income and Race

	Share of People with Specified Income with Any Internet Connection			Share of People of Specified Race with Any Internet Connection		
	<\$20k	\$20k-\$75k	>=\$75k	White	Black	Hispanic
Cable Only	-0.05 (0.13)	-0.26*** (0.06)	-0.22*** (0.07)	-0.40*** (0.06)	-0.36** (0.18)	0.01 (0.16)
Fiber Only	-0.18 (0.37)	0.36* (0.18)	0.41** (0.19)	0.37** (0.18)	0.78 (0.57)	0.78* (0.46)
Other	0.18 (0.55)	-0.03 (0.27)	-0.56* (0.29)	-0.59** (0.27)	0.88 (0.85)	-0.61 (0.70)
2018	3.08*** (0.05)	2.15*** (0.02)	0.98*** (0.03)	2.01*** (0.02)	2.40*** (0.06)	2.49*** (0.06)
2019	6.38*** (0.05)	4.37*** (0.02)	1.96*** (0.03)	3.97*** (0.02)	4.80*** (0.07)	4.94*** (0.06)
Constant	53.99*** (0.04)	74.53*** (0.02)	89.33*** (0.02)	81.55*** (0.02)	77.07*** (0.05)	79.76*** (0.05)
Obs.	218394	218394	218394	216079	190755	208646
R-squared	0.88	0.93	0.91	0.92	0.87	0.85
Tract Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

I also estimate these equations again using the share of the Census tract that has cable only, fiber only, and cable and fiber rather than indicator variables. These shares, though, may be measured with significant error. We derive them from the share of the population in the tract in each block that has access to the technology combinations. Still, it is a robustness check of the results above. The results, shown in Table 4, are similar to those above.

Table 4: Share of Population with Access to Cable, Fiber, and Cable & Fiber and Adoption

	Fixed	Any Internet	Mobile Only	<\$20k	Income \$20k-\$75k	>=\$75k	White	Race Black	Hispanic
Share with cable	0.002 (0.002)	0.23 (0.19)	-0.18 (0.14)	0.42 (0.61)	0.12 (0.3)	0.58* (0.32)	0.7** (0.3)	-2.13** (0.89)	0.43 (0.75)
Share with fiber	0.001 (0.002)	1.34*** (0.21)	0.52*** (0.15)	-0.19 (0.65)	0.6* (0.32)	1.36*** (0.34)	1.55*** (0.32)	-1.53 (1.01)	2.77*** (0.8)
Share with cable and fiber	0.004* (0.002)	-0.89*** (0.22)	-0.6*** (0.16)	0.35 (0.67)	-0.29 (0.33)	-1.24*** (0.35)	-0.91*** (0.33)	1.81* (1.04)	-2.47*** (0.83)
2017	-0.02*** (0.0002)	-4.66*** (0.02)	-2.72*** (0.01)	-6.37*** (0.05)	-4.36*** (0.03)	-1.96*** (0.03)	-3.92*** (0.03)	-4.8*** (0.07)	-4.88*** (0.06)
2018	-0.01*** (0.0002)	-2.34*** (0.02)	-1.34*** (0.01)	-3.3*** (0.05)	-2.22*** (0.02)	-0.97*** (0.03)	-1.95*** (0.02)	-2.4*** (0.06)	-2.42*** (0.06)
Constant	0.66*** (0)	80.79*** (0.17)	10.64*** (0.12)	60.03*** (0.54)	78.76*** (0.26)	90.85*** (0.28)	84.53*** (0.26)	83.67*** (0.81)	84.1*** (0.67)
Observations	217989	216619	216619	217989	217989	217989	216078	190755	208646
R-squared	.98	.97	.92	.88	.92	.9	.92	.87	.85
Tract Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

The one difference between Table 2 and Table 4 is that the regression using shares shows a statistically significant, but extremely small, positive relationship between the share of the households with access to cable and fiber and fixed line subscriptions. An increase from zero to 100 percent of households with cable and fiber available would be associated with an increase of 0.4 percentage points in adoption.

Discussion

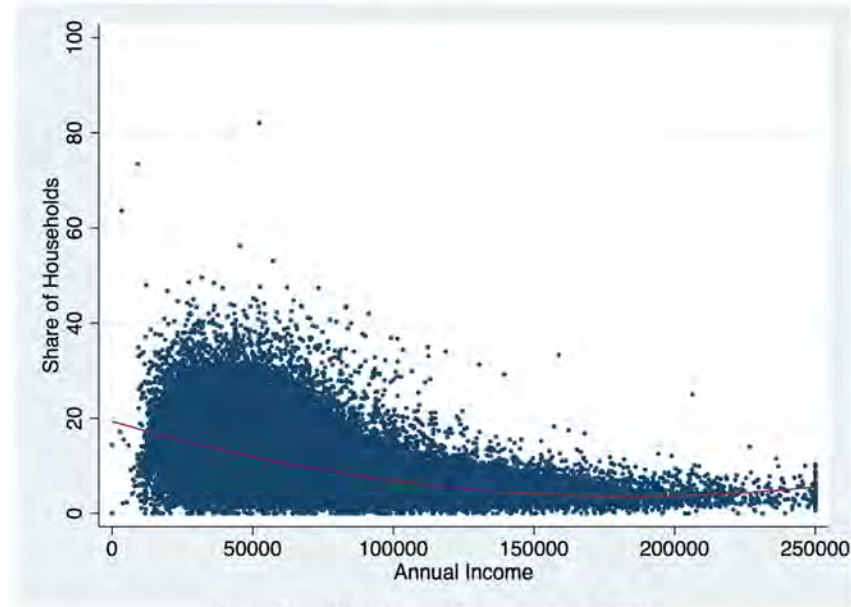
It is not possible to explore with this data why competing cable and fiber providers do not affect adoption relative to having only a cable or fiber provider, but we can hypothesize.

First, wireless competition—via cellular and fixed wireless—may be enough of a competitor to wireline for enough people that the additional competition from a second high-quality wireline provider has limited effect on adoption. While still small, an increasing share of households are mobile broadband only—nearly 12% by 2019, as shown above. In that case, it would not make conceptual sense to think of cable or fiber being lone competitors since those areas almost always have wireless providers.

This mobile effect may be particularly true for low-income households. Data from the National Center for Health Statistics show that low-income people are more likely to be mobile only for

voice.⁸ Broadband data suggest the same is true for broadband (Figure 3). This correlation is sensible considering that low-income people move homes more frequently than wealthier people,⁹ potentially making them less likely to sign up for a service tied to a single location.

Figure 3: Share of Households with Only Mobile Broadband by Income at the Census Tract Level, 2019



Source: Derived from American Community Survey, 2019

Second, broadband demand may have become inelastic enough that the number of connections is not affected much by changes in price. Demand by low-income people may also be inelastic. While people who do not subscribe to home broadband reliably list affordability and relevance as the top two reasons for not subscribing, in the real world, low prices have not been sufficient to encourage large numbers of low-income people to subscribe.¹⁰

⁸ Stephen J. Blumberg and Julian V. Luke, "Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2019" (National Center for Health Statistics, September 2020), <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless202009-508.pdf>.

⁹ Peter J. Mateyka, "Desire to Move and Residential Mobility: 2010–2011" (U.S. Census, Economics and Statistics Administration, March 2015), <https://www.census.gov/content/dam/Census/library/publications/2015/demo/p70-140.pdf>.

¹⁰ See, for example, Wallsten (2016) or Rosston and Wallsten (2020). Wallsten, Scott. "Learning from the FCC's Lifeline Broadband Pilot Projects." Technology Policy Institute Working Paper, March 2016.

Relatedly, it is possible that entry level home wireline broadband prices for low-income people have little room to come down, given that every major provider offers plans ranging from \$10 - \$20 per month to qualifying households. And given that those households are eligible for a \$9.25 per month Lifeline subsidy, in principle many can get service for close to zero dollars, although in practice Lifeline subsidies tend to be used for mobile rather than fixed service.

Third, providers may choose to compete on areas other than those that would affect adoption, particularly when unconnected households are reluctant to get online. Providers do not compete solely to solve the digital divide. Providers may compete with each other for existing subscribers instead of for new ones.

An important caveat to this discussion is that we still know little about how the pandemic itself has affected demand. Some evidence suggests, not surprisingly, that demand has increased. Specifically, the number of broadband subscribers as reported on providers' SEC filings suggest an inflection point in the increase in subscribers when the pandemic hit.¹¹ That could mean either that the remaining unconnected are more likely to respond to incentives to connect because the benefits of subscribing are larger or that they are less likely to respond to incentives because the people who would subscribe when the benefits of doing so increase already have.

These results do not imply that facilities-based competition is unimportant. It is. ISPs compete along many dimensions in ways that benefit consumers. Instead, the results simply show that competition is unlikely to be the key to getting the last group of offline people to subscribe even when they have access to fixed and mobile providers.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2757149, Rosston, Gregory L., and Scott Wallsten, "Increasing Low-Income Broadband Adoption through Private Incentives," *Telecommunications Policy* 44, no. 9 (October 2020): 102020. <https://doi.org/10.1016/j.telpol.2020.102020>.

¹¹ <https://techpolicyinstitute.org/2021/02/10/covid-19-is-narrowing-the-digital-divide/>



May 5, 2021

The Honorable Michael Doyle
Chairman
Subcommittee on Communications &
Technology
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Robert Latta
Ranking Member
Subcommittee on Communications &
Technology
2125 Rayburn House Office Building
Washington, DC 20515

Re: Broadband Equity: Addressing Disparities in Access and Affordability

Dear Chairman Pallone and Ranking Member

The Electronic Frontier Foundation (EFF) has been at the forefront of studying the future of broadband access in the high-speed market. It has conducted in-depth research that has produced both legal and technical publications on the issue. EFF's goal for broadband access is the deployment of universally available, affordable, and competitive high-speed networks. EFF focuses on, and recommends the government do the same, fiber-optic infrastructure because it is the only data-transmission medium capable of delivering 1) low-latency connections to homes; 2) speed upgrades for generations to come that far exceed alternative last mile options; 3) substantial cost savings to government subsidy efforts for low-income access; 4) ubiquitous 5G coverage and low earth orbit satellites, as it is a necessary component for both of these alternatives.

The disparity in broadband access extends far beyond the digital divide and beyond just rural markets. The pandemic revealed conclusively that differing infrastructures yield very different results in broadband speeds, capacity, pricing, and most importantly capability to deliver access in coordination with government support efforts. During the pandemic, some communities were able to get access to free gigabit broadband services,¹ while others were forced to spend large sums of funding to rent out capacity limited mobile hotspots. At the heart of all of this is how much fiber wireline infrastructure, a conclusively superior medium for transmitting data,² is present in a community and its proximity to residential homes. Even a single nearby fiber strand can mean the difference between being able to support a mesh wireless network delivering 100s of Mbps of wireless broadband access or being forced to subsidize internet access services options that fall below even the outdated 2015 federal definition of broadband.

¹ BERKELEY PUBLIC SCHOOLS, *Sonic to Offer Free Gigabit Internet to BUSD Student Households* (Feb 11, 2021), available at <https://www.berkeleyschools.net/2021/02/sonic-to-offer-free-gigabit-fiber-internet-to-busd-student-households-sonic-ofrecera-internet-de-fibra-optica-gratis-en-los-hogares-de-estudiantes-de-busd/>; WRCB Staff, *Hamilton County Schools Announce Initiative to Help Thousands of Students Gain Internet Access*, WRCBTV (Jul. 29, 2020), available at <https://www.wrcbtv.com/story/42427727/update-hamilton-county-schools-announce-initiative-to-help-thousands-of-students-gain-internet-access>.

² Bennett Cyphers, *The Case for Fiber to the Home, Today: Why Fiber is a Superior Medium for 21st Century Broadband*, EFF Deeplinks Blog (Oct 11, 2019), https://www.eff.org/files/2019/10/15/why_fiber_is_a_superior_medium_for_21st_century_broadband.pdf.



Federal policy can remedy these inequities by addressing digital redlining in dense urban markets where deployment is being done in a socio-economically discriminatory fashion, identifying where fiber wireline infrastructure is located in order to facilitate sharing, and enabling various public and public/private models of fiber infrastructure with a substantial investment by local, state, and the federal government.

Digital Redlining Must Be Banned by the FCC and the States

Study³ after study⁴ shows that major national ISPs have decided to invest in fiber-optic infrastructure mostly in wealthy neighborhoods in large, densely populated cities while skipping low-income neighborhoods in those same cities. The result of this “digital redlining” is the formation of a first- and second-class broadband infrastructure where wealthy communities easily access 21st century opportunities with low-cost, fast internet while everyone else is left behind. This is different than the rural challenge, which is that of access and cost challenges due to density. The rural challenge can be solved by public investment in public infrastructure—such with the passage of Majority Whip Clyburn’s Accessible, Affordable Internet for All Act. The problem of digital redlining, however, stems from the extra profitability of discrimination even in otherwise generally profitable to serve communities and must be stopped through regulation.

Make no mistake: communities that do not receive investments in fiber infrastructure will, over the years, face more expensive plans for worse access. They will not only miss out on the benefits of faster services, but over time, the costs of provisioning broadband to them will increase while failing to keep up with demand.⁵ As applications and services continue to require more bandwidth, a community left with an underinvested legacy infrastructure will simply be unable to fully utilize the Internet and no amount of government subsidy effort will reverse that without considering the infrastructure.

A driving factor for digital redlining of fiber deployments stems from the three-to-five year return on investment formulas major ISPs have self-imposed. This emphasis on delivering fast profits is incompatible with making long term investments in fiber infrastructure. A longer, 10-year return on investment formula radically changes the deployment plan of an ISP, as evidenced by Frontier Communications bankruptcy filings, suddenly finding an additional 3 million of its customers profitable to serve with fiber under the new formula.⁶ The absence of regulation drives major incumbent ISPs towards shorter timeframes for their investors and more discrimination.

³ Galperin, H., Bar, F., Kim, A.M., Le, T.V., Daum, K., *Who Gets Access to Fast Broadband? Evidence from Los Angeles County*, Spatial Analysis Lab at USC Price, Annenberg School for Communication (Sept. 2019), <http://annex.org/wp-content/uploads/2019/10/Policy-Brief-4-final.pdf>.

⁴ Communications Workers of America & National Digital Inclusion Alliance, *AT&T’s Digital Redlining Leaving Communities Behind for Profit* (Oct. 2020), available at <https://cwa-union.org/sites/default/files/20201005anddigitalredlining.pdf>.

⁵ State of New Mexico Broadband Strategic Plan and Rural Broadband Assessment (2020) at page 89, available at <https://www.ctcnet.us/wp-content/uploads/2020/07/New-Mexico-Broadband-Strategic-Plan-20200616.pdf>.

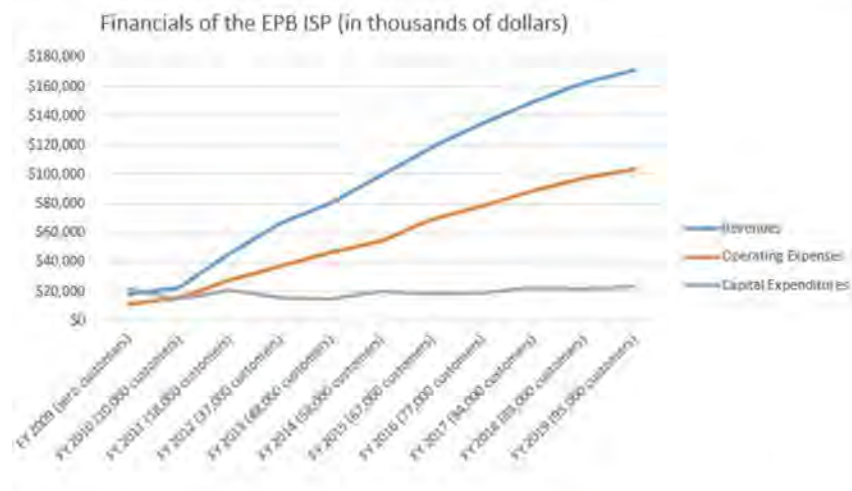
⁶ Frontier Communications, *Presentation to Unsecured Bondholders* (Jan. 2020), available at https://www.sec.gov/Archives/edgar/data/20520/000114036120007104/nc10009883x2_ex99-1.htm.



Historically, regulations prohibiting deployment based on socioeconomic status resulted in ubiquitous equivalent access in major cities and the same will be true with a reapplication of build-out rules today.

There should be no doubt that major cities are completely profitable to serve *in their entirety* for large incumbent ISPs *without* government subsidy because they have sufficient density and subscriber base to generate profits at the aggregate level while deploying ubiquitous fiber. Yet, the absence of rules to require large incumbent ISPs to adopt universal deployment plans that reach everyone results in discriminatory deployment.

For example, Oakland, California has a density of 7,004 people per square mile,⁷ rating it as one of the most densely populated cities in the U.S. However, systemic digital redlining has occurred coinciding with housing discrimination patterns of the past.⁸ By comparison, Chattanooga, Tennessee⁹ has around 1/5th the population density of 1,222 per square mile, yet full deployment of fiber to the home (FTTH) has occurred with revenues far exceeding costs. Chattanooga's public financial data shows that only a fraction of the population is necessary to cover the costs of providing a FTTH network to an entire community—with revenues outpacing the costs of adding new customers year after year (see chart below) and upgrade costs to future speeds barely impacting the operations costs of the ISP due to it being a fiber network.



⁷ UNITED STATES CENSUS, Oakland, available at <https://www.census.gov/quickfacts/oaklandcitycalifornia>.

⁸ Vincent Le and Gissela Moya, *On the Wrong Side of the Digital Divide: Life Without Internet Access, and Why We Must Fix It in the Age of COVID-19*, THE GREENLINING INSTITUTE (June 2, 2020), <https://greenlining.org/publications/online-resources/2020/on-the-wrong-side-of-the-digital-divide>.

⁹ UNITED STATES CENSUS, Chattanooga city, Tennessee, available at <https://www.census.gov/quickfacts/chattanooga-city-tennessee>.



Moreover, a recent study of the cost of bandwidth and the prices consumers pay found that Chattanooga's costs for bandwidth are comparable with the most competitive markets in the world.¹⁰ In essence, not only do major ISPs try to boost their profits by discriminating against low-income neighborhoods, but they charge high-income neighborhoods far more for high-speed access than they would in a more competitive climate.

To the extent local barriers inhibit an ISP from deploying, federal policy enforced by the FCC can establish a process to eliminate barriers that result in making otherwise economically feasible-to-serve households infeasible. ISPs can demonstrate those barriers by detailing how a specific community's cost per household is significantly above a comparable market due to local factors. In exchange for intervention, a build-out deadline would be attached to the regulatory benefit. However, should the FCC determine that no meaningful barriers exist that prohibit an ISP from fully serving the entirety of a major city with equivalent services, then the ISP either remedies the situation with a build-out plan or the FCC should intervene to promote short term and long term solutions.

Such short-term remedies could include requiring the provider to open up their existing fiber to other smaller ISPs so that they can serve those communities. This enables smaller providers the ability to generate revenue and finance their own fiber deployments. Longer term solutions require a revisiting of the 2005 FCC decision to not require the sharing of incumbent fiber infrastructure to promote competition. Clearly if fiber infrastructure is not reaching everyone even in commercially feasible markets, the original premise of the FCC's 2005 decision to abandon the sharing of fiber infrastructure was wrong. EFF's own research into the regulatory justifications to not require sharing obligations of fiber infrastructure by established incumbents in light of the lack of competition and fiber deployment have not panned out today.¹¹ A new approach can yield significant improvements in the broadband market. For example, South Korea required fiber infrastructure to be shared in order to quickly promote national high-speed 5G coverage.¹²

Communities Have No Readily Identifiable Way to Locate Fiber Infrastructure to Facilitate Local Solutions

Access to existing fiber capacity at competitive market rates can enable small wireless ISPs to assist their local communities' broadband needs. For example, Common Networks serves much of the low-income community within Alameda County, California¹³ because it had access to

¹⁰ Becky Chao & Claire Park, *The Cost of Connectivity*, Open Technology Institute (Jul. 15, 2020), available at <https://www.newamerica.org/oti/reports/cost-connectivity-2020>.

¹¹ Elliott Browning, *Managing Last-Mile Monopolists: Reevaluating Sharing Obligations for the Modern U.S. Wireline Broadband Market*, ELECTRONIC FRONTIER FOUNDATION (Mar. 22, 2019), <https://tlpc.colorado.edu/wp-content/uploads/2019/05/2019.05.22-TLPC-EFF-Broadband-Sharing-White-Paper-Final.pdf>.

¹² Joseph Waring, *KT Dissatisfied with Government 5G Fiber Plan*, MOBILE WORLD LIVE (Apr. 13, 2018), available at <https://www.mobileworldlive.com/featured-content/asia-home-banner/kt-dissatisfied-with-government-5g-fibre-plan>.

¹³ Common Networks, *Common Networks Brings Discounted Internet to the Largest Low-Income Housing Community in Alameda County* (May 19, 2020), available at <https://www.prnewswire.com/news->



competitive middle mile fiber in Oakland. Another example is the small town of Dillon Beach, California (population of 400) where a father determined to get broadband access for his daughter to do her schoolwork drove around town following the AT&T truck until he found a nearby wireless tower. He then contacted AT&T repeatedly until they agreed to let him pay to draw a fiber line into his garage to launch his own broadband small business.¹⁴ Fortunately for him, the distance to draw the fiber line was minimal, resulting in \$12,000 in costs. If he was never able to identify the location of fiber, he would have been unable to solve his own problem.

Both of these fiber-based wireless solutions in different markets came into existence because they discovered the location of the fiber line and had a willing seller for capacity. Facilitating this natural organic growth of broadband markets can be done with publicly available data. EFF has recommended both to the states and FCC that mapping of broadband efforts go beyond just measuring speeds and include fiber mapping in order to inform potential local private and public partners of the location of fiber capacity. In an ideal scenario a local player can view the map and contact the provider that owns the nearest fiber and enter into an arrangement for purchasing capacity. However, in the instances that access to fiber capacity is being unreasonably withheld, the FCC and states should intervene in such cases where such withholding is preventing a community from self-provisioning high-speed access. Unless a holder of fiber infrastructure is in the process of extending to that community, allowing for withholding of a high-capacity resource will drive up the costs of local solutions and ultimately stymie universal access efforts.

New Models Need to be Promoted to Reach Universal 21st Century-Ready Access

Fiber's flexibility and capacity for multiple shared uses without congestion problems creates a lot of opportunities for shared uses. In particular, an open access fiber infrastructure can sustainably deploy fiber because it can attract multiple revenue sources given that it can support 5G high-speed wireless, low-earth-orbit satellite data networks, electrical grid communications, transportation monitoring, cloud computing, public safety, distance education, telehealth, real-time applications, earthquake detection, and ISP competition. We are seeing states take the lead on these new business models, but they lack federal support from the FCC and Congress with a robust future proof focused infrastructure program.

Alabama, for example, has demonstrated the potential for joint ventures. Its state legislature passed a law clarifying that electric utilities could leverage their easements and private rights-of-way to enable telecommunications services over their fiber assets.¹⁵ As a result, Mississippi-based C Spire and Alabama Power have jointly invested and begun sharing fiber infrastructure to mutually support the needs of both electricity and telecommunications. Homes in Birmingham, Shelby County, and other parts of the state will now obtain FTTH from C Spire. Such partnership would not have happened without policy from the state government to promote efficient infrastructure sharing.

[releases/common-networks-brings-discounted-internet-to-largest-low-income-housing-community-in-alameda-county-301061867.html](https://www.eff.org/releases/common-networks-brings-discounted-internet-to-largest-low-income-housing-community-in-alameda-county-301061867.html).

¹⁴ Mimosa Networks, *Dillon Beach internet Lights up California Beach Town with Mimosa*, available at <https://mimosa.co/case-studies/dillon-beach-internet-lights-up-california-beach-town-with-mimosa>.

¹⁵ H.B. 400, 2019 Leg., Reg. Sess. (Al.), <https://legiscan.com/AL/bill/HB400/2019>.



The C Spire/Alabama Power model operates on the premise that C Spire is granted exclusivity in exchange for gaining access to the utility's fiber network in order to justify C Spire's costs in updating the fiber lines to serve telecommunications needs. The exclusivity gave C Spire the confidence that their investments in the utility's fiber network to make it broadband-ready could be recovered from newly connected customers, while Alabama Power was assured that C Spire would try to attract as many customers as possible to provide a stable and growing revenue base to the electric utility, resulting in lower rates. Through a revenue-sharing agreement, a telecom could dramatically save on their fiber deployment costs by paying an electric utility for access to their fiber network, while the utility's fiber construction costs would be reduced by obtaining a new revenue stream.

In any joint venture model, the Congress and FCC can encourage the merger of these interests but also promote competition through open-access policies—even with initial exclusivity arrangements. Specifically, exclusivity should be seen as a means to help the electric utility recover its one-time construction costs for deploying fiber while reducing telecommunications providers' costs because they need not build a duplicative fiber network. The telecom provider will have reaped the initial benefit of exclusivity, the electric utility will have reduced the cost on ratepayers for financing the fiber, and end users will initially gain high-speed access and eventually competition when the exclusivity expires.

Another form of open access has been taking place in Utah where more and more households are connected to an expanding open-access fiber network run by local cities where residents enjoy 11 private small business options for gigabit service.¹⁶ This type of approach to broadband infrastructure, where the government builds the wires and shares its capacity to broadband providers, holds tremendous promise. Privately financed¹⁷ open access exists in the EU but required changes in the European Electronic Communications Code designed around promoting their entry to assist in the effort to deploy national fiber infrastructure.¹⁸ It will remain limited in the United States, though, so long as federal broadband infrastructure policy remains stuck in past thinking that subsidizing any qualifying broadband service at slow speeds is good enough while ignoring the necessity to future proof investments.

Sincerely,

Electronic Frontier Foundation

¹⁶ Utopia Fiber, Residential Pricing, <https://www.utopiafiber.com/residential-pricing> (last visited February 4, 2020).

¹⁷ Infracapital and Macquarie Capital are examples of the type of entities regularly investing in fiber infrastructure in the EU, see *Infracapital and Nokia named preferred bidder for Polish Fibre Broadband Network* (Jun. 15, 2017), available at <https://www.infracapital.co.uk/Controls/Brochure/-/media/Literature/UK/Infracapital/Infracapital-and-Nokia-named-preferred-bidder-for-Polish-fibre-broadband-network.pdf>; see *Macquarie Capital to Acquire Fibre Broadband Network in Move to Create Spain's First Independent Wholesale Bitstream Operator* (Nov. 6, 2019), available at <https://www.macquarie.com/us/en/about/news/2019/macqap-to-acquire-fibre-broadband-network-in-move-to-create-spains-first-independent-wholesale-bitstream-operator.html>.

¹⁸ *Europe's wholesale-only and open access operators form new alliance to accelerate the rollout of fiber networks*, REYKJAVIK FIBRE NETWORK (last visited Feb. 3, 2019), <http://www.reykjavikfibre.network.is/news/europes-wholesale-only-and-open-access-operators-form-new-alliance-accelerate-rollout-fiber>.



The Honorable Chairman Frank Pallone Jr.
Committee on Energy & Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

May 5th, 2021

To: The Subcommittee on Communications and Technology of the Committee on Energy and Commerce

Re: Hearing on "Broadband Equity: Addressing Disparities in Access and Affordability"

From: The National Digital Inclusion Alliance

On January 29th, 2020, The National Digital Inclusion Alliance's (NDIA) Executive Director, Angela Siefer testified before the Subcommittee on Communications and Technology of the Committee on Energy and Commerce at the hearing on "Empowering and Connecting Communities through Digital Equity and Internet Adoption." At the time, Siefer said, "The most successful digital inclusion programs are rooted in the communities being served,"¹ but that funding for state and local digital equity planning and implementation was missing as was the need for an increased awareness of the problem of the digital divide as well as solutions for it.

Within six weeks of the hearing, the world shut down due to COVID-19 and awareness of the problems the digital divide causes was suddenly universal. Through the CARES Act, ARPA, and the Consolidated Appropriations Act, Congress swiftly directed funding and support aimed at closing the digital divide with a mix of short-term and long-term solutions. Even so, the digital divide still persists.

In addition, the pandemic has accelerated the rate at which this funding is needed and illuminated the need for a high-touch, highly personalized approach to closing the digital divide. As the Connecticut Commission for Educational Technology found in their Home Connectivity Report², closing the digital divide is complicated. Even when provided a no-cost internet subscription, many K-12 families opted out of the program because of a variety of factors such as a distrust of the ISPs, privacy concerns, or confusion about their eligibility for the program.³ Closing the digital

¹ Angela Siefer, House of Energy & Commerce Hearing on Empowering & Connecting Communities Through Digital Equity and Internet Adoption' January 29, 2020
<https://energycommerce.house.gov/committee-activity/hearings/hearing-on-empowering-and-connecting-communities-through-digital-equity>

² Home Internet Connectivity : Barriers and Opportunities to closing the Digital Divide for Connecticut Students. Connecticut Commission for Educational Technology. (February 22, 2021).
https://portal.ct.gov/-/media/DAS/CTEdTech/publications/2021/2021_CET_K-12_Winter_Connectivity.pdf

³ Ibid p. 5 CT reference

divide will not be easy or cheap. It will require strategic, thoughtful policies, bold leadership, intergovernmental collaboration, and a large investment in human capital to ensure all residents are equipped with the technologies and tools required to thrive in the 21st century. As we all witnessed during the COVID-19 pandemic, the cost of not closing the digital divide is too great. To that end, NDIA recommends Congress take the following actions to address disparities in access and affordability:

1. Allocate funding for state and local digital equity planning and implementation
2. Allocate funding for community-based digital equity planning
3. Establish an Office of Digital Equity in the U.S. Department of Commerce's National Telecommunications and Information Administration
4. Extend the Emergency Broadband Benefit Program and address low-income affordability through a permanent benefit
5. Invest in broadband networks built to address affordability
6. Create a National Digital Inclusion Corps
7. Ensure broadband cost data transparency
8. Direct funding derived from spectrum auctions proceeds to establish an independent fund dedicated to funding digital equity initiatives

As follows is a brief overview of each recommendation.

Allocate funding for state digital equity planning and implementation

As outlined in the Digital Equity Act of 2019⁴ and the Accessible, Affordable Internet for All Act⁵ dedicated funding is needed to support state digital equity planning and implementation. Congress should allocate \$2.62 billion to the U.S. Department of Commerce's National Telecommunication and Information Administration (NTIA) to establish the following:

- \$120 million for the establishment of a State Digital Equity Planning Grant Program
- \$1.25 billion for the establishment of a State Digital Equity Capacity Grant Program to implement digital equity plans
- \$1.25 billion for the establishment of a National Digital Equity Competitive Program for digital inclusion activities

Allocate funding for community-based digital equity planning

The pandemic has made it clear that in addition to the need for comprehensive digital equity planning at the state level, individual communities must also plan and organize strategies to effectively address their community's digital divide. Understanding an individual community's

⁴ Digital Equity Act, S.1167, 116th Cong. (2019)

⁵ Accessible Affordable Internet For All Act, H.R. 7302, 116th Cong. (2020)



unique assets and gaps is essential to effectively addressing the community's digital access needs. Community based solutions are often overlooked and underfunded. Meanwhile, they are highly effective in increasing broadband adoption and use.⁶ Congress should allocate \$1 billion to the U.S. Department of Commerce's National Telecommunication and Information Administration (NTIA) in block grants to states to distribute and provide support to localities to conduct local digital equity planning.

Establish an Office of Digital Equity in the U.S. Department of Commerce's National Telecommunications and Information Administration

As outlined in the Lewis Latimer Plan for Digital Equity and Inclusion,⁷ NDIA recommends Congress should establish an Office of Digital Equity to coordinate across federal agencies and initiatives to increase adoption of broadband at home, and to advocate for policies designed to achieve digital equity and inclusion. As its principal role aligns with community development, we think it best suited for the Department of Commerce, in the National Telecommunications and Information Administration (NTIA).

The Office would be the principal entity charged with meeting broadband adoption goals and tracking progress towards those goals. The Office would take on the responsibilities of the American Broadband Initiative, with an expanded scope of functions and new funding to help meet the goals. In addition, the Office would be the logical location to house the Digital Equity Act programs.

Extend the Emergency Broadband Benefit Program and Address Low-Income Affordability Through a Permanent Benefit

While it deliberates how to best support low-income consumers get online in the long-term, Congress should extend the Emergency Broadband Benefit Program established through the Consolidated Appropriations Act of 2021⁸ established to help lower the cost of high-speed internet for eligible households during the ongoing COVID-19 pandemic. As the program is temporary in nature and has been estimated to remain in place anywhere between two and ten months,

⁶ John Horrigan. Reaching the Unconnected Benefit for kids and schoolwork drive broadband subscriptions, but digital skills training open doors to household internet use for jobs and learning. Technology Policy Institute. (August 2019).

https://techpolicyinstitute.org/wp-content/uploads/2019/08/Horrigan_Reaching-the-Unconnected.pdf

⁷ The Lewis Latimer Plan For Digital Equity and Inclusion, National Urban League. 11 (April 2021)

https://nui.org/sites/default/files/2021-04/NUL%20LL%20DEIA%20041421%20Latimer%20Plan_vFINAL_1136AM.pdf

⁸ Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, div. N, tit. IX, § 904, 134 Stat. 1182, 2130 (2020), available at <https://www.congress.gov/bill/116th-congress/house-bill/133/text> (Consolidated Appropriations Act)



extending the program by allocating additional funds could help bridge the gap for many households in getting and remaining online until additional or alternative solutions are derived.

Simultaneously, Congress should address low-income affordability through the establishment of a permanent support mechanism for low-income households. While Congress should work to decrease broadband subscription costs for all U.S. households, analysis shows that merely addressing market rate affordability will not be sufficient for low-income households.⁹ No matter the cost, some U.S. households will not be able to afford a subscription and for those households a permanent support solution is necessary. Congress should use lessons learned from the EBB to create a sustainable, flexible, and accessible support program for low-income households.

Invest in broadband networks built to address affordability

The connectivity crisis created by the pandemic has spurred a number of communities to create or expand broadband alternatives, aimed at providing decent connection speeds for lower-income neighbors at very low cost (or no cost), and/or quickly filling availability gaps in commercially underserved areas. They range from community wi-fi networks and public access points, to local nonprofit wireless ISPs building and operating extensive private LTE and millimeter-wave systems. What they share is a mission-driven operating philosophy, and the ability to leverage community partnerships and community volunteers to meet community needs.

Congress should dedicate funds to support non-traditional, not-for-profit broadband network initiatives serving communities -- urban as well as rural -- where adequate internet service is unavailable, or where lower-income households cannot afford the available commercial services.

Create a National Digital Inclusion Corps

As outlined in the Lewis Latimer Plan for Digital Equity and Inclusion¹⁰ Congress should direct the NTIA and the Corporation for National and Community Service (CNCS) to create the Digital Inclusion Corps. In collaboration, NTIA and CNCS can explore best-practice models for building and managing the Corps, leveraging lessons learned from existing programs like AmeriCorps, Senior Corps and Learn and Serve America. The Digital Inclusion Corps would provide much needed capacity to community based organizations working to solve a wide range of identified adoption issues—including home connectivity, devices, and digital skills—on behalf of local community members, either remotely or in-person.

⁹ John Horrigan. *Focusing On Affordability: What Broadband Adoption Rates In Cities Tell Us About Getting More People Online*. Benton, (April 19, 2021). <https://www.benton.org/blog/focusing-affordability>

¹⁰ *Id.* at The Lewis Latimer Plan For Digital Equity & Inclusion 63

In 2018, NDIA concluded a two-year pilot program funded by the Institute for Museum and Library Services. Based on learnings from this pilot program and NDIA's affiliates such as NTEN¹¹ and The St. Paul Neighborhood Network's Community Technology Empowerment Project (CTEP)¹² who place digital inclusion fellows in community based organizations, NDIA identified a need for a systematic, national effort to embed digital inclusion champions in all communities and anchor institutions.

As the Latimer plan outlines, a national program can build on these successful models and ensure the expansion needed to address digital equity barriers. Specifically, Congress should direct the NTIA and the Corporation for National and Community Service (CNCS) to create the Digital Inclusion Corps. In collaboration, NTIA and CNCS can explore best-practice models for building and managing the Corps, leveraging lessons learned from existing programs like AmeriCorps, Senior Corps and Learn and Serve America. The Corps should target segments of the population that are less likely to have adopted broadband at home, including low-income individuals, racial and ethnic minorities, senior citizens, people with disabilities, those with lower education levels, people in rural communities, those on Tribal lands, and people whose primary or only language is not English.

Ensure Broadband Cost Data Transparency

As outlined in the Accessible, Affordable, Internet for All Act¹³, Congress should direct the Federal Communications Commission to collect data from the Internet Service Providers (ISPs) on prices charged for broadband service. The FCC should collect and publish this data for broad use by public interest groups, consumers, researchers, and other Federal agencies. This data is essential for benchmarking, measuring the efficacy of broadband adoption programs, and ensuring U.S. households are able to access affordable, high-quality broadband.

Direct funding derived from spectrum auctions proceeds to establish an independent, private digital futures foundation to fund digital equity initiatives

Congress should create an independent fund financed by windfall and future spectrum auction proceeds fully dedicated to funding digital equity initiatives and programs.¹⁴

¹¹ Leana Mayzlina, Recapping the 2019 Digital Inclusion Fellowship, NTEN (July 9, 2020)

<https://www.nten.org/article/recapping-the-2019-digital-inclusion-fellowship/>

¹² <https://www.spnn.org/CTEP>

¹³ Accessible Affordable Internet For All Act, H.R. 7302, 116th Cong. (2020)

¹⁴ Michael A. Calabrese, Lester Salamon. *How to Close America's Digital Equity Gaps: Toward a Digital Futures Foundation*. New America. (April 5, 2021).

<https://www.newamerica.org/oti/policy-papers/how-to-close-americas-digital-equity-gaps-toward-a-digital-futures-foundation/>



We assert it is time for a significant, sincere and long term investment in digital equity. Use of spectrum revenue would do just that.

Conclusion

Today folks on the ground who are "bridging the digital divide" are facilitating access to home internet service, devices and digital literacy training. NDIA represents these heroes. They are nonprofit organizations, libraries, local governments, housing authorities and more. NDIA represents over 500 affiliated organizations in 44 states, the District of Columbia and the U.S. Virgin Islands. Each of the recommendations outlined here is based on our affiliates' on-the-ground experience and research.





May 5, 2021

The Honorable Michael Doyle
Chair
House Committee on Energy & Commerce
Subcommittee on
Communications & Technology
Washington, D.C. 20515

The Honorable Robert Latta
Ranking Member
House Committee on Energy & Commerce
Subcommittee on
Communications & Technology
Washington, D.C. 20515

Dear Chair Doyle and Ranking Member Latta:

On behalf of the Healthcare Leadership Council (HLC), we thank you for holding a hearing on, "Broadband Equity: Addressing Disparities in Access and Affordability."

HLC is a coalition of chief executives from all disciplines within American healthcare. It is the exclusive forum for the nation's healthcare leaders to jointly develop policies, plans, and programs to achieve their vision of a 21st century healthcare system that makes affordable high-quality care accessible to all Americans. Members of HLC – hospitals, academic health centers, health plans, pharmaceutical companies, medical device manufacturers, laboratories, biotech firms, health product distributors, post-acute care providers, home care providers, and information technology companies – advocate for measures to increase the quality and efficiency of healthcare through a patient-centered approach.

The COVID-19 health pandemic has highlighted the need to improve broadband access to rural populations. The Federal Communications Commission (FCC) has found that approximately 18 million Americans do not have access to high-speed internet. Over 26% of that population lives in rural areas.¹ The lack of robust broadband infrastructure has limited rural access to essential digital services, such as receiving care via telehealth. Many of these communities already struggle from a lack of resources and their inability to receive robust broadband connectivity exacerbates this problem.

HLC appreciates Congress' role in increasing investment in broadband in the *Consolidated Appropriations Act*, but encourages additional support to strengthen broadband connectivity in rural communities and ensure that consumers are able to afford these services. Additionally, HLC encourages the Committee to examine issues of broadband connectivity in urban communities. Many of these communities also do not receive robust connectivity options and improving technology in these areas will also enable these individuals to access essential health services.

¹ Harmeet Kaur, *Why rural Americans are having a hard time working from home*, CNN (April 29, 2020), <https://www.cnn.com/2020/04/29/us/rural-broadband-access-coronavirus-lmd/index.html>.

HLC looks forward to working with you on steps to better connect vulnerable populations to broadband services. Should you have any questions please contact Tina Grande at (202) 449-3433 or tgrande@hlc.org.

Sincerely,

A handwritten signature in cursive script, reading "Mary R. Grealy". The signature is written in dark ink and is positioned below the word "Sincerely,".

Mary R. Grealy
President



KATE BROWN
GOVERNOR OF COLORADO
2021

JEAN LITTLE
GOVERNOR OF MONTANA
2021

JAMES D. OGSBURY
EXECUTIVE DIRECTOR
2021

May 6, 2021

The Honorable Michael F. Doyle
Chairman
Subcommittee on Communications
and Technology
Committee on Energy and Commerce
House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Robert E. Latta
Ranking Member
Subcommittee on Communications
and Technology
Committee on Energy and Commerce
House of Representatives
2322 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Doyle and Ranking Member Latta:

In conjunction with the Subcommittee's May 6, 2021 hearing, Broadband Equity: Addressing Disparities in Access and Affordability, attached please find Western Governors' Association (WGA) Policy Resolution 2020-08, Broadband Connectivity.

In the policy resolution, Western Governors highlight the importance of access to high-speed internet for many business, education, and health care applications and note the challenges that rural and Tribal communities often face. To address these issues, the Governors recommend improvements in broadband data and mapping and investments in scalable infrastructure. The Governors also support Tribal connectivity efforts and increased flexibility within the Federal Communication Commission's E-Rate Program to deliver home connectivity solutions for unserved and underserved students.

I request that you include this document in the permanent record of the hearing, as it articulates Western Governors' policy positions and recommendations on this important issue.

Thank you for your consideration of this request. Please contact me if you have any questions or require further information. In the meantime, with warm regards and best wishes, I am

Respectfully,

 A handwritten signature in black ink, reading 'Jim Ogsbury'.

James D. Ogsbury
Executive Director

Attachment



Policy Resolution 2020-08 Broadband Connectivity

A. **BACKGROUND**

1. High-speed internet, commonly referred to as "broadband,"¹ is the critical infrastructure of the 21st century and a modern-day necessity for businesses, individuals, schools and government. Many rural western communities lack the business case for private broadband investment due to the high cost of infrastructure and the low number of customers in potential service areas. This has left many rural businesses and citizens at a competitive disadvantage compared to those urban and suburban areas with robust broadband access.
2. Broadband connectivity promotes economic prosperity and diversity. Broadband connectivity is a key element of innovations in precision agriculture, telehealth, remote work and distance learning across the West.
3. Many broadband applications that promote rural, economic and community prosperity rely on speeds greater than 25/3 Mbps. This is especially true for functions that upload large amounts of data, such as telehealth, e-learning and business applications.
4. Western states have unique factors that make planning, siting and maintaining broadband infrastructure especially challenging and costly. These include vast distances between communities, challenging terrain, sparse middle mile and long-haul fiber-optic cable, and the need to permit and site infrastructure across federal, state, Tribal and private lands. Alaska, Hawaii, and the U.S. territories face particular broadband deployment challenges due to factors involving distance, cost and applicable technologies.
5. Western Governors and states are taking significant action to accelerate broadband deployment in rural communities. These actions include direct investment of state funds, reduction of regulatory hurdles, and promotion of public-private partnerships to deliver digital connectivity to unserved and underserved areas.
6. Many western states have sought to expedite broadband infrastructure deployment by adopting "Dig Once" policies, granting non-exclusive and non-discriminatory access to rights-of-way and facilitating efficient "co-location" of new broadband infrastructure on existing structures.
7. A number of federal agencies directly support rural broadband deployment projects and data collection in western states. These include the Federal Communications Commission (FCC), U.S. Department of Agriculture (USDA), National Telecommunications and Information Administration (NTIA) and Economic Development Administration.

¹ The Federal Communications Commission defines fixed "broadband" as service offering minimum speeds of 25 Megabits per second (Mbps) down and 3 Mbps up.

8. Federal land management agencies, particularly the U.S. Forest Service (USFS), Bureau of Land Management (BLM) and Bureau of Indian Affairs (BIA), play a crucial role in permitting and siting broadband infrastructure in western states.
9. Both the Department of the Interior (DOI) and USFS recently launched online mapping platforms identifying telecommunications infrastructure sites on federal lands. This information can be used to inform private and public broadband infrastructure investments.
10. High-quality data is necessary to ensure that public broadband deployment efforts are cost-effective and prioritize areas that either wholly or significantly lack access. Under its current Form 477 reporting protocols, the FCC considers a census block "served" if a single residence in the block has access to broadband. This practice overstates broadband availability in larger, rural census blocks common in western states. The FCC's use of "maximum advertised," not "actual," speeds when mapping broadband coverage further distorts reporting on the service customers receive.
11. Whether or not an area is considered "served" has significant effects on its eligibility for federal broadband infrastructure support. Inaccurate or overstated data prevents businesses, local governments, and other entities from applying for and securing federal funds to assist underserved or unserved communities.
12. S.1822, the Broadband Deployment Accuracy and Technological Availability (DATA) Act (Pub. L. 116-130), was enacted in March 2020. This law requires the FCC to change the way broadband data is collected, verified, and reported. Specifically, the FCC must collect and disseminate granular broadband service availability data from wired, fixed-wireless, satellite, and mobile broadband providers. The FCC is required to establish the Broadband Serviceable Location Fabric, a dataset of geocoded information for all broadband service locations, atop which broadband maps are overlaid, to report broadband service availability data.
13. Given the number of federal agencies and programs involved in supporting rural broadband deployment, it can be challenging for small, rural providers and communities to identify and pursue appropriate deployment opportunities. Businesses, local governments, electric and telephone cooperatives, Tribes and other rural entities can also face burdens in applying for and managing federal funds. These barriers include areas being incorrectly identified as "served" on broadband coverage maps, excessive application and reporting procedures, and significant match or cash-on-hand requirements.
14. Wireless spectrum is a valuable resource that can help support innovative and cost-effective connectivity solutions in western states.
15. Internet Exchange Points (IXPs) are vital elements of Internet infrastructure that enable networks to exchange traffic with each other. IXPs help promote low-cost data transmission and improved overall local Internet performance in the areas in which they are located.

16. Electric and telephone cooperatives have invested in broadband infrastructure across the West. In certain states, these cooperatives are the entities principally providing broadband to rural communities, often at relatively low costs to their members.
17. The FCC's 2020 Broadband Deployment Report estimates that 27.7 percent of Americans residing in Tribal lands lack fixed terrestrial broadband coverage, compared to 22.3 percent of Americans in rural areas and 1.5 percent in urban areas. A 2018 Government Accountability Office (GAO) Report² asserts that the FCC overstates broadband coverage on Tribal lands.
18. Tribal Nations, the majority of which are in western states, face many barriers to the deployment of communications services. These include rural, remote and rugged terrain; areas that are not connected to a road system; minimal access to middle mile and long-haul fiber-optic cable; and difficulty in obtaining rights-of-way to deploy infrastructure across some Tribal lands. These factors can all increase the cost of installing, maintaining, and upgrading infrastructure.
19. Tribal Nations also face challenges securing funds through federal broadband deployment programs. A separate 2018 GAO Report³ included a review of four federal broadband programs (three FCC, one USDA), and found that from 2010 to 2017, less than 1 percent of funding has gone directly to Tribes or Tribally owned providers.
20. Access to wireless spectrum is another crucial issue for Tribal Nations. In February 2020, the FCC opened a priority filing window for rural Tribes to access 2.5 GHz spectrum in advance of an upcoming spectrum auction. This spectrum is well-suited to provide low-cost broadband service in rural areas.
21. Federal programs often direct broadband infrastructure funding to community anchor institutions such as schools, libraries and health centers. These anchor institutions can help leverage additional public and private investments in surrounding rural areas. Holistic funding approaches that support infrastructure deployment "to and through" community anchor institutions can help promote connectivity for students, patients and community members.
22. Western Governors appreciate USDA Rural Development's efforts to promote broadband connectivity across the rural West. USDA's many offerings, including the ReConnect Program, Community Connect Grants, and Distance Learning and Telemedicine Grants, all help promote prosperity and quality of life in western states.
23. Western Governors have provided significant feedback on the design of the ReConnect program, launched in December 2018. Notably, Western Governors recommended that the ReConnect Program, "prioritize communities that either wholly or severely lack access to broadband," and, "reward project applications that will deliver speeds that ensure rural communities can prosper now and into the future as their data transmission needs expand."

² Government Accountability Office: FCC's Data Overstate Access on Tribal Lands. September 2018.

³ Government Accountability Office: Few Partnerships Exist and the Rural Utilities Service Needs to Identify and Address Any Funding Barriers Tribes Face. September 2018.

24. The ReConnect Program contains a requirement that areas designated to receive support through the FCC's Connect America Fund Phase II (CAF-II) can only pursue ReConnect funding through the entity that is receiving CAF-II support. This restriction limits deployment of adequate broadband capability in many rural areas.
25. The COVID-19 pandemic has amplified the importance of reliable broadband connectivity as businesses, schools and health care systems have transitioned to digital platforms and practices. The transition to digital learning has been particularly difficult for many rural and low-income communities and K-12 schools due to lack of broadband connectivity at home. Western states have employed creative strategies to address student connectivity and "homework gap" issues within our communities. These efforts include using parking lots and school and transit buses to launch public wi-fi hotspots.

B. GOVERNORS' POLICY STATEMENT

1. Western Governors encourage Congress and federal agencies to recognize that the current definition of broadband – 25/3 Mbps – does not correspond with the requisite download and upload speeds necessary to support many business, education and health care applications that promote economic and community prosperity. We support efforts to adopt a higher, scalable standard that more accurately reflects modern innovations and bandwidth demands.
2. Regulations affecting broadband infrastructure permitting and siting vary by state and can create additional obstacles to private and public investment. Where possible, Western Governors should work together to minimize this barrier.
3. Western Governors recommend the FCC, USDA and other federal agencies involved in broadband deployment pursue strong partnerships with Governors and state agencies. Improved coordination related to broadband coverage data collection and verification and public investment can help ensure that public funds are directed to areas in most need of assistance.
4. Western Governors encourage the BLM, BIA and USFS to pursue strategies to prioritize reviews for broadband infrastructure permits on federal lands. We support efforts to improve permitting timelines for broadband infrastructure co-located with existing structures and other linear infrastructure, such as roads, transmission lines and pipelines. We encourage improved planning and permitting coordination between public lands management agencies, as telecommunications projects in western states can cross multiple federal lands jurisdictions. DOI and USFS's online mapping platforms identifying telecommunications infrastructure sites on their lands will be helpful tools to accomplish this goal.
5. Western Governors are encouraged that new data and mapping platforms established by the Broadband DATA Act (Pub. L. 116-130) incorporate state-level data wherever possible. State broadband offices and representatives can offer invaluable information and on-the-ground perspectives regarding broadband coverage in western states. We encourage Congress to provide the FCC with the necessary funds to implement the Act.

6. Western Governors encourage Congress and federal agencies to address application barriers for businesses, local governments, cooperatives, Tribes and other entities involved with broadband deployment in rural communities.
7. Western Governors appreciate the USDA and the FCC's efforts to promote on-farm connectivity and the growth of the precision agriculture sector. We encourage both agencies to engage with Governors' offices, state broadband representatives and state departments of agriculture as they pursue policy and program initiatives to support advanced agriculture technology development and adoption.
8. Western Governors recommend that adequate wireless spectrum be allocated to support advanced and emerging agricultural technologies.
9. Western Governors emphasize the growing importance of IXPs in promoting cost-effective, reliable broadband service in rural areas. We encourage Congress and federal agencies to promote investment in rural IXPs via applicable broadband deployment programs, legislative proposals addressing infrastructure, and other methods.
10. Western Governors encourage federal agencies to continue expanding the eligibility of electric and telephone cooperatives to pursue USDA and FCC broadband deployment program support, as cooperatives' existing infrastructure and access to rights-of-way can help promote low-cost connectivity solutions for rural communities.
11. Western Governors urge federal agencies and Congress to pursue policy, programmatic and fiscal opportunities to improve broadband connectivity on Tribal lands. This includes designing federal programs in a way that promotes partnerships between Tribes, states and various broadband providers. We recommend that federal broadband programs allocate a designated portion of their available funding to supporting projects on Tribal lands.
12. Western Governors encourage Congress and federal agencies to leverage community anchor institutions in rural communities to spur connectivity to surrounding areas. We support efforts to advance "to and through" policies that provide flexibility to incentivize additional private or public broadband infrastructure investment beyond connected community anchor institutions.
13. Western Governors encourage USDA to address the ReConnect Program eligibility criteria related to areas designated to receive satellite support through the FCC's CAF-II auction. This will enable many communities to pursue ReConnect connectivity solutions that will support increased data transmission needs into the future.
14. Western Governors request that FCC, USDA and other federal entities prioritize scalable broadband infrastructure investments that meet communities' increased bandwidth demands into the future. Funds for equipment maintenance and upgrades are essential to ensure federal broadband investments continue to provide high-quality service.
15. Western Governors request that Congress and the FCC leverage states' on-the-ground expertise by providing substantial block grant funds to address rural connectivity challenges. We support the use of state block grant funds to address general broadband

infrastructure issues and respond to connectivity challenges raised by the COVID-19 pandemic.

16. Western Governors support efforts to promote flexibility within the FCC's E-Rate Program in order to deliver home connectivity solutions for unserved and underserved students, and respond to connectivity issues associated with the COVID-19 pandemic. We encourage the FCC to support bus wi-fi and other creative efforts that seek to address the homework gap.

C. GOVERNORS' MANAGEMENT DIRECTIVE

1. The Governors direct WGA staff to work with Congressional committees of jurisdiction, the Executive Branch, and other entities, where appropriate, to achieve the objectives of this resolution.
2. Furthermore, the Governors direct WGA staff to consult with the Staff Advisory Council regarding its efforts to realize the objectives of this resolution and to keep the Governors apprised of its progress in this regard.

Western Governors enact new policy resolutions and amend existing resolutions on a bi-annual basis. Please consult www.westgov.org/resolutions for the most current copy of a resolution and a list of all current WGA policy resolutions.

**The Leadership Conference
on Civil and Human Rights**

1020 I Street, NW
Suite 1100
Washington, DC
20006

202.466.3311 voice
202.466.3835 fax
www.civilrights.org



May 6, 2021

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

The Honorable Robert E. Latta
Ranking Member
Subcommittee on Communications and Technology
Committee on Energy and Commerce
U. S. House of Representatives
Washington, DC 20515

Dear Chairman Doyle and Ranking Member Latta,

On behalf of the Leadership Conference on Civil and Human Rights and its Media/Telecommunications Task Force, we thank you for the opportunity to submit our views regarding the critical need for a permanent broadband affordability and inclusion plan. The Leadership Conference is a coalition charged by its diverse membership of more than 220 national organizations to promote and protect the rights of all persons in the United States. The Media/Telecommunications Task Force is committed to ensuring that all communities, particularly those who are underserved, have access to affordable, reliable, high-quality advanced communications services. We ask that this letter be entered into the record of the hearing entitled "Broadband Equity: Addressing Disparities in Access and Affordability" on May 6, 2021.

Broadband has become an essential service in modern life. It is as important now as electricity was during the last century. Everyone in the U.S. deserves access to affordable broadband. Due to the COVID-19 public health and economic crisis, the need for affordable high-speed internet is more apparent now than it has ever been. Internet connectivity is essential for work, education, healthcare, news and information, and accessing critical government services and programs. It provides telemedicine to seniors and veterans, plugs the homework gap by enabling children to learn at home, and creates immediate and long-lasting economic benefits. As just one example, our coalition member Asian Americans Advancing Justice | AAJC has found that high quality reliable broadband is necessary to keep immigrant families connected to their in-language communities both in the U.S. and abroad, provide the elderly with more accessible health care, provide students with ESL homework assistance programs, provide job training programs for refugee populations, and to connect community members to essential federal, state, and local services and benefits.

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National Women's Conference
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Lyn A. Gaudin
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Antonio E. Ortiz
Human Rights Committee
Rory Coombs
International Union of Labor
American Oversight
Anti-Corruption League
Mary Kay Henry
Service Employees International Union
Dorinda Hest
Lawrence Committee for
Civil Rights Under Law
Shelley W.
NAACP Legal Defense and
Educational Fund, Inc.
David H. Neale
American Business Culture Center
Boris Johnson
People for the American Way
Dorinda Johnson
NAACP
Kathleen Hest
League of Women Voters of the
United States
Sandra E. Sprad
American-Ind
Anti-Corruption League
Mick Hest
National Urban League
David Hest
U.S. Census Bureau
Dorinda Hest
National Progress for
Women & Families
Dorinda Hest
National Organization for Women
Boris Johnson
People for the American Way
Dorinda Johnson
Boris Johnson
National Education Association
Liz Hest
National People's Movement
American Civil Liberties Union
Evan Hest
National Congressional American Union
Mick Hest
American Association of
People with Disabilities
Boris Johnson
AFL-CIO
Black Veil
American Federation of Teachers
Boris Johnson
Asian Americans Advancing Justice |
AAJC
Interim President & CEO
Vicki Hest

May 6, 2021
Page 2 of 4



These services were essential before the pandemic and communities expect to rely even more heavily on tech and remote solutions even after the pandemic subsides.

However, disparities in broadband adoption continue, depriving historically disadvantaged communities of the very opportunities they need to participate fully in American society. Twenty-nine percent of Black households and 35 percent of Hispanic households do not have broadband at home (as compared with only 20 percent of white households). Fifty-nine percent of low-income parents say their children faced difficulties with virtual learning.¹ A Brookings neighborhood-level analysis found that the majority of digitally disconnected households live in metropolitan areas. The same analysis found that the gaps are particularly noticeable in certain neighborhoods, with the average majority-white tract having an average broadband adoption rate of 83.7 percent compared to the average majority-Black tract's broadband adoption rate of 67.4 percent.² While the Federal Communications Commission's own deployment report concluded that broadband is unavailable to 21.3 million people, other studies have shown that the number could be as high as 42 million.³ Cost is a significant barrier.⁴ The FCC found that non-promotional rates for lower-tiered broadband service increased by 20 percent from 2015 and 2020.⁵ And beyond cost, full adoption is not possible without digital inclusion programs from trusted community partners.⁶

Through the Emergency Broadband Benefit program, Congress has made it clear that affordable connectivity is a top priority that has bipartisan support. We consider the Emergency Broadband Benefit program to be an important watershed moment in helping to connect millions of households to affordable broadband—but it is only the first step. The pandemic accelerated an already-existing societal transition to online learning, employment and commerce. The end of the pandemic will not erase these changes. A rapid and bold effort to support a permanent broadband benefit and digital inclusion program is necessary to meaningfully address the serious gaps in broadband adoption.⁷

We urge Congress to adopt a permanent broadband affordability and adoption plan that:

- Guarantees to every requesting low-income household a broadband benefit that ensures affordability and tailors the support amount to the quality of the product.
- Sets the initial minimum service standards and support amounts that will be regularly re-evaluated and adjusted based on new mandated data collections on deployment, adoption, pricing and cost, and in light of changing market conditions and to achieve adoption goals.
- Establishes a permanent, sustainable funding source by committing spectrum auction proceeds to a Digital Equity Fund that creates a \$100 billion endowment dedicated to low-income affordability and adoption, supplemented in the short term by forward-funded appropriations while auction proceeds accumulate until the Fund target is met.
- Creates a state-of-the-art model that puts an efficient and easy-to-use consumer experience at the center of program design.⁸
- Incorporates and augments the provisions from the existing Emergency Broadband Benefit with respect to ISP accountability,⁹ consumer protection,¹⁰ and program eligibility.¹¹

May 6, 2021
Page 3 of 4



The plan must address the non-price factors impacting adoption by:

- Adopting the Digital Equity Act, which appropriates \$120 million each for state comprehensive digital equity plan and for digital equity projects undertaken by individual groups, coalitions, and/or communities of interest and directs the National Telecommunications and Information Agency (NTIA) at the Department of Commerce to evaluate and recommend the most effective practices.¹²
- Establishing an Office of Digital Equity at the Department of Commerce to help coordinate training targeted to demographic groups with the lowest rates of adoption.¹³
- Creating a National Digital Navigators Corps through a collaboration between NTIA and the Corporation for National and Community Service (CNCS) to conduct training and outreach in non-adopting communities.

We urge you to move swiftly and take the necessary steps to enact a permanent broadband affordability and inclusion plan. If you have any questions about the issues raised in this letter, please feel free to contact Media/Telecommunications Task Force Co-Chairs Cheryl Leanza, United Church of Christ, Office of Communication, Inc., at cleanza@alhamail.com, and Kate Ruane, American Civil Liberties Union, at kruane@aclu.org, or Bertram Lee, Jr. Leadership Conference Media/Tech Counsel, at lee@civilrights.org.

Sincerely,

Wade Henderson
Interim President and CEO

LaShawn Warren
Executive Vice President for Government Affairs

¹² Internet/Broadband Fact Sheet, Pew Research Center (April 7, 2021) <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/?menutem=6ba9316e-006c-482d-be4b-69fcb64c4be8>; see also Emily A. Vogels, 59% of U.S. Parents With Lower Incomes Say Their Child May Face Digital Obstacles in Schoolwork, Pew Research Center (September 10, 2020) <https://www.pewresearch.org/fact-tank/2020/09/10/59-of-u-s-parents-with-lower-incomes-say-their-child-may-face-digital-obstacles-in-schoolwork/>.

¹³ Adie Tomer et al., Digital prosperity: How broadband can deliver health and equity to all communities, Brookings (Feb. 2020) <https://www.brookings.edu/research/digital-prosperity-how-broadband-can-deliver-health-and-equity-to-all-communities/>.



³ John Busby et al., *FCC Reports Broadband Unavailable to 21.3 Million Americans, BroadbandNow Study Indicates 42 Million Do Not Have Access*, Broadband Now (April 7, 2021) <https://broadbandnow.com/research/fcc-underestimates-unserved-by-50-percent>.

⁴ See Becky Chao and Claire Park, *The Cost of Connectivity 2020*, New America Open Technology Institute (July 15, 2020) <https://www.newamerica.org/oti/reports/cost-connectivity-2020/>; Kevin Taglang, *Broadband Prices are Soaring. Competition is the Answer*, Benton Institute for Broadband & Society (April 30, 2021) https://www.benton.org/blog/broadband-prices-are-soaring-competition-answer?utm_source=sendgrid&utm_medium=email&utm_campaign=Newsletters; *The High Price of High-Speed Internet*, Free Press https://www.freepress.net/sites/default/files/2021-04/high_price_of_high_speed_internet_free_press_fact_sheet.pdf.

⁵ *Urban Rate Survey Data & Resources*, Federal Communications Commission (November 30, 2020) <https://www.fcc.gov/economics-analytics/industry-analysis-division/urban-rate-survey-data-resources>.

⁶ For example, 52 percent of all U.S. adults are “relatively hesitant” when it comes to new technology and skills and 40 percent of adults need help setting up or navigating new devices. John B. Horrigan, *Digital Readiness Gaps*, Pew Research Center (2016) <https://www.pewresearch.org/internet/2016/09/20/digital-readiness-gaps/>; Consumer and Governmental Affairs Bureau Federal Communications Commission, *Strategies and Recommendations for Promoting Digital Inclusion* (2017) <https://docs.fcc.gov/public/attachments/DOC-342993A1.pdf>.

⁷ Congress should adopt the broadband program and leave in place the Lifeline program funded by the existing Universal Service Fund so that the FCC can focus it on basic voice and mobile functions and consider the appropriate benefit amount and minimum standards to best serve public safety, education, meet families’ modern needs while maximizing competition within the program.

⁸ The broadband program should use a portable digital benefit and efficient electronic systems to qualify eligible consumers accurately and automatically while maintaining maximum flexibility for all consumers to demonstrate eligibility. Programs establishing eligibility should educate eligible consumers. Special attention should be paid to addressing the program accessibility concerns of marginalized communities including non-English speakers, those with limited English proficiency, those with disabilities, and those who share housing or live in communal housing.

⁹ The Emergency Broadband program prohibits retroactive reimbursement, requires audits, and provides that a violation of the program rules, including a reckless denial of free or discounted service, is a violation of the Communications Act subject to FCC enforcement. Additional measure may be needed.

¹⁰ Under this current program, for example, ISPs may not: impose an early termination fee, refuse service based on past arrearages, subject household to a mandatory waiting period, deny a benefit based on consideration of a credit report or credit score, or upsell program participants. Additional safeguards may be needed.

¹¹ Eligibility would be as follows: within 135 percent of the federal poverty guideline; Pell Grant, Free and Reduced School Lunch, Supplemental Nutrition Assistance Program (SNAP), Medicaid, Supplemental Security Income (SSI), Federal Public Housing Assistance (FPHA), Veterans Pension and Survivors Benefit, and Tribal programs (including Bureau of Indian Affairs General Assistance, Head Start, Tribal Temporary Assistance for Needy Families (Tribal TANF), and Food Distribution Program on Indian Reservations.)

¹² Support for affordable laptops, tablets and computers should be addressed via these and other state and local governmental and non-governmental digital equity projects and plans.

¹³ The Office of Digital Equity should administer the Digital Equity Act programs and also study and provide recommendations to end digital redlining.



Chairman Michael F. Doyle
 Subcommittee Communications & Technology
 House Committee on Energy & Commerce

Re: Hearing on Broadband Equity: Addressing Disparities in Access and Affordability

Dear Chairman Doyle and Committee Members,

I am writing to give you information about a cost-efficient sustainable policy proposal to **eliminate the homework gap for the 29 million US secondary school students in this country**. The **Student Internet Equity Program (SIEP)** leverages bulk purchasing to efficiently utilize existing marketplace discounts for low-income families, and eligibility, verification and reimbursements occur through the Universal Service Administrative Company. ***See attached policy document.***

Costs for the program are shared by government, families and internet service providers. Because of this market-based approach, **all 29.9 million middle and high school students** could gain access, and stay connected, to affordable internet and a computer at home at a cost to government of between \$1.5-\$3.9B a year, averaged over 5 years.

This can work and here's why. The cable industry and telecom providers have demonstrated they have the operational capacity and the will to scale discounted Internet service to low-income families nationwide. Comcast has demonstrated this capability since it began Internet Essentials in 2011. What is needed now is a funding program that is fair, available nationally, and easy to administer. This is the Student Internet Equity Program.

We cannot waste this moment of national clarity around the digital divide for students. Our middle and high school students must have internet and computer access at home to compete academically and to develop the digital skills they need for the workforce of today and tomorrow. A recent Michigan state study¹ gave us empirical evidence that the difference in digital skills for a student that had the internet and a computer at home and one who did not—was the difference between an 8th and 11th grader. **We cannot waste this moment.**



Letter to Chairman Michael F. Doyle
The Student Internet Equity Coalition
Page Two

The Student Internet Equity Coalition is led by Donna Rattley Washington, a former cable and telecommunications law partner, cable system General Manager for Washington, DC and Regional Vice President for Comcast

Sincerely,

/S/

Donna Rattley Washington
Founder

The Student Internet Equity Coalition
<https://studentinternetequitycoalition.org/>
Tel.: 202.379.6448

¹ Hampton, K.N., Fernandez, L., Robertson, C.T. & Bauer, J.M. *Broadband and Student Performance Gaps*, James H. and Mary B. Lippell Center, Michigan State University, <https://doi.org/10.25335/BZGY-3V91>



April 23, 2021

The Honorable Michael Doyle, Chairman
 The Honorable Robert Latta, Ranking Member
 Subcommittee on Communications and Technology
 House Committee on Energy and Commerce
 2125 Rayburn House Office Building
 Washington, DC 20515

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 Clarence E. Anthony

Dear Chairman Doyle and Ranking Member Latta:

The National League of Cities is pleased to provide this letter for the record on a topic critical to the nation's more than 19,000 cities, towns and villages of all sizes: broadband equity. City leaders are eager to work with the Subcommittee on closing the digital divide and addressing the inequities that have disproportionately burdened some communities more than others. Thank you for giving this issue the attention it deserves.

There is no silver bullet for closing the digital divide, but there are many ways Congress and cities can partner to build locally-driven broadband solutions from the ground up. The approach America has taken so far to broadband has not worked: too many American households and businesses remain cut off from reliable internet access, either because of a lack of infrastructure or because of outdated, inequitably distributed, or unaffordable options. These challenges echo and amplify the existing inequities faced by communities of color and low-income families in particular.

Support Broadband Infrastructure Investments in Both Rural and Urban Places

Congress has focused a great deal of attention in recent years on the rural digital divide, and for good reason – residents in rural areas are significantly less likely to have broadband access than their urban counterparts. Programs such as the U.S. Department of Agriculture's ReConnect grant and loan fund are critical ways to support remote communities in desperate need of infrastructure investment, and Congress should continue to fund and hold accountable these rural-focused programs.

However, lack of broadband access is not strictly a rural issue – particularly when probing deeper than the Federal Communications Commission's Form 477 data. According to the most recent American Community Survey data, most Americans without broadband at home

live in urban and suburban areas.¹ This persists for a variety of reasons. In some cases, residents have been faced by “digital redlining” from incumbent providers who cherry-picked the most profitable neighborhoods for investment.² In other cases, infrastructure has not been maintained and upgraded to keep up with the rising demand for higher bandwidth and upload speeds than the outdated federal 25/3Mbps standard.

And in far too many places, the available fixed service broadband options, regardless of service quality, are unaffordable for families. In many cases, these households rely solely on a smartphone for connectivity. Nonwhite households, rural households, and lower-income households are significantly likelier to report relying solely on a mobile device for broadband – and were disproportionately disadvantaged during the pandemic when activities from participating in school to securing a COVID-19 vaccine appointment shifted online.³ Mobile service is critical, but not interchangeable, with fixed in-home broadband connections. While by some measures, these households may be “served,” a household with outdated DSL service or reliant on a smartphone for their computing and connectivity needs cannot in any meaningful sense be considered fully connected.

Empower Local Leadership and Local Decisions

Because the nature of the digital divide is different in every community, the solutions to it must also be uniquely tailored by community. Congress must actively partner with cities, towns and villages to ensure that federal broadband infrastructure and digital equity efforts meet local needs and empower local decision-making. Nobody is more intimately familiar with the local landscape, or more eager to reap the benefits of connectivity, than city leaders.

Partnering with local leaders on solutions means removing legal obstacles to community broadband. Community broadband is not the solution to every city’s connectivity challenges, but in half of all states, it is not even an option. In places where they have been allowed, community broadband networks have provided excellent, affordable service, often in places that would otherwise have been passed because of their unprofitable location. States with restrictions on community broadband see a direct hit to connectivity – broadband availability rates are roughly three percent lower than in their less-restrictive peers.⁴ Models ranging from fully public broadband utilities, to co-ops, public-private partnerships, and open access networks have found success in communities across the country. When communities are

¹ Brookings, “Digital prosperity: How broadband can deliver health and equity to all communities.” February 27, 2020. <https://www.brookings.edu/research/digital-prosperity-how-broadband-can-deliver-health-and-equity-to-all-communities/>

² National Digital Inclusion Alliance, “AT&T’s Digital Redlining Of Cleveland.” March 10, 2017. <https://www.digitalinclusion.org/blog/2017/03/10/atts-digital-redlining-of-cleveland/>

³ Pew Research Center, “Smartphones help blacks, Hispanics bridge some – but not all – digital gaps with whites.” August 20, 2019. <https://www.pewresearch.org/fact-tank/2019/08/20/smartphones-help-blacks-hispanics-bridge-some-but-not-all-digital-gaps-with-whites/>

⁴ Whitacre, Brian and Gallardo, Robert. “State broadband policy: Impacts on availability.” *Telecommunications Policy*, October 2020. <https://doi.org/10.1016/j.telpol.2020.102025>

willing and able to put their own skin in the game and invest in their own broadband futures, they should be permitted to do so, without state interference.

Further, Congress must roll back federal and state limitations on cable franchise agreements and restrictions on local management of wireless infrastructure on municipal property. These limitations have harmed the ability of local governments to make direct investments, conduct holistic planning for connectivity needs, and hold providers accountable. Nearly a third of Americans who have broadband access do so via cable technology⁵ – which is only so ubiquitous because of the comprehensive buildout requirements negotiated in decades past by local governments. These negotiations between local governments and telecommunications companies have been a critical tool for protecting residents and consumers and must be restored.

Supporting local decision-making also means ensuring that local governments are eligible participants in current and future federal broadband infrastructure and digital inclusion programs. Most federal broadband infrastructure funds have been designed to support and incentivize traditional internet service providers, with local governments having very little say about where or how federal broadband funds are directed. Even very recent programs, such as the Emergency Broadband Benefit and Emergency Connectivity Fund, have cut out local governments from direct participation. Cities, towns and villages must be able to access federal programs to support digital inclusion capacity-building, planning, skills training, affordability programs, and construction of physical infrastructure.

Improve Federal Programs to Focus on Equity

Finally, Congress should take this opportunity to make longer-term changes to key federal programs and definitions so that federal investments are stronger and more equitable for the future and meet current and anticipated technological needs. These changes must include the establishment of a permanent broadband benefit and updating broadband data collection to 21st-century standards.

The Emergency Broadband Benefit has the potential to be a game-changer for eligible households. Local governments are eager to help these families enroll and gain access to home computers and affordable broadband. However, NLC remains concerned about what will happen to those households when the pandemic emergency concludes, and the benefit runs out or expires. Even as schools and public buildings begin to reopen, the need for home connectivity will remain. Our residents deserve a permanent program that recognizes the essential nature of broadband and does not cannibalize existing Lifeline phone service support.

Congress must also prioritize ensuring that leaders at all levels of government have access to quality, granular data about broadband availability that enables them to plan accurately

⁵ NCTA — The Internet & Television Association, “Broadband Facts and Stats.” <https://www.ncta.com/broadband-facts>

and effectively and maximize the value of infrastructure investments. While laudable efforts are being made to gradually improve federal maps, communities cannot wait indefinitely for map data that clearly shows on a street level what broadband service is available, at what speeds, and at what cost to residents. Without that information, local leaders are unable to clearly identify inequities, effectively target investments for the future, or hold providers and programs accountable to their commitments.

Congress Must Partner with Cities, Towns and Villages on Our Broadband Future

Our communities have learned and continue to learn critical lessons during the COVID-19 pandemic. Leaders at every level of government, along with private and nonprofit leaders, worked furiously throughout the pandemic to connect families with emergency solutions, such as mobile hotspots, donated devices, and public wi-fi access points in parks. However, these are temporary measures, and more work needs to be done to address the root causes behind the digital divide. NLC encourages Congress to build on the groundwork laid by local leaders to ensure that federal solutions uplift sustainable, locally led solutions. America's cities, towns and villages look forward to partnering to develop a broadband plan that promotes equity and places our nation on a firm footing for the digital future.

Sincerely,



Clarence E. Anthony
CEO & Executive Director
National League of Cities



Student Internet Equity Coalition Policy Proposal to Connect 29 Million Middle and High School Students to Internet and Computer Access at Home

Nearly **1 in 5 teens** and **1 in 4 Black teens** in the US do not have access to the internet or a connected device at home. This is a national issue across all 50 states. Even in states with the smallest divide, **1 in 4** students lacks access. For states with the largest divide, **almost half** of students lack adequate internet access at home.

Low-income students are disproportionately impacted. 35% of families with K-12 students earning under \$30,000 lack access; 41% of Black families; 36.2% of rural families; and 34.2% Native American families. For K-12 families earning under \$25,000, the outlook is even bleaker—45% lack internet access at home.

We will not fix this problem for students without an affordability solution coupled with a comprehensive digital adoption program.

The Student Internet Equity Program (SIEP)

Key Facts:

- **Targeted to Eliminate the Homework Gap.** SIEP is a new standalone program focused exclusively on fixing the "homework gap" and the need for critical digital skill development for secondary school students;
- **Sustainable Market-oriented Solution.** Bulk-purchases existing marketplace discounts for low-income families.
- **Most Effective and Comprehensive Distribution Channel.** Families connect to SIEP at their local school—the most comprehensive and trusted resource for families with children.
- **Public-Private Shared Costs.** Government, families, and broadband providers share the costs. The total cost to the government for SIEP is between \$1.5-\$3.9 Billion¹, averaged over five years.
- **High-Quality Broadband and Affordable Cost.** SIEP offers a family with a middle or high school student a set tier of broadband service with sufficient speeds at an affordable rate.
- **Ready.** SIEP utilizes the newly strengthened USAC national eligibility, verification, and reimbursement system.

SIEP Program Description:

- SIEP has three simple eligibility tiers for middle and high school families based on family income. Tier 1 includes families that qualify for free or reduced lunch, Tier 2 includes families earning up to 400%² of the Federal Poverty Line². Tier 3 includes families with a middle or high school student who does not qualify for a government subsidy. **See tiers and pricing model below.**
- SIEP takes advantage of the cable and telecom companies' marketplace discounts available to families that qualify for free or reduced lunch. Using this discounted rate, the federal government will pay the cost in total for families in Tier 1. For families in Tier 2, the federal government will subsidize half of the service

¹ Range is based on whether there are 1 or 2 eligible students per home. US average is 1.96 children per home.

² 400% of Federal Poverty is the same cap under the Affordable Care Act for government assistance.

cost, and the family will pay the remainder. Families in Tier 3 do not qualify for a subsidy but can take advantage of a "Student Rate" for middle and high school students.

- Connected devices are subsidized or discounted, consistent with the level of subsidy or discount for which the family qualifies for internet service.
- SIEP is technology-neutral, and families choose the connectivity solution that works best for their family and is available where they reside.



Congress has enacted two necessary temporary broadband assistance programs designed to provide quick help to Americans during the pandemic (**Emergency Broadband Benefit Program (EBBP)** and the **Emergency Connectivity Fund (ECF)**).

The Student Internet Equity Program (SIEP) is a permanent, targeted, market-oriented solution. It incorporates the **best aspects of the EBBP and ECF** and will be our most effective tool to eliminate the homework/learning gap for America's 29 million middle or high school students.





USTELECOM | THE BROADBAND ASSOCIATION

May 6, 2021

The Honorable Mike Doyle
Chairman
Subcommittee on Communications and Technology
270 Cannon House Office Building
Washington, DC 20515

The Honorable Bob Latta
Ranking Member
Subcommittee on Communications and Technology
2467 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Doyle and Ranking Member Latta:

Thank you for holding today's important hearing, "Broadband Equity: Addressing Disparities in Access and Affordability," which will examine important questions essential to permanently solving the nation's digital divide. USTelecom submits this letter for the record in order to offer the considerable experience of our members, who are at the forefront of deploying broadband across the nation.

Expand Broadband Access

First, on the issue of broadband access, we stand today closer than ever before towards achieving our shared goal of high-speed broadband availability for every home across the nation. Private sector investment has fueled America's position as a global leader in broadband connectivity. In fact, America's broadband providers have invested over \$1.78 trillion over the past 25 years into the nation's broadband networks—the near equivalent of the recent American Rescue Plan to bolster the entire American economy. And in the last few years, broadband providers have invested approximately \$80 billion each year. Those investments are paying off:

- 92% of Americans have access to 100 Mbps speeds—up from only 10% a decade ago.
- 87% of Americans have access to Gigabit speeds today—this technology simply was not even available a decade ago.
- Broadband availability and adoption in the U.S. far outpaces our EU counterparts.¹

¹ USTelecom, No Contest: U.S. Leads Europe in Broadband Deployment, Adoption, Investment and Competition (Apr. 21, 2021) <https://www.ustelecom.org/no-contest-u-s-leads-europe-in-broadband-deployment-adoption-investment-and-competition/>.

Yet work remains to connect those areas that are simply uneconomic for the private sector to serve. Congress's recent commitments of billions of dollars for broadband deployment over the past year² plus the Federal Communications Commission's recent \$9 billion Rural Digital Opportunity Fund are slated to provide life-changing broadband connectivity to millions more Americans. President Biden has called for up to \$100 billion in additional funding to close the digital divide, and we support Congress providing the funds necessary to finish the job.

As it allocates money, Congress should establish clear definitions of which areas are "unserved" in order to best target funding towards the areas that need broadband the most—particularly those that lack 25 Mbps download/3 Mbps upload. While broadband needs are evolving—and the speeds required to fuel our broadband dependencies are too—it is important to focus first on serving unconnected areas before looking to upgrade areas where broadband exists today.

Focus on Long Term Affordability Programs

USTelecom commends Congress for recently launching and fast-tracking two major initiatives to ensure broadband is affordable for low-income students and those in need. The first, the FCC's Emergency Broadband Benefit program, provides a needed boost to ensure that all Americans have access to broadband at home during the pandemic, when the truly essential nature of broadband has never been more clear.³ The second, the American Rescue Plan, provides over \$7 billion to ensure no student is left behind because their family cannot afford broadband connectivity or the devices necessary to effectively use such networks.

USTelecom members and the broadband industry as a whole have been doing their part to boost broadband affordability. FCC and public data show⁴ that from 2015-2020 there were substantial reductions in price for the most popular and highest-speed broadband internet services in the U.S.:

- The most popular tier of broadband service in 2015 was priced about 20 percent lower (and offered nearly 16 % faster speeds) in 2020.
- These price reductions run counter to inflation, which increased consumer costs for overall goods and services by 9.3% over the same five-year period.
- When inflation is considered, the real price of the most popular tier of broadband service has actually dropped – 28% since 2015.

Although the cost of broadband is decreasing—while the cost of other consumer goods and services are increasing—too many remain without broadband connectivity.

² Congress has committed funding through various direct and indirect streams for broadband deployment as part of the CARES Act, Consolidated Appropriations Act, 2021, and American Rescue Plan over the past year.

³ Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, div. N, tit. IX, § 904(i), 134 Stat. 2130, 2135; *Emergency Broadband Benefit*, Report and Order, WC Docket No. 20-445, FCC 21-29 (rel. Feb. 25, 2021).

⁴ USTelecom, USTelecom Releases 2020 Broadband Pricing Report (Sept. 16, 2020) <https://www.ustelecom.org/ustelecom-releases-2020-broadband-pricing-index-report/>.

Congress must create a permanent solution for those who, without aid, broadband will always be out of reach. It is critical to engage across all sectors—public, private, and non-profit—to ensure support to help all unserved communities get connected and stay connected. USTelecom members are doing their part to activate the Emergency Broadband Benefit program, but a broad consensus is emerging⁵ that Congress should transition from an emergency program to a long-term investment in our nation's connected future. As Congress contemplates how to help low-income families purchase broadband after the pandemic ends, the best way to refocus efforts on closing the affordability gap include these key aspects:

- **Flexibility:** Ensure that every American home has the ability to select the services that best fit their needs, be they fixed and/or mobile subscriptions.
- **Proven Success:** Use programs like the Supplemental Nutrition Assistance Program (SNAP) as a model for how broadband benefits can be confirmed and distributed simply and efficiently, including via debit cards loaded monthly with a predetermined amount that allow participants to make digital payments for the service that best fits their needs.
- **Ensure Sustainability:** Consider appropriating funds to ensure the long-term viability of any affordability program. This serves as an investment in America—universal connectivity makes the nation exponentially stronger.

Unfortunately, some current broadband legislative proposals forego long-term broadband benefits—which exist for nearly every other essential service—creating a potentially missed opportunity at meaningful progress.

Many broadband providers today already offer packages for low-income households.⁶ Further, as described above, broadband providers have already been doing their part to bring down prices. This is proof the market is working. Yet even with low-cost offerings, some of our fellow citizens are unable to afford broadband—and these may be the very households who will benefit most from a broadband connection for job opportunities, education and healthcare. The government should commit to a sustainable benefit to bring these Americans who deserve connectivity online.

Thank you again for your focus today on these important issues. USTelecom and its members stand ready to assist as you make important decisions that will impact the lives of millions of Americans by bringing them a connected future. We look forward to being a resource on this and other topics to you and your staff.

⁵ See Letter from ACA Connects, African American Mayors Association, American Association of People with Disabilities, *et al.*, to the Hon. Rosa DeLauro, Chair, Approps. Committee; Hon. Kay Granger, Ranking Mem. Approps. Committee, Hon. Frank Pallone, Chair, Energy & Commerce Committee, *et al.* (Apr. 6, 2021) available at <https://www.verizon.com/about/sites/default/files/2021-04/congress-letter-april-2021.pdf>. The letter, encouraging Congress to “comprehensively address the [broadband] affordability challenges facing low-income Americans” had nearly 50 signatures from civil rights and public interest groups as well as members of industry.

⁶ See, e.g., AT&T, Access from AT&T, <https://www.att.com/internet/access/> (offering \$10/month plans to certain qualifying customers); Verizon, Low Income Internet, <https://www.verizon.com/info/low-income-internet/> (offering \$20 discount in addition to Lifeline benefits).

Sincerely,

A handwritten signature in black ink, appearing to read "Jonathan Spalter", with a long horizontal flourish extending to the right.

Jonathan Spalter
President and CEO
USTelecom – The Broadband Association

Cc: The Honorable Frank Pallone
The Honorable Cathy McMorris Rodgers



**AMERICANS
for
TAX REFORM**

May 06, 2021

The Honorable
Michael F. Doyle, Chairman
U.S. House of Representatives
Subcommittee on Communications & Technology
2123 Rayburn House Office Building
Washington, DC 20515

The Honorable
Robert E. Latta, Ranking Member
U.S. House of Representatives
Subcommittee on Communications & Technology
3222-A Rayburn House Office Building
Washington, DC 20515

722 12th Street N.W.

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20005

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www.ATR.org

Dear Representatives:

If Congress is to address broadband connectivity and cost issues, we urge you to do so in a targeted, cost-effective way that considers the entire broadband universe, rather than the narrowly defined, non-technology neutral view proposed by the Biden Administration.

Congress should avoid overly restrictive definitions of what constitutes broadband. There are more choices than fiber. Cable, wireless, fixed wireless, satellite are all acceptable methods for achieving speeds that meet the needs of Americans now and into the future for working remotely, telehealth, remote learning, and entertainment. According to Zoom, only 2 Mbps is required for high-quality video calling for both upstream and downstream,¹ while Netflix requires only 0.5 Mbps per second.² Calls for symmetrical speeds at 100 up and 100 down end up mandating on fiber and doesn't take into consideration the asymmetrical needs of individual broadband users or the ability of private networks of to upgrade to meet demand over time.

While the government may be suggesting an influx of \$100 billion is revolutionary, it is not. **A one-time spend, on a chosen technology, with a preference for government operators who will likely compete with existing private networks will not address the remaining digital divide.**

The private sector has invested over \$1.6 trillion into wireline broadband since 1997,³ and after the lifting of several government restrictions, the private sector invested \$80 billion in 2018 alone.⁴ The US's prioritization of investment through both the public and private sector instead of the burdensome government regulation seen throughout Europe leads to better broadband results hands down.⁵

Looking only at wireline broadband connections the US beats out the EU when it comes to provider competition.⁶ In 2019 86% of all US households had a choice of two or more providers, while only 46% of Europeans had that choice. In rural areas, 49% of US residents had multiple access points while only 11% had choices in the EU. This isn't surprising because between 2012 and 2018, US investment in broadband was about 40% higher than in the EU.⁷ US broadband

¹ See: "System requirements for Zoom," Available at: <https://support.zoom.us/hc/en-us/articles/204003179-System-Requirements-for-Zoom-Rooms>

² See: "Internet connection speed recommendations," Available at: <https://help.netflix.com/en/node/306>

³ Brogan, Patrick, "U.S. Broadband Investment Rebounded in 2017," (Oct. 18, 2018), *USTelecom*, <https://www.ustelecom.org/wp-content/uploads/2018/12/USTelecom-Research-Brief-Capex-2017.pdf>

⁴ Brogan, Patrick, "U.S. Broadband Capex Growth Propels Deployment," (July 31, 2019), *USTelecom*, <https://www.ustelecom.org/us-broadband-capex-growth-propels-deployment/>

⁵ Visconti, Bridget, "EU Shows Government Regulation Expands the Digital Divide," (Apr. 27, 2021), *Digital Liberty*, <https://www.digitalliberty.net/eu-shows-government-regulation-expands-the-digital-divide/>

⁶ See: USTelecom, "US vs. EU Broadband Trends (2012-2014)," (2019), *USTelecom*

⁷ Total investment from 2012-2018: US \$616 billion, EU \$353 billion; *Ibid* at 6.

providers invest about \$708 per household which is about three times higher than in the EU's \$230 per household.⁸

Municipal or government run networks are also not the answer, especially ones that compete with private networks already in place.⁹ They can charge below market rates because they receive tax subsidies and they still fail as projects. Taxpayers should not be forced to subsidize an ineffective service they may not even want to use.¹⁰ **Similar programs, like the Broadband Technology Opportunities program (BTOP) have been tried and failed.**¹¹

We hope you will look towards reforming the lifeline program at the FCC to be a sustainable solution to lack of connectivity due to cost, rather than returning to the failed programs of the past. Doing away with the Universal Service fee, which continues to put extreme pressure on a small segment of the population¹² and moving to a Congressionally approved appropriation possibly attached to spectrum proceeds could be a viable solution. Congress should also do away with the Eligible Telecommunications Carriers requirement and move to a voucher program rather than a carrier directed program to increase options to individuals struggling to get online.¹³

Should you have any questions or comments on this matter, please reach out to me, or our Director of Federal Policy, Katie McAuliffe, kmcauliffe@atr.org.

Onward,



Grover G. Norquist
 President
 Americans for Tax Reform

⁸ Weiss, Brian, "No Contest: U.S. Leads Europe in Broadband Deployment, Adoption, Investment and Competition," (Apr. 21, 2021), *UStelecom*, <https://www.ustelecom.org/no-contest-u-s-leads-europe-in-broadband-deployment-adoption-investment-and-competition/>

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A MESSAGE FROM USTELECOM'S CEO



The current pandemic has shown that Americans need to have strong, reliable and resilient high-speed broadband connectivity in their homes. Urgency is gathering in Washington, D.C. to more fully address the infrastructure component of this modern mandate. It must be an immediate national priority to connect the more than 18 million Americans—mostly in rural communities—who need Congress to commit the resources necessary to extend broadband infrastructure to everyone, particularly the 30% of K-12 students that do not have access to high-speed internet and/or the devices needed to learn from home.¹

Equally, to fully close the digital divide, more work, understanding and concrete data is needed around the vital issue of affordability. There is no one silver bullet. Programs exist to bridge this gap. They deserve more attention and innovation.

But this report documents a remarkable area of progress. It is well-known in policy circles that broadband companies invest between \$70 billion and \$80 billion each year in faster and more reliable U.S. broadband infrastructure. This report is among the first to document the degree to which this investment has resulted in broadband services that are not only increasingly fast, but also much less costly than even just five years ago. All this at a time when U.S. subscribers are now leading the world in internet traffic per user.

This report is among the first to document the degree to which this investment has resulted in broadband services that are not only increasingly fast, but also much less costly than even just five years ago.

Even before adjusting for consumer price inflation, which has made today's money worth about 10% less than in 2015, this report indicates that broadband pricing has significantly declined. This trend is particularly notable because it occurred at a time when other essential services—from prescription drugs and rent, to college tuition and car insurance—have experienced double-digit inflation. At the same

time, gigabit-speed home broadband availability has skyrocketed from 6% to 86% in just over three years. Fierce competition amongst rival companies and technologies, fueled by sustained network investment and nurtured by common sense and bipartisan policies, have enabled this dynamic market.

USTelecom members are proud of the progress documented in this report—and ready to work with government and other stakeholders to finish the job of connecting every American home, business and anchor institution not just to essential technology, but the world of opportunity it makes possible for our economy, our families and our communities.

Jonathan Spalter
CEO, USTelecom

USTELECOM
THE BROADBAND ASSOCIATION

EXECUTIVE SUMMARY

This research, using FCC and other public data sources, assesses recent trends in residential fixed broadband pricing between 2015 and 2020 in the United States. The analysis reveals that during this period, there have been substantial reductions in price for both the most popular and highest-speed broadband internet services, and also significant improvements in broadband speeds. Simply put, Americans are paying less today for broadband services that are significantly more capable than they were five years ago.

Americans are paying less today for broadband services that are increasingly more capable than they were five years ago.

The Broadband Price Index (BPI) established here makes price comparisons over time on two fronts: The most popular speed tiers in 2015 and 2020 and the highest speed tiers in 2015 and 2020.

The key findings:

- The most popular tier of broadband service in 2015 (BPI-Consumer Choice) is now priced 20.2% lower and offers 15.7% faster speeds in 2020 on an average-subscriber-weighted basis.
- The highest speed offerings in 2015 (BPI-Speed) are now priced 37.7% lower and offer 27.7% faster speeds in 2020 on an averaged subscriber-weighted basis.
- Further, these price reductions run counter to inflation, which has increased consumer costs for overall goods and services by 9.3% over the same five-year period analyzed in this report. When inflation is considered, the real price of the most popular tier of broadband service has dropped by 28.1% since 2015, and the real price of the highest speed broadband service has dropped by 43.9%.
- This combination of declining prices and rising speeds delivers even greater value to consumers—as shown by a declining cost per megabit of connection speed (Mbps) of 37.9% for the most popular service and 56.1% for the highest speed service.

This data shows that broadband is becoming more affordable—thereby reducing, but certainly not eliminating, an obstacle to adoption. For instance, we know that 30% of K-12 students do not have access to high-speed internet and/or the devices needed to learn from home. More work, understanding, and concrete data is needed around the vital issue of affordability and this report seeks to contribute to that discourse.

FINDINGS

Broadband Prices Have Decreased While its Value Has Increased

Broadband connectivity is reshaping the delivery of 21st century education, health care, access to government services, entertainment, civic participation and commerce. The huge surge in broadband usage occasioned by the COVID-19 pandemic has demonstrated vividly our national dependence on broadband. Indeed, a broadband connection is a near indispensable part of modern life. But not all Americans have a broadband connection. For some, this is because connections are not available in their neighborhood. But for others, they may find a high-quality fixed broadband connection to be unaffordable. This research shows the good news that this latter barrier to broadband adoption is receding—as over the past five years fixed broadband prices have reduced substantially, even while the speed of connections has increased.

Remarkably, there have been few studies employing authoritative data that examine the affordability of broadband and that can inform appropriately both public policy and private sector leadership in solving for this barrier to universal connectivity. The present study employs FCC and other public data sources to assess trends in U.S. residential fixed broadband pricing between 2015 and 2020. The data used in this study are in contrast to those used in other studies, such as New America's Open Technology Institute's "The Cost of Connectivity,"^{1,2} which sample only a tiny number of U.S. broadband plans, frequently in particularly hand-picked cities, without ensuring the collected data is a reasonably accurate statistical representation of the overall United States.

This report develops two metrics for examining broadband pricing by making use of the FCC's "Urban Rate Survey." This data set is collected from a required broadband reporting metric for all broadband service providers. It contains over 4,500 plan observations and is statistically constructed to represent an accurate profile of U.S. broadband prices throughout the entire country.³ While the full methodology is described below, analysis of the FCC data, when combined with other public data sources, allows us to establish two national indices for comparing broadband pricing from 2015 to 2020. The BPI-Consumer Choice Index compares the prices of the largest providers' most popular speed tier of broadband service in a given technology to its most comparable 2020 service.⁴ The BPI-Speed approach makes a similar comparison, but compares the prices of these providers' fastest speed tier option from 2015 to 2020. The results are striking: the U.S. weighted average price for the most popular speed tiers by subscription has decreased by 20.2% over the past five years—and the weighted average price for the fastest speed tiers has decreased by 37.7%. These

This research shows the good news that this barrier to broadband adoption is receding—as over the past five years fixed broadband prices have reduced substantially, even while the speed of connections has increased.

results are displayed in Table 1. Further, when national price inflation is taken into account, Table 2 shows that the decreases in real prices for these services are 28.1% and 43.9%, respectively.⁵ Appendix A provides more information comparing the declining price trajectory for broadband service prices versus the price increases for most other household expenses.

TABLE 1: NOMINAL U.S. BROADBAND PRICES
(subscriber-weighted average)

INDEX	PRICE: 2015	PRICE: 2020	CHANGE
BPI-Consumer Choice	\$65.62	\$52.37	-20.2%
BPI-Speed	\$122.94	\$76.59	-37.7%

TABLE 2: REAL U.S. BROADBAND PRICES
(subscriber-weighted average)

INDEX	PRICE: 2015	PRICE: 2020	CHANGE
BPI-Consumer Choice	\$65.62	\$47.15	-28.1%
BPI-Speed	\$122.94	\$68.96	-43.9%

The average prices that U.S. subscribers pay for broadband services have been declining sharply over the past five years ...not only did U.S. broadband subscribers get a price decrease, they also got a speed increase.

These findings establish clearly that the average prices that U.S. subscribers pay for broadband services have been declining sharply over the past five years and have become more affordable to the large swath of lower-income American families who previously had not purchased home internet because of its cost. This, by itself, is great news. But the full news is even better as these same FCC data also show that the speeds of broadband associated with both the most popularly purchased services and the fastest services purchased by subscribers in 2020 were substantially higher than the speeds purchased in 2015. So not only did U.S. broadband subscribers get a price decrease, they also got a speed increase.

These results are shown in Table 3. Within the same purchase groups—BPI-Consumer Choice and BPI-Speed—the speeds offered in the most popular tier have increased by 15.7%, while speeds in the fastest-offered tiers have increased by 27.7%.

TABLE 3: SPEEDS OF MOST POPULAR AND FASTEST BROADBAND SERVICES (subscriber-weighted average)

INDEX	MBPS DOWNLOAD: 2015	MBPS DOWNLOAD: 2020	CHANGE
BPI-Consumer Choice	43	50	15.7%
BPI-Speed	141	180	27.7%

Further, the combination of decreased prices and increased speeds yields even more value for American broadband subscribers. Table 4 shows these dramatic results. Not only has the real price per Mbps for the most popular speed tiers dropped by nearly 38%, but the fact that the price per megabit for the fastest tiers has dropped by 56% is particularly meaningful. This is because U.S. subscribers continue to upgrade their services as American life shifts even more substantially to online experiences. In any case, Americans are getting more for their broadband buck than ever before.

...but the fact that the price per megabit for the fastest tiers has dropped by 56% is particularly meaningful.

TABLE 4: REAL PRICE PER MBPS (subscriber-weighted average)

INDEX	PRICE PER MBPS: 2015	PRICE PER MBPS: 2020	CHANGE
BPI-Consumer Choice	\$1.52	\$0.94	-37.9%
BPI-Speed	\$0.87	\$0.38	-56.1%

Undoubtedly, significant challenges remain to eliminate affordability as an impediment to broadband adoption, particularly for those who live at or below the poverty line. But the data presented here demonstrates the very real progress being made in reducing broadband prices and in increasing speeds.

METHODOLOGY

This research analyzes residential broadband prices across the three major wired technologies (cable, fiber to the home (FTTH) and DSL) from 2015 to 2020. Using the FCC's Urban Rate survey,⁶ the 14 largest U.S. wireline broadband providers were selected to benchmark comparable offerings over time. They include the top seven cable and top seven telecom companies by subscriber count:

- Cable: Charter, Altice,⁷ Comcast, Mediacom, WOW, Cable One and Cox
- Telecom: AT&T, Verizon, CenturyLink, Frontier, Windstream, Consolidated and TDS

The next step in constructing the Broadband Price Index (BPI) is to establish proper weights for each provider. These are calculated by applying the broadband subscriber market share in 2015 and 2020 for each provider in the given technology (cable, FTTH and DSL). These weights are averaged over the two periods⁸ then multiplied by the price for that specific offering in that year. The resulting sum becomes each company's contribution to the overall index from 2015 to 2020. These weights represent a carrier's aggregate market share and not market share at a particular service speed.

Information Sources

Publicly available current and past prices of broadband by technology are found in the FCC's annual survey of urban rates. The FCC's Urban Rate Survey Data and Resources ("the FCC rate survey") collects pricing information by provider for stand-alone residential broadband services as well as by download/upload speed and by technology. This FCC data is a reasonable proxy for nationwide broadband pricing because it is the benchmark utilized for fixed voice and broadband services for the federal universal service program.

The contribution of each company to the overall price of broadband was derived from two primary inputs: 1) the FCC's 2015 and 2020 rate surveys and 2) the average number of broadband subscribers by provider and technology for 2015 and 2020. Subscriber counts are largely sourced from the Leichtman Research Group. Adjustments have been made to 2015 subscribers using SEC, investor relations and FCC sources to reconcile for mergers, spin-offs and technology segmentation.

BROADBAND PRICE INDEX—CONSUMER CHOICE
(Compares the most popular speed offering in 2015 to its most similar 2020 service)

WEIGHTED AVERAGE PRICE (INFLATION-ADJUSTED)			DOWNLOAD SPEED (MBPS)			REAL PRICE PER MBPS (DOWNLOAD)		
2015	2020	CHANGE	2015	2020	CHANGE	2015	2020	CHANGE
\$65.62	\$52.37	-20.2%	43	50	+15.7%	\$1.52	\$0.94	-37.9%

The BPI-Consumer Choice compares each company's most popular tier of service for each technology in 2015 to its most comparable 2020 service. The result over the five-year period is a 20.2% drop in real consumer prices. Additional consumer value is derived from the fact that the most comparable services in 2020 offered faster download and upload speeds (see Appendix B). When priced on a real per Mbps basis, because broadband download speeds were 16% faster in 2020 than in 2015, total real consumer savings per Mbps were 38% in 2020.

When priced on a real per Mbps basis, because broadband download speeds were 16% faster in 2020 than in 2015, total real consumer savings per Mbps were 38% in 2020.

Methodology: BPI-Consumer Choice

The FCC's June 2015 Internet Access Report¹ shows the distribution of residential fixed connections by download speed tier and technology. The "consumer choice" download speed for each technology is the speed interval that has the most connections. Cable and FTTH's most popular speeds were between 25 Mbps and 100 Mbps. Most DSL connections, a declining contributor to the technology mix by 2020, were between 3 Mbps and 10 Mbps.

BPI-Consumer Choice uses the 2020 service offering most comparable to each company's 2015 dominant speed offering.

For example, FCC data in 2015 indicates one company's most popular offering found in the 25 Mbps to 100 Mbps range was with 50 Mbps down/3 Mbps up at a price of \$118.00 per month. By 2020, the provider's next closest offering was 100 Mbps down/10 Mbps up at \$78.53 per month—a 33% price reduction in nominal terms and 40% decrease when adjusted for inflation. In this time period, the download speed doubled and the upload speed more than tripled for the comparable offering.

This exercise is repeated for each company, and the results are weighted by each provider's average market share for the two periods and then aggregated into the "overall weighted price."

BROADBAND PRICE INDEX—SPEED**(Compares the highest speed offering in 2015 to its most similar 2020 service)**

WEIGHTED AVERAGE PRICE (INFLATION-ADJUSTED)			DOWNLOAD SPEED (MBPS)			REAL PRICE PER MBPS (DOWNLOAD)		
2015	2020	CHANGE	2015	2020	CHANGE	2015	2020	CHANGE
\$122.94	\$76.59	-37.7%	180	141	+27.7%	\$0.87	\$0.38	-56.1%

The BPI-Speed compares each company's fastest 2015 service to its most comparable 2020 service. The result over the five-year period is a nearly 38% real price savings. Additional consumer value is derived from the fact that even the most comparable service in 2020 offered far faster download and upload speeds (see Appendix B). When priced on a real (adjusted for inflation) per Mbps basis, consumer savings exceeded 56% in 2020, which in part is explained by download speed of service that was 27.7% faster than in 2015.

The BPI-Speed compares each company's fastest 2015 service to its most comparable 2020 service.

Methodology: BPI-Speed

Since broadband speeds vary by provider and improve over time, BPI-Speed uses the 2020 service offering most comparable to each company's 2015 highest speed service.

For example, one company's fastest service in 2015 was 107 Mbps down/5 Mbps up at a price of \$132.00 per month. In 2020, that provider offered much faster services. The closest benchmark to that service found in the FCC survey in 2020 is 200 Mbps down/20 Mbps up at a price of \$88.60. Download speeds nearly doubled and upload speeds increased four times. The consumer price tag drops in nominal terms by 32.9% and decreases by 39.6% when adjusted for inflation.

This exercise is repeated for each company by technology, and the results are weighted by the average of each provider's market share in both years and then aggregated into the "overall weighted price."

APPENDIX A

Broadband Affordability Bucks Overall Trend of Rising Consumer Prices for Other Essential Goods & Services

The substantial consumer savings documented in this report are especially noteworthy because they run in the opposite direction of other categories of essential consumer goods and services. While Americans have the opportunity to both save more and get more for their broadband dollar, the same cannot be said for food, shelter, education and health care. All BPI price-related calculations in this report are adjusted for inflation using the Consumer Price Index (CPI-U)—a barometer of overall urban U.S. inflation. Overall, the cost of consumer goods and services rose by nearly 10% from 2015 to 2020, according to the CPI-U. In many instances, this inflation is even higher with regard to essential goods and services.

COMPARISON OF CONSUMER PRICE INDEX FOR ESSENTIAL GOODS & SERVICES

	MARCH 2015	MARCH 2020	PRICE CHANGE
Overall CPI-U	236.12	258.12	9.3%
Health Insurance	\$122.34	\$176.80	44.5%
Car Insurance	\$455.37	\$579.46	27.2%
Rent	\$283.13	\$339.52	19.9%
College Tuition & Fees	\$775.43	\$874.62	12.8%
Food & Beverages	\$245.69	\$262.32	6.8%
BPI-Speed** (Nominal)	\$122.94	\$76.59	-37.7%
BPI-Consumer Choice** (Nominal)	\$65.62	\$52.37	-20.2%

Source: CPI-U March 2020 v. March 2015

**Reports detailed component price as produced by Bureau of Labor Statistics CPI-U index.

APPENDIX B

Speeds Accelerate for Comparable Services

In addition to nominal price reductions for both the most popular tier of service and higher speed offerings, consumers have gained additional value from the fact that even the most comparable services in 2020 are far faster than their 2015 counterparts. This holds true for both upload and download speeds and whether comparing by BPI-Consumer Choice or BPI-Speed approaches.

BPI-CONSUMER CHOICE

WEIGHTED MBPS DOWNLOAD SPEED			WEIGHTED MBPS UPLOAD SPEED		
2015	2020	GROWTH	2015	2020	GROWTH
43	50	15.7%	13	16	27.6%

BPI-SPEED

WEIGHTED MBPS DOWNLOAD SPEED			WEIGHTED MBPS UPLOAD SPEED		
2015	2020	GROWTH	2015	2020	GROWTH
141	180	27.7%	51	78	53.7%

About the Author

Arthur Menko, the founder of Telcodata and Business Planning, Inc., has been providing telecom and broadband research and consulting services since 1984. He has extensive industry background in the economic, regulatory, infrastructure, reliability and competitive market research areas. In recent years, he has concentrated in fixed broadband deployment and adoption analytics and policy research matters.

ENDNOTES

- 1 Common Sense and BCG, *Closing the K-12 Digital Divide in the Age of Distance Learning*, (June 29, 2020) https://8ce82b94a8c4fdc3ea6d-b1d233e3bc3cb10858bea65ff05e18f2.ssl.cf2.rackcdn.com/9c0b62d34d674c979876e9b13be353df/common-sense-media-report-final-6-26-738am_WEB.pdf (last visited Aug. 25, 2020).
- 2 Becky Chao & Claire Park, New America Open Technology Institute, *The Cost of Connectivity 2020* (2020) www.newamerica.org/oti/reports/cost-connectivity-2020/.
- 3 In contrast, New America's "The Cost of Connectivity" data consist of fewer than 300 U.S. plan observations from just a handful of states. See *id.* at Appendix B, available at <https://docs.google.com/spreadsheets/d/1SVQh7JedtDwogxyj1laYY7zBHB3VsyYwIXAhrQMGCe/edit#gid=808907937>.
- 4 These providers account for approximately 95% of all fixed broadband services sold in the U.S. See Leichtman Research Group, Press Release, 2.5 Million Added Broadband in 2019 (Mar. 5, 2020) <https://www.leichtmanresearch.com/2-5-million-added-broadband-in-2019/>.
- 5 National price inflation is measured by the BLS CPI-U, which increased from 236.12 in March 2015 to 258.12 in March 2020. This equates to a 9.3% rise.
- 6 FCC, Urban Rate Survey Data & Resources (2020) <https://www.fcc.gov/economics-analytics/industry-analysis-division/urban-rate-survey-data-resources>.
- 7 Altice has been split into its two pre-merger organizations, CSC (Cablevision) and Suddenlink, since the FCC rate survey identifies them separately.
- 8 The analysis used the Marshall-Edgeworth weighting methodology to construct the price index.
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BROOKINGS

[The Avenue](#)

Broadband adoption is on the rise, but states can do much more

[Lara Fishbane](#) and [Adie Tomer](#) Thursday, October 10, 2019

Presidential elections are a great time to take stock of what issues matter to voters, and, based on early indicators, solving the country's digital divide is certainly one of them. [Senator Elizabeth Warren](#) and [Mayor Pete Buttigieg](#) have each introduced sweeping plans to address broadband inequities, including gaps in physical networks and lack of digital training. While each proposal is a bit different, there are signs that the eventual Democratic Party candidate may include ambitious and sweeping broadband reform in their campaign.

Broadband, which enables high-speed internet access, is essential infrastructure in our digital age. However, with 19 million disconnected households across the country, it is impossible to capitalize on broadband's full [economic and social impacts](#). While a presidential platform can incentivize policy reform at the federal level, the road to change is [still a long one](#), slowed by political infighting and congressional discord.

Instead of waiting for the stars to align in Washington, we should focus on states as an important middle ground. States have access to a range of tools and resources— independent of federal action—to promote broadband availability and adoption within their borders. The question is whether they will actually use them.

At a time of [vast divergence](#) between economically thriving regions and those facing economic stagnation, it's important to understand the digital divide at the state level. This piece uses American Community Survey 1-year data to judge state broadband performance and how those trends can inform future policy design.

FIGURE 1

Broadband adoption rate across the United States

2017, 1-year estimates



5/4/2021

Broadband adoption is on the rise, but states can do much more



Source: Brookings analysis of American Community Survey data

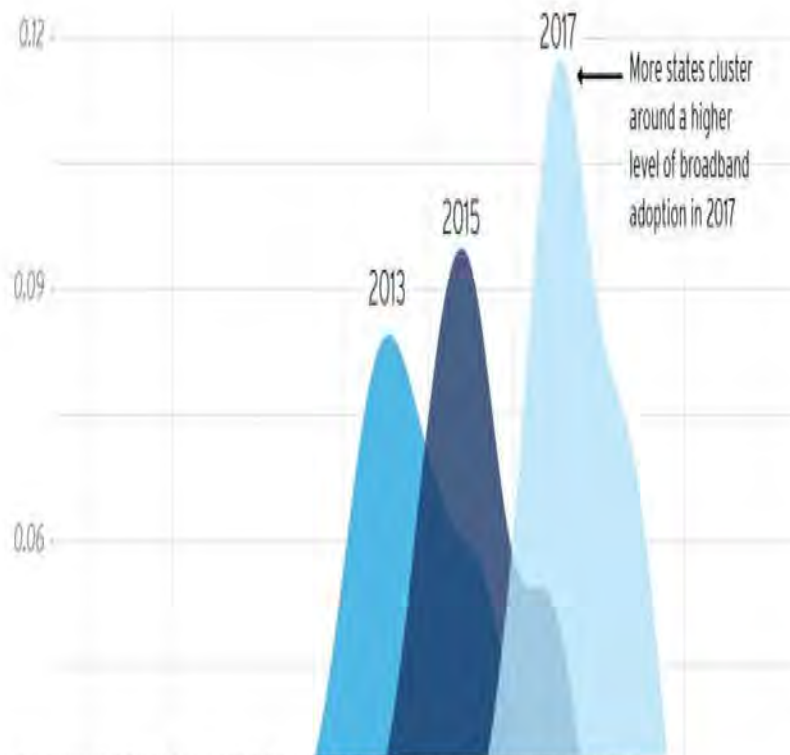
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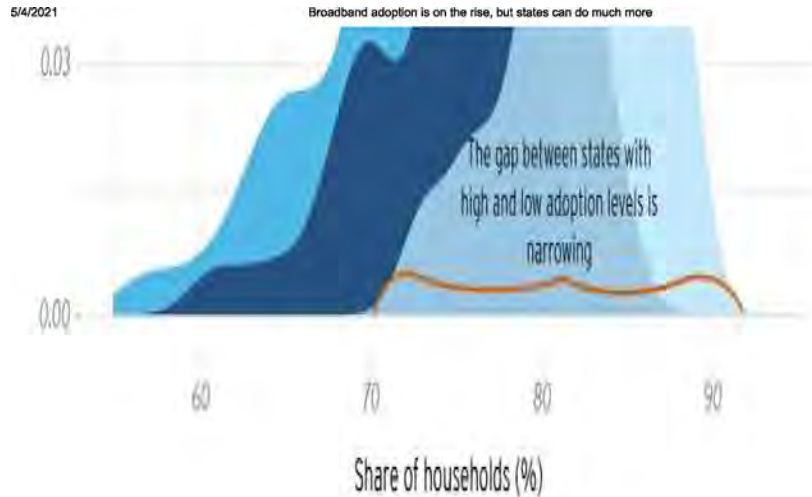
The digital divide between states is narrowing

Over the past five years, the average state saw an increase in broadband adoption from 72.4% in 2013 to 82.8% in 2017. While all states saw increases in broadband adoption rates over the five-year span, the gains were most significant at the bottom, closing the gap between the highest and lowest adoption states. In 2013, the average broadband adoption rate for the top ten states was 78.8%, while the average adoption rate for the bottom ten was 14.8 percentage points lower, at 64.0%. By 2017, the gap between the top and bottom ten had fallen to 10.6 percentage points.

FIGURE 2

Broadband adoption rate across the United States 2017, 1-year estimates





Source: Brookings analysis of American Community Survey data

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Though data for broadband adoption rates by income group only goes back to 2015, the gap between average adoption rates for high-income (those earning above \$75,000) and low-income (below \$20,000) households is also narrowing. In 2015, the average state saw a 42.6 percentage point difference in adoption rates between high and low earners. In 2017, the difference between high and low earners dropped to 35.5 percentage points. Though the gap is narrowing, there's still a long way to go for states whose low-income residents lag so far behind their higher-earning neighbors.

Table 1. 10 states with lowest adoption rates for low-income households

5/4/2021

Broadband adoption is on the rise, but states can do much more

State	Overall Broadband Adoption Rate (%)	Broadband Adoption Rate for Households Earning Below 20k (%)
Mississippi	73.4	49.7
Arkansas	73.0	49.8
Louisiana	75.6	50.8
New Mexico	76.4	53.9
South Carolina	79.2	54
North Dakota	81.3	54
South Dakota	80.6	54.1
Pennsylvania	81.5	54.2
Maine	82	54.3
Kentucky	78.9	54.4

Not all broadband connections are the same

<https://www.brookings.edu/blog/the-avenue/2019/10/10/broadband-adoption-is-on-the-rise-but-states-can-do-much-more/>

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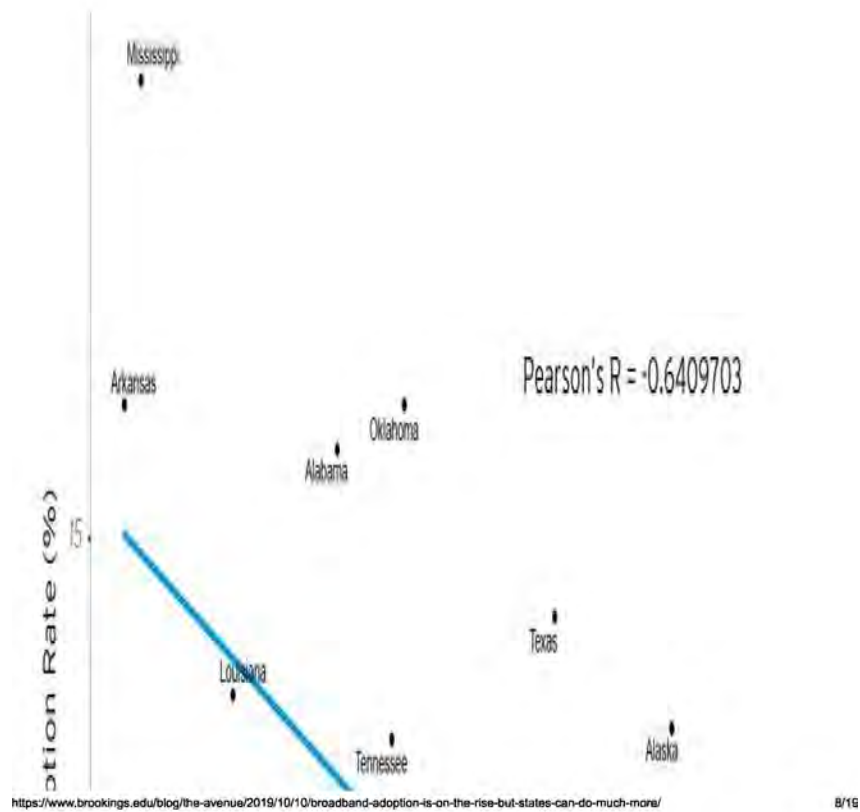
Broadband adoption is on the rise, but states can do much more

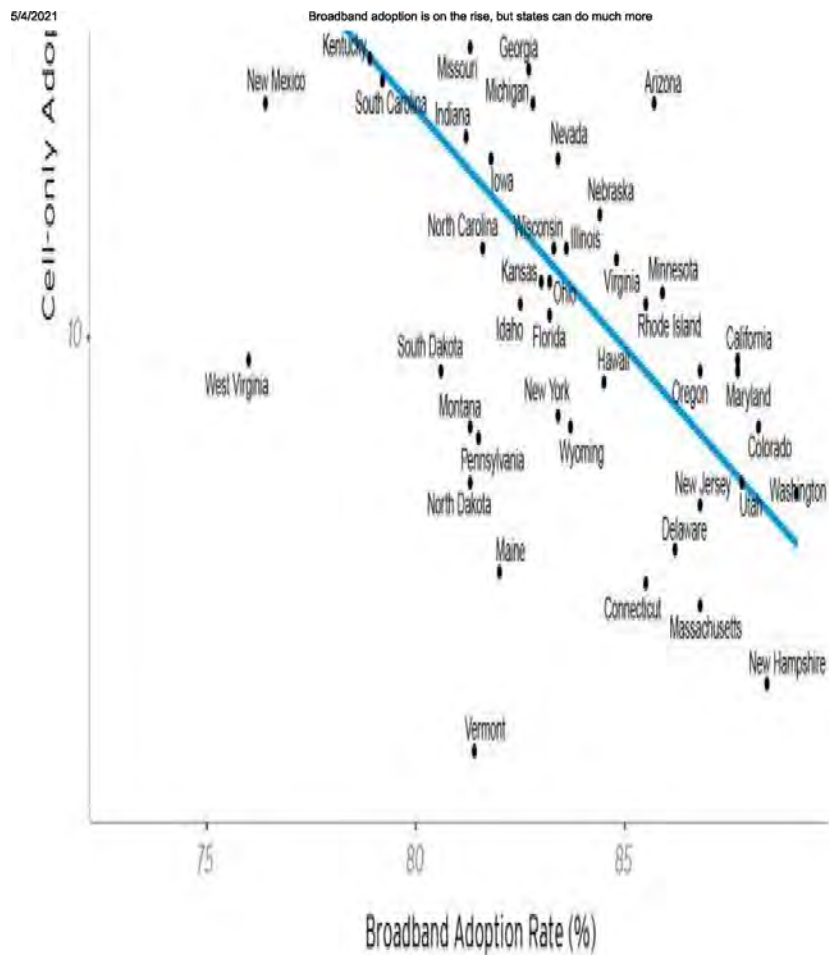
According to the Federal Communications Commission, the word “broadband” actually refers to a spectrum of technologies, including both fixed and mobile services. And even though mobile services meet the statutory definition of broadband, it is not a full substitute for fixed, in-home services.

This distinction—in-home and mobile services are complements, not substitutes—makes it all the more concerning that the states with the lowest broadband adoption rates also have the highest mobile-only subscriptions. The 10 states with the lowest rates of household broadband adoption had a mobile-only subscription rate of 14.1%, with states in the Southeast and South Central registering the highest mobile-only rates.

FIGURE 3

States with the lowest broadband adoption also have the highest cell-only rates
2017, 1-year estimates





Source: Brookings analysis of American Community Survey data

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<https://www.brookings.edu/blog/the-avenue/2019/10/10/broadband-adoption-is-on-the-rise-but-states-can-do-much-more/>

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5/4/2021

Broadband adoption is on the rise, but states can do much more

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<https://www.brookings.edu/blog/the-avenue/2019/10/10/broadband-adoption-is-on-the-rise-but-states-can-do-much-more/>

10/19

FIGURE 4

Cell-only broadband adoption rate across the United States

2017, 1-year estimates



5/4/2021

Broadband adoption is on the rise, but states can do much more



Source: Brookings analysis of American Community Survey data

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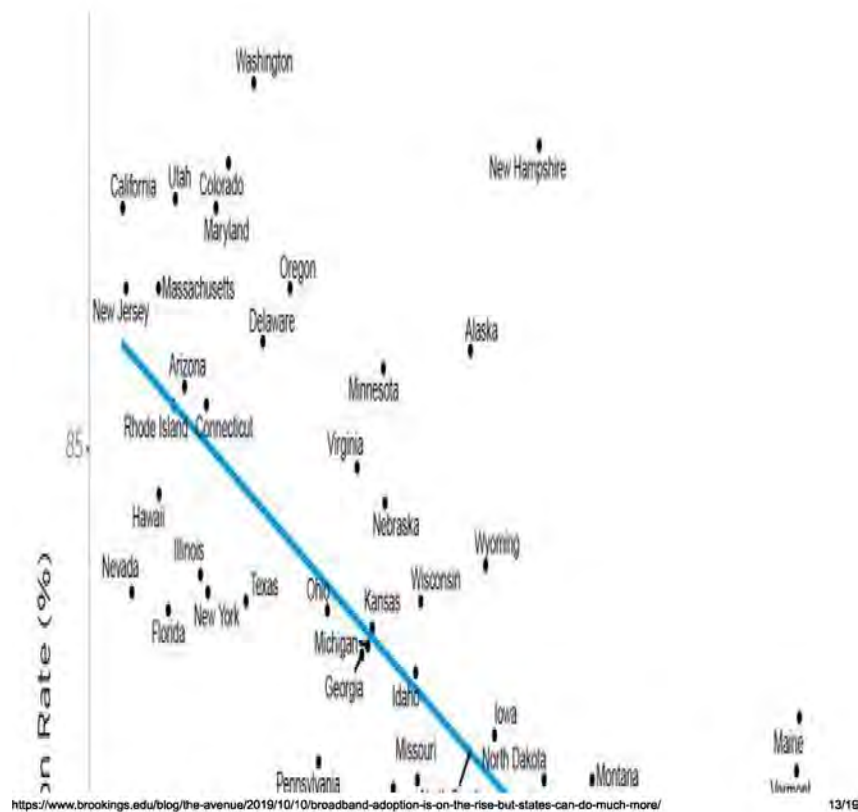
What drives the differences between states?

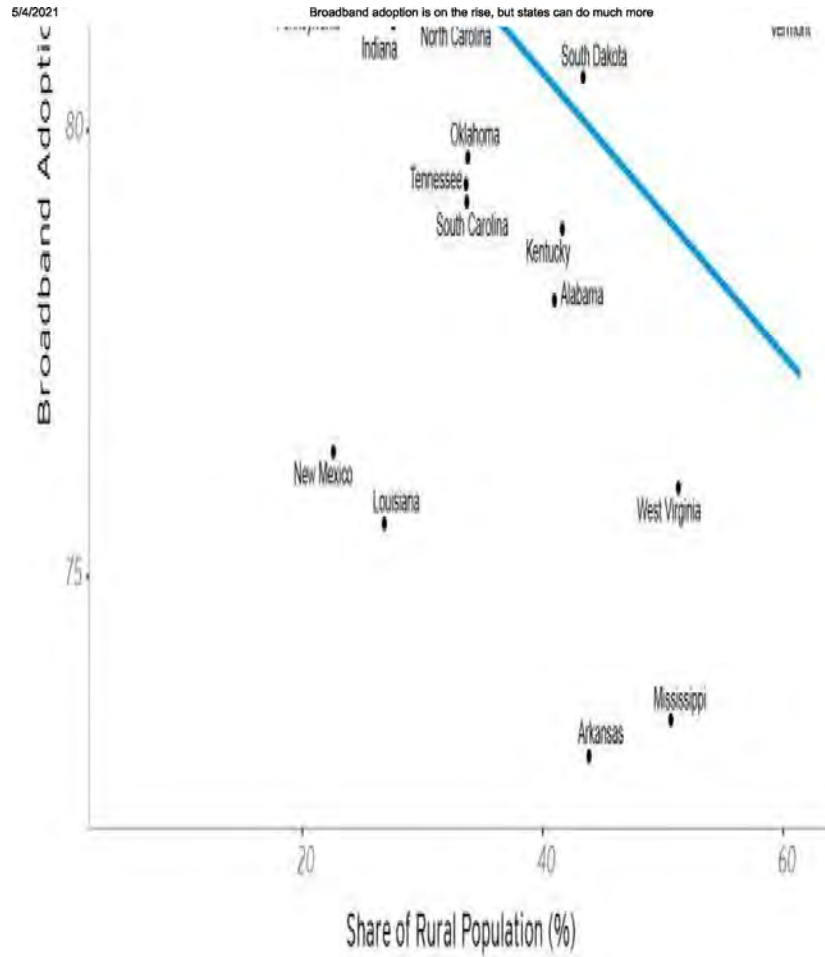
In understanding what drives different outcomes across states, we looked at four variables of interest: income, race, rural population, and education. Using regressions to analyze those variables, our team found results similar to many other researchers before us (see [here](#) and [here](#)). States with higher median incomes, higher rates of education, fewer residents of color, and a smaller rural population share had higher overall broadband adoption rates. In terms of mobile-only subscriptions, the reverse is true. States with larger shares of Black residents and lower levels of education had higher rates of mobile-only services.

FIGURE 5

States with larger rural populations have lower broadband adoption rates

2017, 1-year estimates





Source: Brookings analysis of American Community Survey data

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5/4/2021

Broadband adoption is on the rise, but states can do much more

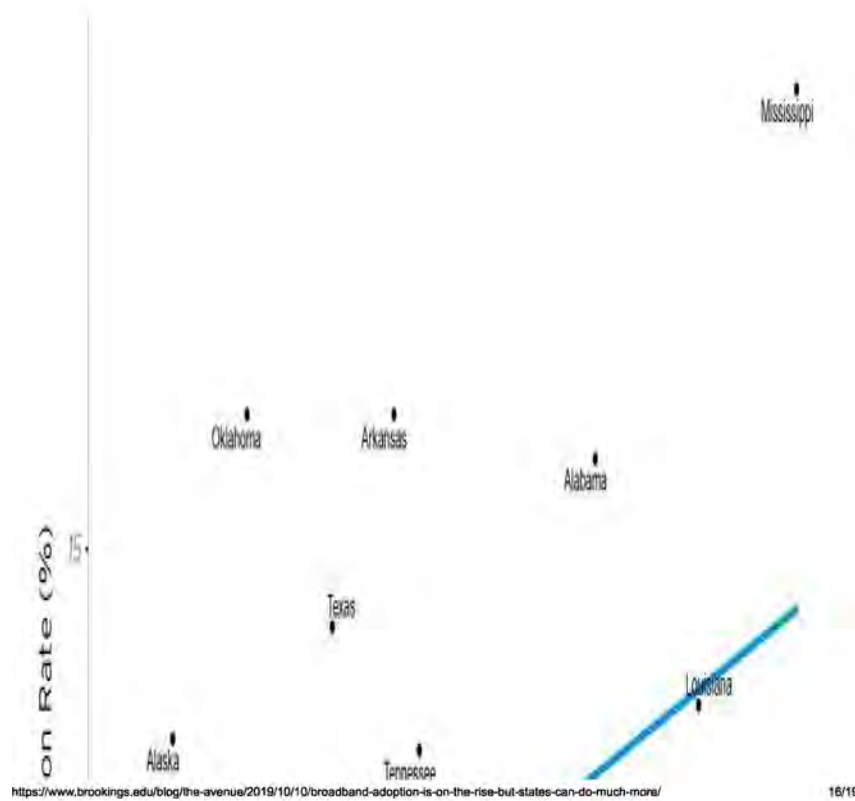
<https://www.unccokings.edu/blog/the-avenue/2019/10/10/broadband-adoption-is-on-the-rise-but-states-can-do-much-more/>

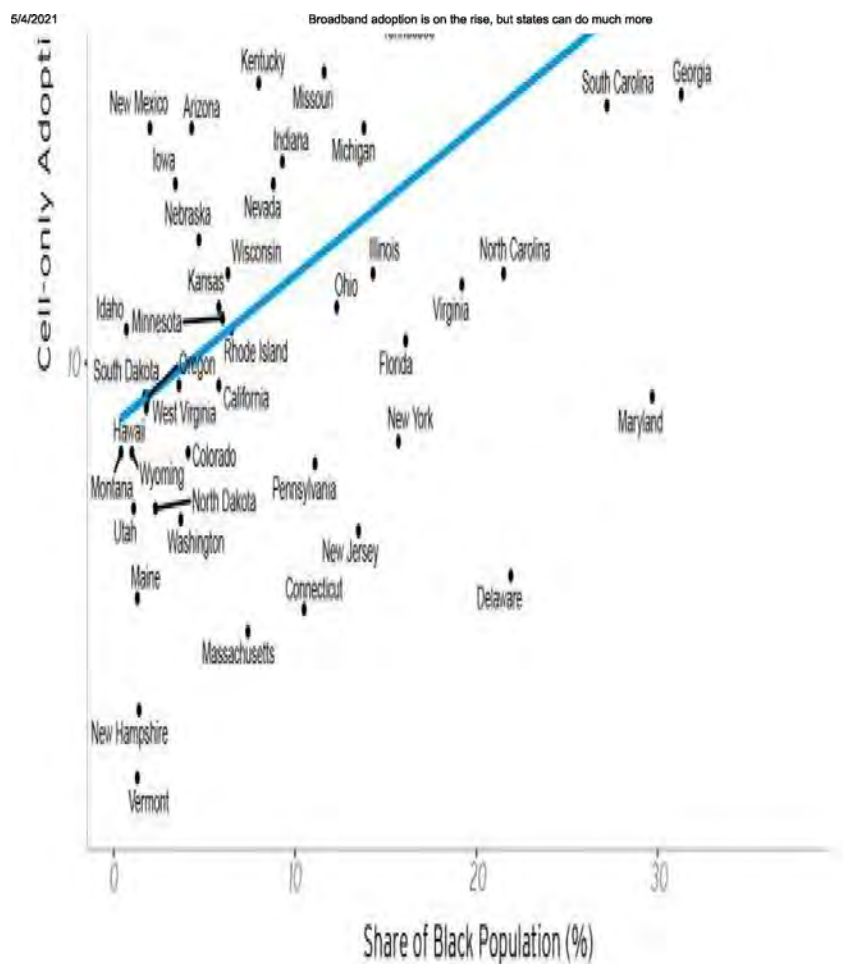
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FIGURE 6

States with larger Black populations have higher cell-only adoption rates

2017, 1-year estimates





Source: Brookings analysis of American Community Survey data

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<https://www.brookings.edu/blog/the-avenue/2019/10/10/broadband-adoption-is-on-the-rise-but-states-can-do-much-more/>

17/16

The growing research consensus around these variables of interest presents a valuable opportunity to inform policy design. If specific factors consistently impact broadband adoption, states can prioritize policies that will overcome barriers to more equitable broadband performance. For example, states with higher shares of low-income residents may want to prioritize policies to address affordability, while states with residents with lower levels of educational attainment may want to prioritize digital literacy programming.

What levers do states have?

States have a number of tools they can employ to expand broadband services and increase adoption rates across the state. A recent [project by the Pew Charitable Trusts](#) lays out the different funding mechanisms, funding goals, incentives, and policy initiatives that states can leverage to extend services by offsetting the cost of deployment or encouraging more providers to enter the market.

With so many factors at play in a given state, it is difficult to gauge the effectiveness of any one program. But the [breadth of levers](#) is worth exploring. Maine, for example, [provides a tax credit](#) for leasing or buying broadband equipment. Virginia is using money from the [Tobacco Region Revitalization Commission](#) to expand broadband programs. And many other states have set up funds directed to underserved areas, as well as “last mile projects” that deliver broadband service directly to customers.

However, there is still more that states can do. Many should reconsider laws that [block local efforts to expand broadband access](#), which limit opportunities to service populations that privately owned broadband networks will not.

Although increasing broadband availability is an important step, states can also do more to develop scalable adoption programming. After all, according to a recent report by [Pew](#), only 22% of non-broadband users cite a lack of access or speed as a prohibitive barrier. Meanwhile, 50% cite cost as a major factor, and 45% cite a lack of relevancy (or perceived usefulness).

5/4/2021

Broadband adoption is on the rise, but states can do much more

These numbers, backed by our earlier findings, suggest that states need to do more to increase affordable options and digital literacy training. North Carolina, for example, has a Broadband Infrastructure Office, which has published a set of recommendations to increase adoption rates. These include advertising low-cost options, extending high-speed service to libraries, and building out digital literacy tools.

The digital divide between states only further confirms the country's broadband needs. Federal action may be difficult to predict, but states have a unique opportunity to address their challenges today while informing the eventual federal policies to come.

P E R S P E C T I V E S

PHOENIX CENTER FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES

OTI's *Cost of Connectivity 2020 Report*: A Critical Review

George S. Ford, PhD

July 20, 2020

Introduction

With Congress poised to spend as much as \$100 billion on broadband deployment and adoption as part of the next COVID relief package,¹ a renewed effort to push municipal broadband to the forefront of the broadband policy debate is afoot. A common narrative in this effort is that government-run networks charge lower prices for broadband than do their private counterparts. In recent years, several reports claim to offer evidence of such discounts.² Yet, all these reports suffer from poor design and unskilled analysis. Once corrected for errors, the data used by these reports reveal no price disparity.³

Advocates for municipal broadband are, if anything, persistent. For example, the Open Technology Institute ("OTI") at the New America Foundation recently released a report entitled *Cost of Connectivity 2020* which purports to show that municipal broadband networks "offer the fastest, most affordable" broadband services and that "locally-owned networks yield significant cost savings for consumers."⁴ Supporters of municipal broadband praised OTI's analysis.⁵ A close look at the *OTI Report* and its data, however, reveals severe problems.

As shown in this PERSPECTIVE, the *OTI Report's* data, once corrected for errors, do not support the hypothesis that government-run networks charge lower prices. Nor should they. The law of one price from economic theory states that within a single market the quality-adjusted prices for rivals should be equal. Using the *OTI Report* data, my analysis finds support for the law of one

price. The proper question is not whether prices among firms in a single market differ, but rather whether average prices differ between markets that do or do not have a municipal provider.⁶ Using OTI's data, I find that average prices are about 13% higher in cities with a municipal provider than in cities without a government-run network.

[T]he OTI Report's data, once corrected for errors, do not support the hypothesis that government-run networks charge lower prices. Nor should they. The law of one price from economic theory states that within a single market the quality-adjusted prices for rivals should be equal.

My analysis is organized as follows: First, I describe the law of one price and what it says about expected price differences within a market. Second, I discuss the data problems with the *OTI Report*. Third, excluding the bad data, I estimate the difference in average prices between municipal and private broadband providers; no difference is found. Comparing average prices between markets with and without a municipal system shows higher prices in markets with government-run networks. Fourth, I offer a brief discussion of the problems with the price-per-megabit index used in the *OTI Report*, and fifth I

discuss the anticompetitive and predatory nature of municipal broadband.

The Law of One Price

The purpose of the *OTI Report* is to compare prices between government-owned and private networks within markets (or cities). While the *OTI Report* also compares prices across nations, I ignore these international comparisons for now as that is an entirely different and more complex problem (and largely meaningless).⁷

When comparing prices among sellers in a market, it is essential to begin with an expectation about how prices are determined—no such analysis is offered in the *OTI Report*. Economic theory provides a straightforward explanation. Put simply, within a single market, sellers compete for the patronage by offering attractive price-quality combinations to consumers. If one firm offers a highly favorable price-quality combination relative to its rivals, then all consumers will choose that firm's offering, leaving the higher-priced firms without revenue. Rational, efficient sellers will keep their price-quality offerings in line with rivals so as remain profitable. Therefore, prices within a market will converge to equal (quality adjusted) prices.

Presumably, the authors of the *OTI Report* believe that private and municipal broadband providers are competing for customers. To my knowledge, none of the municipal networks in the *OTI Report's* sample have a 100% market share. Thus, the price-quality offerings of private providers must be comparable to those of municipal providers, assuming consumers act rationally. This similarity of quality-adjusted prices within a single market is known as the "law of one price."⁸ Davis and Garcés (2010) define the "law of one price" as follows:

The "law of one price" states that active sellers of identical goods must sell them at identical prices. If one seller lowers price, it will get all the demand and the others will sell nothing. If a seller increases price above a rival, she will

sell nothing. Since only the firm with the lowest price sells, the equilibrium result is that all active firms sell at the same price and share the customers.⁹

Within a single market, *like* things will sell for *like* prices. If large prices differences are found, then such differences are good evidence that the analyst has failed to properly measure price, is comparing prices of unlike services, or comparing prices *across* rather than *within* markets. For the most part, a search for meaningful price differences among firms in the same market with the same quality of services is pointless, though that is exactly what the *OTI Report* aims to do.

The proper question is not whether prices among firms in a single market differ, but rather whether average prices differ between markets that do or do not have a municipal provider. Using OTI's data, I find that average prices are about 13% higher in cities with a municipal provider than in cities without a government-run network.

Economic theory suggests that we should expect seller prices for a similar broadband service in the same market should be approximately equal.¹⁰ That said, when some or all sellers offer bundles of services, then such price comparisons become very complex. While the *OTI Report* seeks to compare prices for a standalone broadband product, which is popular among some consumers, is not the most common way broadband services are purchased. Even today, many households obtain broadband service combined with multichannel video services, telephone services, and possibly other services.

Given the law of one price, a more appropriate price comparison is between markets that have a

P E R S P E C T I V E S

municipal provider and markets that do not. If municipal providers charge lower prices, then those prices will be matched by their private-sector rivals. Markets without a municipal provider are not exposed to this pricing pressure, to the extent it exists. Comparing prices between markets with different market structures is common in the economic literature. For instance, in the literature on competitive cable video markets, prices are compared across monopoly and competitive markets; prices are not compared between providers in a single market. In making such comparisons across markets, differences in the demand- and supply-side conditions among markets are normally accounted for by statistical methods (normally, regression analysis).

The OTI Report's Data Errors

Included in the *OTI Report* is a link to the survey data used to make price comparisons (which is commendable). Here, I will use this data to conduct statistical tests of price differences among ownership types and across market types. But first, errors in the data must be addressed.

First, the *OTI Report* surveys fourteen cities and finds that "the lowest average price is in Ammon, Idaho, a city with a municipally-owned open access network,"¹¹ thus earning Ammon the title of "most affordable" city in America.¹² Unfortunately for OTI, the prices reported in their *Report* for providers in Ammon are incorrect, and the error should have been obvious to the authors. The *OTI Report's* data shows that two retail operations using the municipalities open-access network charge \$9.88 or \$14.88 for a 1 Gbps connection. There is no plausible long-term business case for prices this low, absent substantial subsidization, as these prices cannot possibly cover the full economic cost of providing broadband services.

Nor do they.

Indeed, these prices represent only a small share of the total cost of obtaining this service. In

Ammon, a customer of a retailer using the municipal network pays both the retailer and the city for broadband service. These charges appear on the customer's utility bill, including a payment on what is effectively a 20-year loan of \$3,000-\$3,500 to connect the home to the network.¹³ This loan payment and other costs amount to a fee of about \$40 per month in addition to the retailer's fee. However, it does not make sense simply to add the \$40 to the retailer price, as the customer is required to take out a 20-year loan (or else pay the entire connection cost upfront), which is not a trivial financial transaction.

Within a single market, like things will sell for like prices. If large prices differences are found, then such differences are good evidence that the analyst has failed to properly measure price, is comparing prices of unlike services, or comparing prices across rather than within markets.

Also, the open-access model is prone to aggressive and ruinous price competition. In Ammon, customers can easily switch among retailers, all offering essentially a homogenous service. Consequently, the retailers must resort to aggressive price competition, as there is little room for differentiation. The long-term profitability of the retailers in Ammon charging \$10 per month to service an account is unknown, but there are good reasons to question the economic viability of this program. Such models have not proved especially resilient in the past.¹⁴

Moreover, the service providers in Ammon are not municipalities, but profit-maximizing entities. To describe this scenario as a municipal broadband network is questionable and is more akin to the public-private partnership, especially

given the financial arrangements between the city and the networks subscribers. To what extent the city subsidizes the network with tax or utility revenue is unknown (to me) at this time, but it seems likely that cross-subsidies do exist (as discussed later).

Also, the OTI Report's data include a third retailer (Directcom) in Ammon that charges \$109.95 per month for a 1 Gbps connection. A visit to the provider's website, however, confirms that this provider does not offer service in Ammon, so this is a data error. The Ammon data is a mess, so my statistical analysis excludes all data from this city.

[T]he OTI Report surveys fourteen cities and finds that "the lowest average price is in Ammon, Idaho, a city with a municipally-owned open access network," thus earning Ammon the title of "most affordable" city in America. Unfortunately for OTI, the prices reported in their Report for providers in Ammon are incorrect, and the error should have been obvious to the authors.

Statistical Analysis

Given the peculiarities in the business model in and errors in the data for Ammon, Idaho, I exclude all prices from the city for statistical analysis. For the remainder of the sample, I compute a price for broadband service equal to the lowest price available (including promotions) for each service plan including the cost (if any) of a broadband modem. I assume all homes pay the modem fee for a given provider, though this is probably an overstatement of price.

To ensure comparable services, broadband is defined as a connection capable of a download

speed of 100 Mbps or better, since the vast majority of consumers could not tell the difference between broadband speeds of 100 Mbps or 1 Gbps. In a separate analysis, I use a threshold of 25 Mbps. Plans with speeds greater than 1 Gbps are excluded since such services do not represent a consumer service and the prices are very high.¹⁵

Prices Comparison by Firm Type

To test whether municipal providers offer lower prices than private providers, I perform the means difference test using the least-squares regression model,

$$p_{im} = \Delta muni_i + \mu_m + \chi_{im} + \varepsilon_{im} \quad (1)$$

where p_{im} is the price of provider i in market m , $muni_i$ is a dummy variable indicating whether the provider i is a municipal system (or retailer using the municipal system), μ_m is a market fixed effect, χ_{im} is a download speed fixed effect, and ε_{im} is the econometric disturbance term.¹⁶

The coefficient Δ measures the difference in average price charged by municipal systems relative to private providers and the t-statistic on this coefficient is used for hypothesis testing. As noted above, the expectation is that the prices among providers in each market is zero. I also apply the natural log transformation to the price, where $\exp(\Delta) - 1$ measures the percentage difference in prices.

Before summarizing the regression results, note that for broadband services with download speeds of at least 100 Mbps the unconditional mean price is \$74.66 private providers and is \$76.46 for municipal providers, so the average municipal price is slightly higher. Because the regression analysis includes fixed effects for city and speed, the estimated means may differ from these simple averages.

Regression results are summarized in Table 1, based on a sample of 165 plans across 13 cities for

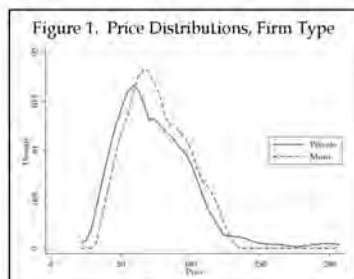
P E R S P E C T I V E S

26 providers. Standard errors are robust to heteroskedasticity.

Table 1. Price Comparisons
(Comparing Firm Types, ≥ 100 Mbps)

	β_m	$\ln(\beta_m)$
Δ	-0.655 (-0.05)	0.0237 (0.16)
Mean Private:	74.78*** (40.94)	4.255*** (196.1)
City FE	Yes	Yes
Speed FE	Yes	Yes
Observations	165	165
Stat. Sig.	* 10%, ** 5%, *** 1%	

From Table 1 we see that the average price for broadband for private sellers is \$74.78 per month. The average price for municipal providers is \$74.13 (adding the Δ coefficient to the private mean).¹⁷ The difference is trivially small and not statistically different from zero; the t-statistic on the Δ coefficient is only -0.05. With price expressed in log form, the Δ coefficient is positive but again small and not statistically different from zero ($t = 0.16$). It is not possible to reject the null hypothesis that the prices charged by municipal providers and private providers are equal. The law of one price holds.



It may be easier to grasp the results by looking at the distributions of prices. Figure 1 illustrates the price distribution of private and municipal providers (using a kernel-density function, which is smoothed histogram) for plans with speeds of at least 100 Mbps. There are two

distributions shown: (1) the solid line for private providers and (2) the dashed line for municipal providers. The distributions of prices across the ownership types are nearly identical, as the regression confirms. Across plans and markets, municipal and private providers are charging prices drawn from essentially the same distribution.

This analysis confirms that any statistically meaningful differences in prices between municipal and private providers from the OTI Report's survey is the consequence of careless data collection.

Setting the broadband threshold at 25 Mbps, Equation (1) is re-estimated. The results are summarized in Table 2. Now there are 210 observations across 13 cities and 30 providers. The Δ coefficient is now positive, but very small. The null hypothesis of equal prices cannot be rejected at standard levels for either specification of the dependent variable (the t-statistics are 0.03 or 0.07).

Table 2. Price Comparisons
(Comparing Firm Types, ≥ 25 Mbps)

	β_m	$\ln(\beta_m)$
Δ	0.264 (0.03)	0.009 (0.07)
Mean Private:	69.47*** (38.14)	4.160*** (188.5)
City FE	Yes	Yes
Speed FE	Yes	Yes
Observations	210	210
Stat. Sig.	* 10%, ** 5%, *** 1%	

As should be expected, the law of one price holds—there are no price differences by ownership type within a market. The Open Technology Institute's claim that municipal systems charge lower prices is unsupported by the data used in its *Report* once the data anomalies are eliminated.

P E R S P E C T I V E S

We can see the effect of the data problems in the *OTI Report's* survey by including the data from the city of Ammon in the sample. The results are summarized in Table 3 and the sample includes 14 additional observations (which includes additional private providers as well).

Table 3. Price Comparisons
(Including bad data, ≥ 100 Mbps)

	p_m	$\ln(p_m)$
Δ	-20.18* (-1.95)	-0.487** (-2.55)
Mean Private	74.53*** (37.84)	4.241*** (146.5)
City FE	Yes	Yes
Speed FE	Yes	Yes
Observations	179	179
Stat. Sig. * 10%, ** 5%, *** 1%		

The Δ coefficient is has changed from -0.655 to -20.18, a huge difference. The bad data are very influential, but with relatively few perverse datapoints the coefficient (despite being large) is statistically different from zero only at the 10% level. With log price, the percentage difference is 39%, and the coefficient is statistically different from zero at the 5% level. This analysis confirms that any statistically meaningful differences in prices between municipal and private providers from the *OTI Report's* survey is the consequence of careless data collection.

Price Comparisons by Market Type

The more interesting question is whether prices in markets with a municipal provider are, on average, lower than in markets without a government-run network. To test for such a difference, the regression model is,

$$p_m = \beta_0 + \delta \text{munimkt}_m + \chi_{im} + \epsilon_{im} \quad (2)$$

where munimkt_m is a dummy variable indicating the presence of municipal network in market m .¹⁸

The β_0 measures the average price in markets without a municipal network and $\beta_0 + \delta$ measures the price in markets with a municipal network (so

δ measures the difference in prices). Results are summarized in Table 4. Note that the unconditional mean prices are \$71.77 in cities without a municipal provider and \$84.72 in cities with a government-run network.

Table 4. Price Comparisons
(Comparing Market Types, ≥ 100 Mbps)

	p_m	$\ln(p_m)$
δ	16.96** (2.88)	0.206*** (3.50)
β_0	70.85*** (36.64)	4.208*** (167.9)
City FE	No	No
Speed FE	Yes	Yes
Observations	165	165
Stat. Sig. * 10%, ** 5%, *** 1%		

In Table 4, we see that average prices in markets with a municipal network are much higher than markets without government-run networks. The average price in non-muni cities is \$70.85, but \$87.80 in cities with municipal networks. The difference ($\delta = \$16.96$) is statistically different from zero at the 5% level. When price is expressed in natural log form, prices are 23% higher in cities with municipal networks, and this difference is also statistically different from zero at the 1% level. Similar results are found at the broadband threshold of 25 Mbps (a 20% difference, also significant at the 1% level).

Much of the analysis in the OTI Report is based on price-per-megabit, an index created by dividing price by the download speed of the connection. Serious analysts know that for several reasons "price-per-megabit" is largely a meaningless statistic, at least for price comparisons.

Figure 2 illustrates the price distributions by market type, with the solid line showing the price

distribution in markets without municipal providers and the dashed line for markets with government-run networks. The figure shows that the price distribution in markets with municipal providers is shifted to the right (toward higher prices), as the regression confirms.



When comparing prices across cities, it probably makes sense to include other factors that may affect prices. Prices may be higher, for instance, in cities where incomes are higher. The augmented regression model may be written as,

$$p_{im} = \beta_0 + \delta \text{munimkt}_m + \gamma_{im} + \theta X_m + \epsilon_{im} \quad (3)$$

where X_m is a matrix of market factors that may influence price (and θ a vector of coefficients). Regressors include median income, average age, and average gross rent for the city.¹⁹ For this model, all variables are expressed in natural log form (so $\exp(\delta) - 1$ measures the percent difference); the coefficients on the additional regressors measure elasticities. Results are summarized in Table 5 for the two broadband threshold levels.

Table 5. Price Comparisons
(Comparing Market Types)

	≥ 25 Mbps	≥ 100 Mbps
δ	0.113** (2.24)	0.139** (2.53)
Med. Income	0.118 (0.46)	0.266 (1.17)
Avg. Age	-1.159*** (-3.45)	-1.528*** (-4.01)
Avg. Rent	0.191 (0.60)	-0.346 (-1.18)
β_0	8.324*** (6.67)	9.174*** (6.24)
City FE	No	No
Speed FE	Yes	Yes
Observations	210	165
Stat. Sig.	* 10%, ** 5%, *** 1%	

We see from the table that the prices are not much affected by the demographics. A 10% increase in income changes prices by about 2%, though the change is not statistically different from zero. Only age is statistically different from zero; prices are lower in cities with younger populations.

Even with additional regressors, the δ coefficients remain statistically different from zero at the 5% level. Prices in cities with a municipal provider are about 13% higher (on average) than prices in cities without a municipal provider. Based on the *OTI Report's* survey data, in cities with a government-run network, prices are higher for broadband.

Price-Per-Megabit is a Misleading Statistic

Much of the analysis in the *OTI Report* is based on price-per-megabit, an index created by dividing price by the download speed of the connection. Serious analysts know that for several reasons “price-per-megabit” is largely a meaningless statistic, at least for price comparisons.

First, consumers do not pay a price-per-megabit, so the price does not reflect the prices faced by consumers. Second, broadband speeds are routinely increased by providers without changes in price, though most consumers do not

P E R S P E C T I V E S

view this as a price reduction. Third, price and quality cannot be condensed to single index.

Perhaps more importantly, price-per-megabit comparisons can lead to very perverse conclusions. For instance, a price-per-megabit of \$1 is not necessarily better for consumers than a price-per-megabit of \$2. Say, the price-per-megabit of \$1 is based on a gigabit service level, having a monthly price of \$1,000—more than nearly any consumer could afford. The price of \$2 per-megabit might be for a 25 Mbps service, for a monthly price of \$50. Nearly every consumer would prefer the lower priced service despite its lower speed.

We can see this problem in OTI's data. The average price for a 1 Gbps connection is about \$80, so the price-per-megabit is about \$0.08. For a 10 Gbps connection, the average monthly price is about \$475 for a price-per-megabit of \$0.0475. In terms of price-per-megabit, the 10 Gbps services is 40% cheaper, when the monthly price is nearly five-times as expensive. In making a choice, the consumer will compare \$80 to \$475 not \$0.08 to \$0.0475.

Unless theoretically justified, price-per-megabit should be cautiously and sparingly used, and its limitations explicitly recognized.

Subsidies and Predation

As I have detailed elsewhere, municipal broadband is not pro-competitive but predatory.²⁰ Municipal networks are typically highly subsidized, with expenses covered by taxation and, in some cases, higher utility bills.²¹ Private providers in the market do not obtain such government support, causing an asymmetry in the costs of providing service. Even so, the expectation is that municipal networks will fail financially, so the government-run networks must be highly inefficient relative to private providers.

In the case of Ammon, Idaho, reports on the network demonstrate the problem. As noted by

Patterson (2018), Ammon's city network "does not rely on achieving a specific take rate to break even, and it will never generate a profit."²² If the municipal network "will never generate a profit," then low relative prices, to the extent they exist, reflect prices below cost. Financial support from the city, which is withheld from private companies operating in the city, distort competition rather than support it. Such practices should receive antitrust scrutiny, and one day may do so when private providers grow sufficiently weary of such unfair practices.

If the municipal network "will never generate a profit," then low relative prices, to the extent they exist, reflect prices below cost.

Conclusion

By the law of one price, price differences for like products and services are unsustainable. Thus, the Open Technology Institute's attempt to show that municipal systems charge lower prices than their private counterparts, which is one goal of the *OTI Report*, is largely a meaningless exercise. In fact, using the data from the *OTI Report*, but excluding survey errors, I show in this PERSPECTIVE that the law of one price holds: prices charged by municipal providers are no different than those charged by private providers in the same market.

Empirical evidence suggests, however, that prices in markets with a municipal provider are higher than those in markets without a government-run network. Higher prices in cities with municipal networks do not support an expansion of municipal broadband, though government-run networks may be rejected as sensible on antitrust grounds and the financial burden imposed on residents.

P E R S P E C T I V E S

NOTES:

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¹ House Democrats Release Text of H.R. 2, A Transformational Infrastructure Bill to Create Jobs and Rebuild America, Press Release (Jun 22, 2020) (available at: <https://energycommerce.house.gov/newsroom/press-releases/house-democrats-release-text-of-hr-2-a-transformational-infrastructure-bill>) ("Delivers affordable high-speed broadband Internet access to all parts of the country by investing \$100 billion to promote competition for broadband internet infrastructure in unserved and underserved communities, prioritizing those with persistent poverty.").

² G.S. Ford, *A Review of the Berkman Center's Price Survey of Municipal Broadband Markets*, PHOENIX CENTER POLICY PERSPECTIVE No. 18-01 (January 24, 2018) (available at: <https://www.phoenix-center.org/perspectives/Perspective18-01Final.pdf>); G.S. Ford, *Why Chattanooga is not the "Poster Child" for Municipal Broadband*, PHOENIX CENTER POLICY PERSPECTIVE No. 15-01 (January 20, 2015) (available at: <https://www.phoenix-center.org/perspectives/Perspective15-01Final.pdf>); G.S. Ford, *Do Municipal Networks Offer More Attractive Service Offerings than Private Sector Providers? A Review and Expansion of the Evidence*, PHOENIX CENTER POLICY PERSPECTIVE No. 14-01 (January 27, 2014) (available at: <https://www.phoenix-center.org/perspectives/Perspective14-01Final.pdf>).

³ *Id.*

⁴ B. Chao and C. Park, *The Cost of Connectivity 2020*, Open Technology Institute (July 15, 2020) (available at: <https://www.newamerica.org/oti/reports/cost-connectivity-2020>) (hereinafter "OTI Report") at p. 7.

⁵ See, e.g., Tweet by Representative James Clyburn (July 15, 2020 12:08 PM) ("Affordability must no longer be a barrier to internet adoption. The #HousePassed Accessible, Affordable Internet for All Act addresses this by promoting price transparency, protecting local public options, and ensuring affordable plans are offered on newly-funded networks."); Tweet by FCC Commissioner Geoffrey Starks (July 15, 2020 12:42 PM) ("Kudos to @OTI for investing in this deep analysis and supporting efforts to make affordable broadband universal.").

⁶ There is a rich literature comparing market outcomes across varying market structures, regulatory paradigms, and ownership types. See, e.g., S. Martin, *ADVANCED INDUSTRIAL ECONOMICS* (2002), at Ch. 5; S.M. Besen and J.R. Woodbury, *Rate Regulation, Effective Competition, and the 1992 Cable Act*, 17 *HASTINGS COMMUNICATIONS & ENTERTAINMENT LAW JOURNAL* 203-224 (1994) (available at: https://repository.uchastings.edu/hastings_comm_ent_law_journal/vol17/iss1/9); T.R. Beard, R.P. Saba, G.S. Ford, and R.C. Hill, *Fragmented Duopoly: A Conceptual and Empirical Investigation*, 78 *JOURNAL OF BUSINESS* 2377-2396; S. Basu, J. Andrews, S. Kishore, R. Panjabi, and D. Stuckler, *Comparative Performance of Private and Public Healthcare Systems in Low- and Middle-Income Countries: A Systematic Review*, 9 *PLoS MED* 1-14 (2012) (available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3378609/pdf/pmed.1001244.pdf>); A.F. Alkhuzam J. Arlet, S.L. Rocha, *Private Versus Public Electricity Distribution Utilities: Are Outcomes Different for End-Users?*, *WORLD BANK BLOGS* (May 03, 2018) (available at: <https://blogs.worldbank.org/developmenttalk/private-versus-public-electricity-distribution-utilities-are-outcomes-different-end-users>).

⁷ C.f., G.S. Ford *Is France a Broadband Nirvana? A Look at the Data*, PHOENIX CENTER POLICY PERSPECTIVE No. 20-03 (June 18, 2020) (available at: <https://www.phoenix-center.org/perspectives/Perspective20-03Final.pdf>); G.S. Ford, *Be Careful What You Ask For (Redux): A Comment on the New America Foundation's Mobile Price Metrics*, PHOENIX CENTER PERSPECTIVE No. 10-06 (November 11, 2010) (available at: <https://www.phoenix-center.org/perspectives/Perspective10-06Final.pdf>).

⁸ There's also a "law of one price" regarding commodity pricing; it is a related but different concept (<https://www.investopedia.com/terms/l/law-one-price.asp>).

⁹ P. Davis and B. Garcés, *QUANTITATIVE TECHNIQUES FOR COMPETITION AND ANTITRUST ANALYSIS* (2010), at pp. 170-1. This idea is normally attributed to George Stigler. G.J. Stigler, *Imperfections in the Capital Market*, 75 *JOURNAL OF POLITICAL ECONOMY* 287-292 (1967) (available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.541.5796&rep=rep1&type=pdf>) ("The function of a market is to permit the exchange of goods, so an efficient market (clearly a normative concept) permits all exchange which the traders prefer to nonexchange. If we assume away all costs of trading, the efficient market will achieve every desired exchange for homogeneous goods when there is only one price. This condition is clearly necessary: with two (or more) prices, one seller is receiving less than some other buyer is paying, and both would prefer to trade with one another than with whomever they are trading.").

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¹⁰ This assumes, however, that the sellers are really interested in serving the market in question. Here, the “market” is standalone broadband market, which in 2015 was not a service in high demand. Even today, very few consumers buy broadband alone. How seller prices compare in small sub-markets is unaddressed by the *OTT Report*.

¹¹ *OTT Report*, *supra* n. 4 at p. 7.

¹² *Id.* at p. 6.

¹³ See, e.g., R. Suppe, *Ammon Fiber Explained: Utility Leaders Host Information Meeting to Deter Misinformation*, POST REGISTER (June 6, 2019) (available at: https://www.postregister.com/news/local/ammon-%c3%95ber-explained-utility-leaders-host-information-meeting-to-deter-misinformation/article_159dde53-c15f-541c-8891-c1c18f1927c5.html).

¹⁴ See, e.g., W. Lehr, M. Sirbu, and S. Gillett, *Broadband Open Access: Lessons from Municipal Network Case Studies*, Working Paper (2003) (available at: https://www.researchgate.net/publication/228528290_Broadband_open_access_Lessons_from_municipal_network_case_studies).

¹⁵ Including these service tiers leads to much higher prices for municipal systems. There are only 9 plans and 5 providers in the sample offering such speeds. The average price of these high speed connections is about \$380 per month.

¹⁶ The fixed effects limit (to a large extent) the price comparison to price differences by firm type rather than by market or speed. Some recoding of speed was done so that at least two observations were in each speed group (e.g., 155 Mbps was recoded to 150 Mbps; 80 Mbps was recoded to 75 Mbps; and so forth). Price-per-megabit was calculated with the raw speed data.

¹⁷ Excluding the fixed effects, the Δ coefficient is 1.80 with a t-statistic of 0.26.

¹⁸ The market fixed effect is eliminated due to collinearity.

¹⁹ All demographics are obtained from www.city-data.com.

²⁰ G.S. Ford, *The Impact of Government-Owned Broadband Networks on Private Investment and Consumer Welfare*, State Government Leadership Foundation (April 6, 2016) (available at: <http://sglf.org/wp-content/uploads/sites/2/2016/04/SGLF-Muni-Broadband-Paper.pdf>).

²¹ *Id.*; see also citations *supra* n. 2.

²² B. Patterson, *What is the “Ammon Model”?*, BROADBAND PROPERTIES (May/June 2018) (available at: <https://www.fbcmag.com/community-broadband/what-is-the-ammon-model>).

P E R S P E C T I V E S

PHOENIX CENTER FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES

Subsidizing Broadband: Price, Relevance, and the Digital Divide

George S. Ford, PhD

July 7, 2020

Introduction

With the COVID pandemic drawing increased attention to the nation's Digital Divide, many in Congress want to spend billions to bridge it.¹ In fact, a recent bill calls for \$100 billion in new spending—on top of the billions the United States already spends annually to shrink the Divide—to enhance broadband adoption, which is a sizable spend of \$5,400 per household not using broadband at home.² For new spending to shrink the Digital Divide, however, any new program must address the reasons some Americans do not subscribe to broadband at home.

At the highest level of categorization, there are two types of non-adopters. First, some households cannot subscribe because service is not available at the home. Extending networks to unserved areas, which some in Congress are proposing to fund and the FCC already spends billions on annually, addresses the “availability” reason for non-adoption and should increase adoption at the current adoption rate (or slightly below, since rural areas have adoption rates about 10% lower than do urban areas).³ Second, for households that can purchase service, they do not for a variety of reasons, including the inability to pay the market price. For this second reason, several analysts and policymakers have proposed direct subsidies for home broadband service.⁴ The FCC's Lifeline Program already provides some support (\$9.25 per month) for low-income subscribers in this group, though

almost all of these subsidies are used for mobile broadband.⁵

While direct subsidies for broadband service may address the adoption shortfalls of price-sensitive consumers, these trends suggest subsidies may not fully (and perhaps not materially) bridge the Digital Divide.

To shed some light on this important topic, in this PERSPECTIVE I use the largest surveys on Internet adoption available to study the reasons for non-adoption where service is available. This survey evidence, collected by the U.S. Census Bureau, spans two decades. Consistently, the U.S. Census Bureau surveys reveal that the primary cause for non-adoption is a lack of interest in what the Internet offers. A distant second reason is the expense of the service and/or the devices required to use it. Over the past two decades, a lack of interest has risen, and expense has fallen, in importance. While direct subsidies for broadband service may address the adoption shortfalls of price-sensitive consumers, these trends suggest subsidies may not fully (and perhaps not materially) bridge the Digital Divide.

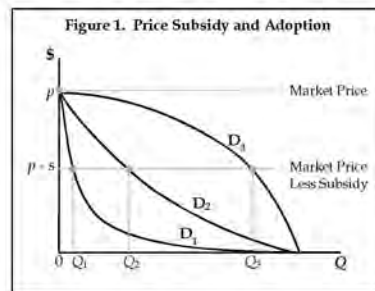
Economic Fundamentals

In the simplest format, a household subscribes to broadband service in home i when the expected

value of the service (v_i) exceeds the price (p), or $v_i \geq p$. We may take these values to be the present value of benefits and costs over some relevant time interval (monthly, yearly, and so forth). The cost of a device (computer, smartphone) may be relevant for some households. If the cost of a device is f , then adoption occurs when $v - p \geq f$ over relevant time. Plainly, as the price falls, this adoption condition is satisfied for more households and adoption rises, which is the basic argument for broadband subsidies. If the subsidy level is s , then the condition is $v_i \geq p - s_i$, where the subsidy may vary by household (e.g., income-based subsidies). The larger the subsidies, the more homes subscribe.

How much adoption rises for any subsidy (or general price reduction) depends on the distribution of values (the v_i), and the demand curve measures this distribution. If non-adopters are price sensitive, then the increase in adoption will be large. If non-adopters are not price sensitive, then the effect of a subsidy will be small.

Figure 1 illustrates the effect of a subsidy for non-adopters. I present three demand curves (D_1 , D_2 , and D_3) reflecting differences in the way a price reduction could affect adoption. The market price is p , where the effective demand for non-adopters is zero. The subsidized price is $p - s$ (where the subsidy is about half the retail price).



As we move from demand curve D_1 to D_3 , consumers are more sensitive to a price reduction (over the relevant range). For demand curve D_1 , the subsidy level s increases the quantity of broadband purchased from zero to Q_1 , a minor change. For demand curve D_2 , the subsidy increases the quantity to Q_2 , and for D_3 the subsidy increases the quantity to Q_3 , the largest of effect of all.

How much adoption rises for any subsidy (or general price reduction) depends on the distribution of values (the v_i), and the demand curve measures this distribution.

If we are to formulate expectations about how a direct subsidy will affect adoption, then having some idea about what the demand curve for broadband looks like is important. Does the demand curve look more like D_1 or D_2 or D_3 ? When data is available, analysts use econometric techniques to get a sense of the shape of the demand curve, say by estimating the own-price elasticity of demand (i.e., the percent change in Q demanded for a percent change in p). However, empirical estimates of the demand curve are valid only for the range of observed prices, so it is not always possible to trace out the demand curve for very large subsidies.

A few recent studies offer some evidence on the price-sensitivity of non-adopters. Rosston and Wallsten (2019) offer a crude estimate of the own-price demand elasticity based on Comcast's Internet Essentials program, which offers a \$10 broadband service for qualifying households.⁶ This discounted price is considerably below market prices for the typical home broadband service. Their estimates point to a demand elasticity of about 0.10, so a 50% drop in price increases subscriptions only by 5%. This analysis points to a demand curve such as D_1 as most plausible.

Using data from a large survey of non-adopters in 2011, Carare, McGovern, Noriega, and Schwarz (2015) estimate an own-price elasticity for non-adopters of 0.67, so 50% price drop increase adoptions by 33.5%. This study suggests the demand curve looks more like D_2 than D_1 or D_3 . I am unaware of any study that suggests demand curve D_3 is representative, so sober expectations about the effectiveness of subsidies are warranted.

If we are to formulate expectations about how a direct subsidy will affect adoption, then having some idea about what the demand curve for broadband looks like is important.

As drawn, a subsidized price of \$0 (a monthly subsidy of \$50, as proposed) produces the same effect for all demand curves (adoption is complete). But these curves are merely illustrative, and the benefits of broadband may be negative for some homes (e.g., religious reasons, privacy concerns, and so forth). Targeting the subsidy to low-income households limits the impact. Also, there may be more to a subscription decision than just the price, such as computer ownership and maintenance, migration, lack of a stable household, and so forth). Still, a price of \$0 should have a large effect, but at very high cost.

Survey evidence can shed some light on the issue, even if it does not permit the estimation of the demand curve. The largest and most reliable survey evidence are the U.S. Census Bureau's Computer and Internet Use Supplements to the Current Population Survey ("CPS"). Though the survey questions have changed over time, these surveys ask non-adopters to provide reasons they do not use the Internet at home, with responses, among others, including (1) not interested; (2) too expensive; (3) do not have a

computer; and (4) not available. While multiple responses are permitted, these surveys also ask for the "main reason" for non-adoption (a single response). Also, the CPS asks non-adopters if they would use the Internet in the home if the price was lower, though the question unfortunately does not suggest how much lower.

Respondents who state they "don't need" or are "not interested" in Internet use at home suggest the value of the Internet (v_i) is low and possibly negative. Presumably, these consumers are relatively insensitive to a price reduction. A response that the service (and/or equipment) is "too expensive" points to price sensitivity. The larger the ratio of "don't need" responses to "too expensive" responses, the more likely the demand curve looks like D_1 rather than D_3 (and vice versa). The larger this ratio, the less effective a subsidy is at increasing adoption. A similar interpretation applies to the ratio of the share of non-adopters that say they *would not* subscribe at a lower price over the share that *would* subscribe at a lower price. Using summaries of the CPS data, I conduct such an analysis below.

As I have explained before, future surveys should ask directly how respondents would change behavior for *specific* price reductions.⁷ For instance, the survey might ask "if the price was \$10 lower" or "\$20 lower" would you subscribe to an Internet connection at home? Or, the direct question "would you subscribe at \$40 (or \$30, or \$20, and so forth)" allows researchers to trace out the demand curve. Responses to a "would you use the Internet at home if was free" provides good information about the lack of interest. We do not have that data today, however, so I will proceed with the survey evidence we do have.

Adoption Data

The National Telecommunications Information Administration's ("NTIA") Data Explorer provides descriptive statistics for the CPS surveys, though the micro-data is also available for all but the 2019 supplement, which is

P E R S P E C T I V E S

forthcoming.⁸ I focus on the question: *What is the MAIN reason that you don't have the Internet at home?* Data for years 2009 through 2019 are included in the analysis. There are eight surveys represented in the figure (2009, 2010, 2011, 2012, 2013, 2015, 2017, and 2019). Sample sizes for each supplement measure in the hundreds of thousands (though those not using the Internet at home are a small subset of these).

Since this analysis will look at the trends in responses over time, it is important to recognize that the CPS questions have changed. For instance, prior to 2015, "too expensive" was a response to the inquiry but beginning in 2015 the "too expensive" response was divided into "can't afford" and "not worth it" responses. The "too expensive" categorization in NTIA's Data Explorer sums these two responses. Also, surveys after 2015 include more responses to the "main reason" question in other ways; for example, the safety and privacy concerns were independent responses. These responses have low shares. Over time, these responses are not measuring necessarily the same thing. The responses (and the intent of the questions) are similar, but the caveat is worth noting.

Considering the low benefits available to persons who see no need for the Internet, and the cost of convincing them otherwise, universal adoption may be an unrealistic standard by which to judge successful broadband adoption policies.

A Look at the Data

The latest data from the CPS on Internet use are from the November-2019 supplement. Table 1 summarizes the responses for the *main reason* why the Internet is not used at home for the last three CPS. The most common response (by far)

is "Don't Need It, Not Interested," with "Too Expensive" being a distant second. The other responses are infrequent. It would not be unreasonable to include "Privacy or Security Concerns," and maybe even "Can Use It Somewhere Else," in a broader "relevance" category with "Don't Need It, Not Interested," but I do not do so, in part for reasons discussed below (see Table 2). Likewise, "Use It Elsewhere" may be sensibly grouped with "Too Expensive," since Internet use is presumably valuable but perhaps insufficient for the household to pay for a home connection.

Table 1. Main Reason (%), No Internet at Home

	2015	2017	2019
Don't Need/ Not Int.	55.2	57.9	60.0
Too Expensive	23.5	21.2	18.8
Use It Elsewhere	2.1	2.3	2.9
Not Available in Area	2.4	2.4	3.2
No Computer/Inadequate	7.3	4.3	2.9
Privacy/Security	1.4	1.7	2.0
Other	8.9	10.2	10.2

Table 1 points to a general insensitivity to price reductions, suggesting the demand curve for broadband looks more like D_1 than it does D_3 . Responses to the question "Would (you/your household) buy home Internet service if it were offered at a lower price?" sheds additional light on these data. Table 2 shows the response rate to this question for the most common responses to the "main reason" question in 2017 (the 2019 micro data is not yet available).

Table 2. Buy at a Lower Price?
Year 2017

	Yes
Buy Home Internet at a Lower Price?	26.1%
Don't Need It, Not Interested	10.5%
Too Expensive	52.7%
Use It Elsewhere	53.0%
No Computer/Inadequate	29.3%
Privacy/Security	28.6%

In all, only 26.1% of non-adopters said they would subscribe to the Internet at home if the price was lower. For the most part, non-adopters do not appear to be price sensitive. That said, this low figure is largely due to the “Don’t Need It” group (about 58% of the sample), with only about 10% of these respondents saying they would subscribe to the Internet at a lower price. These are not price-sensitive consumers. While far more price sensitive than the “Don’t Need It” group, only about half of the “Too Expensive” group said they would subscribe to the service at a lower price.⁹ The “Too Expensive” response, it appears, is not a strong indicator of price-sensitive consumers. The “Use It Elsewhere” group is about as price sensitive as the “Too Expensive” group. Other responses also exhibit some price sensitivity, though not as high as the “Too Expensive” group.

From both Tables 1 and 2, we see that the ratio of “Don’t Need It” to “Too Expensive” is high (about 2.7 in 2017), as is the ratio of “would not buy at a lower price” to “would buy at a lower price” (about 2.8 in 2017). As the Internet becomes more-and-more a part of everyday life, we might expect that these ratios would shrink over time. They do not. Figure 1 illustrates the trends in three responses, including the 90% confidence bands, for a decade of surveys.

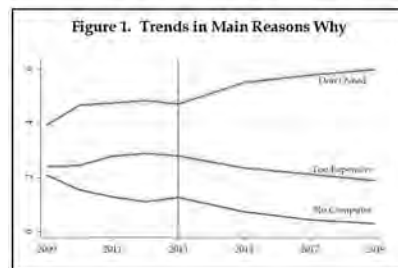


Figure 1 shows not only that a lack of interest is always more important than expense in determining the lack of Internet use in the home, but that the ratio of the two is rising over time,

with “Don’t Need It” rising and “Too Expensive” shrinking.¹⁰ The lack of a computing device is also declining as a reason for no Internet use at home.

Should We Rely on the CPS?

The CPS, with its very large samples, provides the solid evidence on the reasons for non-adoption. Some advocates and researchers discourage reliance on the data, since “relevance” may have different meanings to different people.¹¹ Digging deeper into non-adoption is to be encouraged, but adding to the analysis the “buy at a lower price” question clarifies the meaning. Also, my review of the literature cited to lessen reliance (or even to discredit) the CPS is supportive of the Census Bureau’s surveys.

[A] lack of interest is always more important than expense in determining the lack of Internet use in the home....

Take, for instance, a study by Reisdorf, Hampton, Fernandez, and Dutton (2018).¹² The study gathered survey responses (in 2017) from 525 persons living within (a few blocks of) Detroit’s inner city; the survey response rate was 12.1%. The sample was not representative of the U.S. population (perhaps intentionally); for instance, 81% of respondents were female and 88% racially identified as Black. About 78% of respondents had Internet in the home, which is comparable to national figures in that year.

Only 116 respondents did not have Internet in the home. The most common reason given for not having Internet in the home was “Not Interested” (31.9%), with “Too Expensive” being a close second (30.2%). Note that the margin of error on these estimates is in the ballpark of $\pm 9\%$ (given the small sample), so the responses are statistically equal.¹³

P E R S P E C T I V E S

It is unsurprising, to me at least, that the “Not Interested” rate from this survey is different (and lower) than that in the CPS. Small, unrepresentative samples do not offer reliable estimates of the population mean (the intent of the CPS). While I cannot entirely match up the Detroit survey’s properties in the CPS, the range of the empirical distribution of the mean of “Don’t Need” for 116 observations drawn from cities of similar size to Detroit is 35% to 65% (and the Detroit survey’s 90% confidence interval is 23% to 41%). Respecting the differences in method and purpose, the Detroit survey’s results are not wholly unlike the data in the CPS.

A lower price, while helpful, may not shrink materially the Digital Divide. Direct subsidies may be reasonable public policy, but sober expectations as to their influence on non-adoption is warranted.

Implications for Policy

These data are informative for policy formulation. While relevance may trump expense, price is important to a lot of Americans. Though a monthly subsidy for service does not target the primary reason for non-adoption, it targets a major one. According to the CPS, less than 20% of respondents say that the expense of broadband deters Internet use (about half responsive to a price reduction), and about 30% of non-adopters say a lower price might induce subscription. This is a sizable share, even if only one-third of that assigned to “relevance.”

That said, these figures may be an overstatement of the potential target audience of a subsidy. Presumably, broadband subsidies will target low-income households. About 30% of American households qualify for Lifeline, though only about 25% of these participate in the program.¹⁴ With about 30% of non-adopters saying a lower

price would induce subscription, then a low-income subsidy targets only about 10% of price-sensitive non-adopters. A lower price, while helpful, may not shrink materially the Digital Divide. Direct subsidies may be reasonable public policy, but sober expectations as to their influence on non-adoption are warranted.

The bigger question, it seems to me, is what policies are available to address the segment of non-users who say they “Don’t Need, or are Not Interested” in the Internet? Some analysts and policymakers believe that demand-side programs teaching digital skills will encourage home adoption by overcoming such perceptions. They may do so, but empirical evidence finds that such programs implemented as part of the Broadband Technology Opportunity Program (“BTOP”) did not increase home broadband adoption on a measurable scale.¹⁵ Considering the low benefits available to persons who see no need for the Internet, and the cost of convincing them otherwise, universal adoption may be an unrealistic standard by which to judge successful broadband adoption policies.

Conclusion

Throwing money at the Digital Divide, even billions, will not bridge it completely. Some Americans will remain offline, despite all efforts to the contrary, simply because they do not wish to be online. Many non-adopters will respond to broadband subsidies that tackle the expense of service subscriptions, but many more will not. Direct subsidy is one of several policy options, but sober expectations as to its effectiveness are warranted. A larger subsidy has a larger effect, but commensurately a larger budget.

NOTES:

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¹ House Democrats Release Text of H.R. 2, A Transformational Infrastructure Bill to Create Jobs and Rebuild America, Press Release (Jun 22, 2020) (available at: <https://energycommerce.house.gov/newsroom/press-releases/house-democrats-release-text-of-hr-2-a-transformational-infrastructure-bill/>) ("Delivers affordable high-speed broadband Internet access to all parts of the country by investing \$100 billion to promote competition for broadband internet infrastructure in unserved and underserved communities, prioritizing those with persistent poverty.").

² The NTIA's Data Explorer reports that 85.7% of Americans use fixed broadband Internet service in the home (<https://www.ntia.doc.gov/data/digital-nation-data-explorer#sel=wiredHighSpeedAtHome&disp=map>). There are approximately 128.58 million households in the U.S., and I have assumed the average person count is equal between homes with and without broadband service.

³ See, e.g., *Demand for Broadband in Rural Areas: Implications for Universal Access*, Congressional Research Service, CRS Report R46108 (December 9, 2019) (available at: <https://fas.org/srgp/crs/misc/R46108.pdf>) ("rural households' broadband adoption rate lagged that of urban households by 12-13 percentage points"). This difference is confirmed using the 2017 CPS Survey (author's calculations).

⁴ See, e.g., *Broadband Stimulus and Related Initiatives in the HEROES Act*, JDSUPRA (Akin Gump) (May 15, 2020) (available at: <https://www.jdsupra.com/legalnews/broadband-stimulus-and-related-95540>).

⁵ G.S. Ford, *A Fresh Look at the Lifeline Program*, PHOENIX CENTER POLICY PAPER No. 55 (July 2019) (available at: <https://www.phoenix-center.org/pcpp/PCPP55Final.pdf>).

⁶ G.L. Rosston and S. Wallsten, *Increasing Low-Income Broadband Adoption through Private Incentives*, Working Paper (August 2, 2019) (available at: <https://ssrn.com/abstract=3431346>).

⁷ G.S. Ford, "Relevance" and "Price" as Determinants of Internet Non-Adoption: A Review of the Evidence, PHOENIX CENTER POLICY BULLETIN No. 48 (April 2020) (available at: <https://www.phoenix-center.org/PolicyBulletin/PCPB48Final.pdf>).

⁸ The data are available at: <https://www.ntia.doc.gov/page/download-digital-nation-datasets>. The data are summarized at: <https://www.ntia.doc.gov/data/digital-nation-data-explorer#sel=noInternetAtHome&disp=map>, which is the source of data for this study. The summary data includes the November-2019 results, but the micro-data has yet to be released.

⁹ "Relevance" and "Price", *supra* n. 7.

¹⁰ These changes in responses are not mere random variation across surveys. A test for a statistically significant change in the response rates is based on the following formula: $|y_t - y_{t-k}| / \sqrt{m_t^2 + m_{t-k}^2} > 1$, where y_t is the response rate in year t and m_t is the margin of error on that response rate (the latter of which embeds the t-statistic for the 90% confidence level) (see <https://www.census.gov/programs-surveys/saipe/guidance/comparisons.html>).

¹¹ Also see, e.g., C. Rhinesmith, A. Quan-Haase and M. Haight, *The Complexity of 'Relevance' as a Barrier to Broadband Adoption*, Benton Institute for Broadband & Society (January 6, 2016) (available at: <https://www.benton.org/blog/complexity-relevance-barrier-broadband-adoption>) (showing survey data from Canada in 2012 showing "relevance" as the primary cause of non-adoption). An op-ed by Blair Levin and Larry Downes in the WASHINGTON POST pointing to the CPS generated numerous responses. B. Levin and L. Downes, *Cities, Not Rural Areas, are the Real Internet Deserts*, WASHINGTON POST (September 13, 2019). Responses include thoughtful commentary (see, e.g., B. Reisdorf and C. Rhinesmith, *Too Uneducated to Understand the Importance of Home Internet?*, Benton Institute for Broadband & Society (September 18, 2019) (available at: <https://www.benton.org/blog/too-uneducated-understand-importance-home-internet>)) and hysterics (see, e.g., *The Truth About the Digital Divide*, Free Press (September 25, 2019) (available at: <https://www.freepress.net/our-response/expert-analysis/insights-opinions/truth-about-digital-divide>)).

¹² B.C. Reisdorf, K. Hampton, L. Fernandez and W.H. Dutton, *Broadband to the Neighborhood: Digital Divides in Detroit*, Quello Center, Michigan State University (January 16, 2018) (available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3103457).

NOTES CONTINUED:

¹³ <https://goodcalculators.com/margin-of-error-calculator>.

¹⁴ Data available at: <https://www.usac.org/lifeline/learn/program-data>.

¹⁵ T.R. Beard, G.S. Ford, and M. Stern, *Bridging the Digital Divide: What Has Not Worked But What Just Might*, PHOENIX CENTER POLICY PAPER No. 56 (June 2020) (available at: <https://www.phoenix-center.org/pcpp/PCPP56Final.pdf>); J.A. Hauge and J.E. Prieger, *Evaluating the Impact of the American Recovery and Reinvestment Act's BTOP on Broadband Adoption*, 47 APPLIED ECONOMICS 1-27 (2015) (draft available at: <https://ssrn.com/abstract=2591771>); J. Manlove and B. Whitacre, *An Evaluation of the Connected Nation Broadband Adoption Program*, 43 TELECOMMUNICATIONS POLICY 101809 (2019) (available at: <https://www.sciencedirect.com/science/article/abs/pii/S0308596118304269>); An earlier version of the paper is J. Manlove, *An Evaluation of the Connected Nation Broadband Adoption Program*, Working Paper (March 15, 2018) (available at: <https://ssrn.com/abstract=3141063> or <http://dx.doi.org/10.2139/ssrn.3141063>).

P E R S P E C T I V E S

PHOENIX CENTER FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES

Are Broadband Prices Declining? A Look at the FCC's Price Survey Data

George S. Ford, PhD

October 26, 2020

Introduction

In a recent study released by USTelecom entitled *2020 Broadband Pricing Index*, Arthur Menko uses data from the Federal Communications Commission's *Urban Rate Survey* to compare average broadband prices between 2015 and 2020 (hereinafter the *Menko BPI Study*).¹ Menko's comparison is based on a sample of the largest broadband providers' most popular broadband speed tiers and on these providers' fastest speed tiers in the two years. The *Menko BPI Study* reports major declines in broadband prices: in real (2015) dollars, broadband prices for the most popular speed tiers fell by 28.1% and for the fastest speed tiers by 43.9%. These are, obviously, sizable declines.

Broadband speeds rise over time, which leads to questions about how to compare prices from different periods. The *Menko BPI Study* compares prices for the most popular broadband services in each period. While the comparison involves broadband services of *unequal* quality, the *Menko BPI Study* still finds sizable price reductions.² While this comparison is useful for comparing prices of the services that were actually available to—and widely consumed by—subscribers in those years, in this PERSPECTIVE I follow standard methods for constructing a price index and use the FCC's *Urban Rate Survey* data to compare prices over time for services of *equal* quality.³ Hedonic methods are used to construct a broadband price index for years 2015 through 2020.

As in the *Menko BPI Study*, I find large price declines across a wide range of broadband speeds. Even though I use different methods and more of the survey data, my results are quite comparable to those reported in *Menko BPI Study* for the most popularly purchased speed tiers for the same time periods (BPI-Consumer Choice).⁴ In all, the FCC's price survey data reveal large, statistically-significant price declines over time for broadband services, holding quality constant.

*I follow standard methods for constructing a price index and use the FCC's Urban Rate Survey data to compare prices over time for services of equal quality. *** In all, the FCC's price survey data reveal large, statistically-significant price declines over time for broadband services, holding quality constant.*

Methodology

Each year we observe changes in the download speeds of broadband services. Let the speed at time t be S_t and the average price for that speed be P_t . For each period we have (P_t, S_t) , where P_t correlates positively to S_t , or $\Delta P_t / \Delta S_t > 0$. Typically, we expect S_t to increase over time. How do we compare average prices when speeds differ over time and higher speeds sell for higher

P E R S P E C T I V E S

prices? Two polar comparisons are commonly used in economic literature:

$$\Delta P(S_{i,t}) = P_i(S_{i,t}) - P_{i,t}(S_{i,t}), \quad (1)$$

and,

$$\Delta P(S_i) = P_i(S_i) - P_{i,t}(S_i), \quad (2)$$

Say, for instance, that we wish to compare prices in 2015 to those in 2020. Assume the average speed in 2015 is 50 Mbps and in 2020 is 200 Mbps. Equation (1) measures the difference in 2020 prices versus 2015 prices for a 50 Mbps service, while Equation (2) measures this price difference for a 200 Mbps service. Statistical tests may be conducted to test whether $\Delta P = 0$ under each of these speed assumptions. Borrowing from the terminology of price index construction, Equation (1) is a Laspeyres-type price index and Equation (2) is a Paasche-type index.

The FCC's survey collects a sample of broadband plans covering a range of speeds. An average of download speeds in the FCC's survey do not, therefore, reflect the average speeds used by customers. Instead, I measure average download speeds in each year with means computed from large samples of speed tests. Ookla conducts millions of speed tests in the U.S. annually, so its data is a useful proxy for average download speeds.³

Table 1. Average Download Speed
(Ookla)

Year	Avg. Download Mbps
2015	38.71
2016	54.97
2017	64.17
2018	96.25
2019	120.00
2020	156.61

Average download speeds by year are summarized in Table 1. As expected, download speeds rise annually. In 2015, the average download speed was nearly 39 Mbps, rising to near 100 Mbps by 2018. In 2020, the final year of the sample, speeds just exceeded 150 Mbps.

Estimating the Prices

Following the standard procedure for hedonic quality adjustments for constructing a price index, average prices for various speeds are calculated using regression analysis:

$$P_{it} = f(S_{it}, S_{it}^2, D_t, X_i) + \varepsilon_{it}, \quad (3)$$

where S_{it} is speed at time t for service offering i , X_i is a technology fixed effect, D_t is a yearly dummy variable, and ε_{it} is the econometric disturbance term.⁶ The speed measures are interacted with the time fixed effects creating a unique intercept and slope (for speed and speed squared) for each year. Predictions from Equation (3) may be obtained for any chosen year-speed pair.

According to the Fisher-ideal index, in 2020 average price was 36% less than in 2015.

For the Laspeyres-type price index (as in Equation 1), predictions are based on the 2015 average speed values in any year-to-year comparison. Alternately, for the Paasche-type index (as in Equation 2), predictions from Equation (3) are based on the 2020 average speed levels. The geometric mean of the Laspeyres and Paasche index is the Fisher-ideal price index. This index measures price changes that occur over the 2015-2020 period, while accounting for the changing nature of broadband quality over this period.

Data

Data are obtained from the FCC's *Urban Rate Survey* for years 2015 through 2020.⁷ All prices are converted to 2020 dollars using the Consumer Price Index.⁸ As in the *Menko BPI Study*, I limit the sample to the fifteen largest BSPs.⁹ A few restrictions are placed on the sample. First, with only two observations for fixed wireless service,

PERSPECTIVES

I exclude these from the sample. Second, the “other” category for broadband delivery technology appears only in years 2015 and 2016 (244 observations total). These are excluded as well. Third, very few observations have speeds above 1 Gbps, and these are excluded.¹⁰ The final sample includes cable, DSL, and FTTH delivery technologies, which are the primary broadband modalities. Annual samples are large and range from 880 observations (2016) to 2,605 observations (2019). There are 8,657 observations in the final sample. Sample details are provided in Table 2.¹¹

Table 2. Sample Sizes

Year	Total	Cable	DSL	FTTH
2015	1,140	491	465	184
2016	880	514	247	119
2017	923	400	425	98
2018	1,380	903	420	257
2019	2,605	1,135	966	504
2020	1,529	785	459	285

Along with the way I compare prices over time, my treatment of the data also differs somewhat from the *Menko BPI Study*. First, the *Menko BPI Study* for its BPI-Consumer Choice index uses only the most popular speed plans offered by each provider when computing prices. I use all the data and account for speed differences using regression analysis. Second, I use average speed data from Ookla, where the *Menko BPI Study* determines speeds for the most popular plans based on FCC Form 477 reports. Third, the *Menko BPI Study* converts nominal prices to real prices in terms of 2015 dollars, whereas I convert to 2020 dollars. Fourth, the *Menko BPI Study* uses national provider subscriber shares as weights, while sampling weights are not used in my analysis since the speed data are obtained outside the FCC survey and regression analysis is used.

Based on these differences in index construction, statistical methods, and data handling, the price levels and price changes computed here may differ than those reported in the *Menko BPI Study*. That I find comparable results despite such

differences, however, lends credence to the findings of both studies.

Year-Pair Price Comparisons

To begin, I compare mean prices using Equation (1), where prices are constructed to reflect the average speed level in 2015 ($S_{1,t}$). These mean prices are computed using estimates from Equation (3) and the results are summarized in Table 3.¹²

Table 3. Results, Equation (1)
(Base year = 2015)

Year	$S_{0,t}$	P_{t-1}	P_t	ΔP	% ΔP
2015	38.71	71.48	71.48	...	...
2016	38.71	71.48	67.72	-3.76*	-5.26%
2017	38.71	71.48	69.28	-2.20*	-3.08%
2018	38.71	71.48	61.86	-9.62*	-13.46%
2019	38.71	71.48	59.92	-11.57*	-16.18%
2020	38.71	71.48	54.17	-17.32*	-24.23%

* Statistically Significant 5% level.

In all years, the price is less in that year than it was in 2015 for the same level of service. In every year but 2017, the average price for a broadband service with a speed of 38.71 Mbps is declining (i.e., quality constant). And, in all cases, the price difference is statistically different from zero at the 5% level. The price change between 2015 and 2020 for a 38.7 Mbps connection is -24.23%.

[T]hese data show that the price for both low- and high-speed broadband are falling over time, but the price for high-speed broadband is falling faster.

As an alternative comparison, I use Equation (1) to compute the average price of broadband service in period t at the average speed in period $t - 1$. These computations represent annual price changes holding quality constant from year-to-year rather than holding speed constant at its 2015 level. Mean prices are summarized in Table 4. Again, the average price declines each

PERSPECTIVES

year (though the small change between 2016 and 2017 is not statistically different from zero). Between 2019 and 2020, the average broadband price fell by \$5.38 or 7.1%. The largest observed change in between 2017 and 2018 at -14.53%. On average, real prices fall by 7.4% annually.

Table 4. Results, Equation (1)
(Base year = $t-1$)

Year	S_{t-1}	P_{t-1}	P_t	ΔP	% ΔP
2015	...	...	...	...	...
2016	38.70	71.48	67.72	-3.76*	-5.26%
2017	55.00	77.35	77.27	-0.08	-0.11%
2018	64.17	81.68	69.81	-11.87*	-14.53%
2019	96.25	79.39	71.42	-7.97*	-10.04%
2020	120.0	75.88	70.5	-5.38*	-7.09%

* Statistically Significant 5% level.

Table 5 summarizes the results from Equation (2), where prices are computed at the 2020 average speed ($S_t = 156.61$ Mbps). Again, for every year in the sample, the average price in 2020 is below the average prices in earlier years for the same quality of service. For the 156.6 Mbps service, the price in 2020 is \$66.26 less than in 2015—a decrease of about 46% (nearly half). And, between 2019 and 2020, there is a statistically-significant price decline of \$5.22 (or 6.3%).¹³ As before, all the price differences are statistically different from zero at the 5% level.

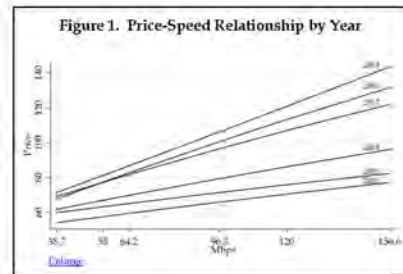
Table 5. Results, Equation (2)
(Base year = 2020)

Year	S_t	P_{t-1}	P_t	ΔP	% ΔP
2015	156.61	143.44	77.18	-66.26*	-46.19%
2016	156.61	131.52	77.18	-54.34*	-41.32%
2017	156.61	121.94	77.18	-44.76*	-36.71%
2018	156.61	96.09	77.18	-18.91*	-19.68%
2019	156.61	82.40	77.18	-5.22*	-6.34%
2020	156.61	77.18	77.18	...	...

* Statistically Significant 5% level.

Average prices across download speeds and years as predicted by Equation (3) are illustrated in Figure 1. Predictions are made at all analyzed speeds for each year in the sample. The figure shows that the price-speed relationship is generally getting flatter over time, so these data show that the price for both low- and high-speed broadband are falling over time, but the price for high-speed broadband is falling faster. And, the

figure shows that prices at each speed level are falling over time.



While my approach differs from the *Menko BPI Study* in several ways, the broad conclusions are the same: the price of broadband services has declined over time. My analysis shows that average prices for broadband services, with rare exceptions at lower speeds, are falling annually, and these changes are statistically-significant and not mere reflections of sampling variability.

My analysis shows that average prices for broadband services, with rare exceptions at lower speeds, are falling annually, and these changes are statistically-significant and not mere reflections of sampling variability.

Broadband Price Index

The data and procedures described here may be used to construct a Fisher-ideal broadband price index F_t , which is a geometric mean of the Laspeyres and Paasche indexes. To account for changes in average quality, as measured in download speeds, the hedonic method is used. This procedure employs exponentiated predictions from Equation (3) to account for product differences over time. Nominal prices

PERSPECTIVES

are used for consistency with the standard price index methodology.

Table 6 summarizes the price indexes.¹⁴ Base speeds are 38.71 Mbps for the Laspeyres-type and 156.61 Mbps for the Paasche-type index. The percentage change in the price index between two periods may be computed as $(F_t / F_{t-k} - 1)$.

Year	Laspeyres Index	Paasche Index	Fisher Index
2015	100.00	100.00	100.00
2016	94.74	91.69	93.20
2017	96.92	85.01	90.77
2018	86.54	66.99	76.14
2019	83.82	57.45	69.39
2020	75.77	53.81	63.85

All the price indexes constructed here are falling over time revealing large and consistent price reductions when holding quality constant. According to the Fisher-ideal index, in 2020 average price was 36% less than in 2015. Between 2019 and 2020, the Fisher price index falls by 8%. The largest change in the Fisher index is between 2017 and 2018 where the index falls by 16%. On average, prices fall by about 8.5% annually. Based on the FCC's price survey data, it appears that broadband prices—quality held constant—are falling each year by a sizable amount.

On average, prices fall by about 8.5% annually. Based on the FCC's price survey data, it appears that broadband prices—quality held constant—are falling each year by a sizable amount.

Conclusion

In recent years, the FCC has collected a sample of broadband prices and reported the data in its *Urban Rate Survey*. The *Menko BPI Study* used these data to compare broadband prices between 2015 and 2020, reporting large price decreases in

real prices between 28.1% and for the fastest speed tiers by 43.9%.

In this PERSPECTIVE, I construct average broadband prices and a broadband price index over time using hedonic methods so that quality is held constant, where quality is measured by download speed. My findings are comparable to the *Menko BPI Study* even though the methods materially differ. Between 2015 and 2020, for example, I find that the average decline in prices is about 36% when using a Fisher-ideal price index. Broadband prices across a wide range of speeds have fallen over time, and the price reductions are, in most cases, sizable.

NOTES:

* Dr. George S. Ford is the Chief Economist of the Phoenix Center for Advanced Legal and Economic Public Policy Studies. The views expressed in this PERSPECTIVE do not represent the views of the Phoenix Center or its staff. Dr. Ford may be contacted at ford@phoenix-center.org.

¹ A. Menko, *2020 Broadband Pricing Index*, Study Commissioned by USTelecom (2020) (available at: <https://www.ustelecom.org/wp-content/uploads/2020/09/USTelecom-2020-Broadband-Pricing-Index.pdf>).

² In additional analysis, the *Menko Study* uses price-per-megabit as a price measure, but for several reasons price-per-megabit is a deeply flawed measure of price (primarily, consumers do not pay for broadband by the megabit of download speed). On the problems with price-per-megabit, see G. S. Ford, *The Open Technology Institute's Cost of Connectivity 2020 Report: A Critical Review*, PHOENIX CENTER PERSPECTIVE No. 20-06 (July 20, 2020) at pp. 7-8 (available at: <https://www.phoenix-center.org/perspectives/Perspective20-06Final.pdf>).

³ On selection bias in price studies, see e.g., G.S. Ford, *A Review of the Berkman Center's Price Survey of Municipal Broadband Markets*, PHOENIX CENTER PERSPECTIVE No. 18-01 (January 24, 2018) (available at: <https://www.phoenix-center.org/perspectives/Perspective18-01Final.pdf>).

⁴ Because my study employs data from all of the speed tiers reported in the FCC *Urban Rate Survey*, these results should be compared against those developed in the *Menko Study* for the most popular speed tier (BPI-Consumer Choice) and not those developed for just the fastest speed tier (BPI-Speed). Note also that this study examines the differences in prices that are available to subscribers, while the *Menko Study* examines the differences in the price paid for the most popularly-purchased broadband speed. To the extent that broadband customers are slower to adopt faster services than providers are in rolling out the availability of such services, it is completely understandable why the price reductions that I find are slightly larger than those found in the *Menko Study*.

⁵ Information on Ookla's Speedtest data is available at: www.speedtest.net.

⁶ Specification analysis indicated that a linear specification of price quadratic in speed best fit the data. A log-log model provides for similar results.

⁷ Data available at: <https://www.fcc.gov/economics-analytics/industry-analysis-division/urban-rate-survey-data-resources>.

⁸ January data is used: <https://fred.stlouisfed.org/series/CUUS0000SA0>.

⁹ Firms included are: Charter, Altice (Cablevision and Suddenlink), Comcast, Mediacom, WOW, Cable One and Cox, AT&T, Verizon, CenturyLink, Frontier, Windstream, Consolidated and TDS.

¹⁰ For about 8,600 observations, only 2 observations had speeds exceeding 1 Gbps. The results are little affected by the exclusion, but a 2 Gbps circuit is not typically considered a consumer product.

¹¹ By using speeds obtained outside the survey data and relying on regression analysis, I do not use the weights provided in the FCC survey. Because the FCC developed its *Urban Rate Survey* data to be able to verify that urban prices are comparable to rural ones, the weightings employed by the FCC are quite complex. Further, they vary somewhat from year to year to keep up with evolving service qualities. (See the 2014-2020 Broadband Methodology documents presented on <https://www.fcc.gov/economics-analytics/industry-analysis-division/urban-rate-survey-data-resources>).

¹² Equation (3) is estimated using 8,657 observations, has an R^2 of 0.55, and an F-statistic of 805.8 (significant at better than the 1% level).

¹³ In nominal prices, the price difference between 2019 and 2020 is \$2.8, so inflation accounts for less than 20% of the price difference between those two years.

¹⁴ The Laspeyres price index is $100 \cdot [P_t(S_{t-1}) / P_{t-1}(S_{t-1})]$ and the Paasche price index is $100 \cdot [P_t(S_t) / P_{t-1}(S_t)]$.



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May 6, 2021

The Honorable Michael Doyle, Chairman
Committee on Energy & Commerce
Subcommittee on Communications and Technology
U.S. House of Representatives
270 Cannon House Office Building
Washington, D.C. 20515

The Honorable Robert E. Latta, Ranking Member
Committee on Energy & Commerce
Subcommittee on Communications and Technology
U.S. House of Representatives
2467 Rayburn House Office Building
Washington, D.C. 20515

RE: Hearing on "Broadband Equity: Addressing Disparities in Access and Affordability"

Dear Chairman Doyle and Ranking Member Latta,

R Street commends the Committee on its continuing efforts to promote broadband availability and adoption, as well as this hearing to explore potential disparities among Americans.¹ Broadband has never been more important, and it is critical that we continue to explore different options for bridging the digital divide. However, many proposals currently on the table can be counterproductive or waste valuable taxpayer dollars. As the committee considers the different options before it, R Street submits two recent publications to help provide context to the current regulatory environment, as well as potential solutions that will help spur both deployment and adoption of broadband services.

On the broadband deployment side, an R Street blog post details the potential hazards with the Biden infrastructure proposals.² Most worrisome, the plan appears to call for a favoritism toward municipally run networks, despite significant potential problems with these networks.³ Further, the plan also calls for future proofing broadband networks, though this essentially means fiber networks with symmetrical 100 megabits per second (Mbps) upload and download speeds. These proposals would harm competition and innovation, leading to lower private investment in broadband infrastructure. Instead, Congress should continue the streamlining of local deployment processes, as local barriers such as access to public rights-of-way and replacing utility poles can often serve as a significant barrier to deployment.⁴



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On the broadband adoption side, the Biden plan also alluded to potential price controls, with general sentiment being that broadband prices are too high. However, data suggests prices are lower and speeds are higher than ever before.⁵ To the extent that low-income consumers need additional support to afford broadband connectivity, Congress should instead look to potential reforms to the Lifeline program that would deliver the benefit directly to the consumers, as well as update the funding mechanism to bring stability to the program. R Street's policy short on the subject can help provide context and analysis on some of these proposals.⁶

Broadband is critical for Americans, and we commend the Committee for continuing its work to help connect people across the country. Please see attached for the publications mentioned above.

Sincerely,

Jeffrey Westling, Technology and Innovation Policy Resident Fellow
R Street Institute

CC:

Hon. Frank Pallone, Chairman
House Energy & Commerce Committee
U.S. House of Representatives
2125 Rayburn House Office Building
Washington, D.C. 20515

Hon. Cathy McMorris Rodgers
House Energy & Commerce Committee
U.S. House of Representatives
1035 Longworth House Office Building
Washington, D.C. 20515

¹ "Hearing on 'Broadband Equity: Addressing Disparities in Access and Affordability'" Before the House Subcommittee on Communications and Technology of the Committee on Energy & Commerce, 117th Cong. May 6, 2021. <https://energycommerce.house.gov/committee-activity/hearings/hearing-on-broadband-equity-addressing-disparities-in-access-and->

² Jeffrey Westling, "Biden infrastructure package ignores practical reforms to spur broadband deployment," *R Street Blog Post*, April 14, 2021. <https://www.rstreet.org/2021/04/14/biden-infrastructure-package-ignores-practical-reforms-to-spur-broadband-deployment/>.

³ Briefing Room, "FACT SHEET: The American Jobs Plan," The White House, March 31, 2021. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/>.

⁴ Jeffrey Westling, "2020 Broadband Scorecard Report," *R Street Policy Study*, Feb. 10, 2021. <https://www.rstreet.org/2021/02/10/2020-broadband-scorecard-report/>.

⁵ *2020 Broadband Pricing Index Report*, United States Telecom Association, 2020. <https://www.ustelecom.org/research/2020-broadband-pricing-index-report/>.



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⁶ Jeffrey Westling, "Updating the Lifeline Program," *R Street Policy Study*, April 22, 2021.
<https://www.rstreet.org/2021/04/22/updated-the-lifeline-program/>.

Biden infrastructure package ignores practical reforms to spur broadband deployment

By Jeffrey Westling

A reliable broadband connection has never been more important as Americans try to stay connected during these isolating times. Understanding this, the Biden administration announced plans to facilitate broadband deployment and improve access to high-speed networks. While some communities, especially those in rural, hard-to-reach locations, will need financial support to develop a business case for deployment, regulators must carefully consider the structure of any subsidy.

Under the [American Jobs Plan](#), the Biden administration would allocate \$100 billion to build high-speed broadband. The proposal would distribute funding with a preference for municipal broadband initiatives and the construction of “future proof” infrastructure. It also seeks to reduce the cost of broadband internet to encourage adoption, though the means for cost mitigation remain unclear.

Unfortunately, this plan quickly becomes counterproductive. Municipal broadband projects often ignore the key challenge: the [equilibrium number of firms](#). By adding an additional competitor that can cross-subsidize broadband provisions, municipal networks often disrupt the market and freeze private investment. Municipal broadband might make sense in communities that truly lack a business case for the deployment of private networks, but the plan would also make these communities more difficult to identify by distorting the definition of served.

“Future proof” networks has recently meant [symmetrical speed](#) and [fiber](#) networks. For example, some have called for a definition of broadband to mean speeds of 100 megabits per second (Mbps) both down and up, despite usage [data](#) highlighting that downstream traffic significantly outweighs that of upstream. The plan would essentially turn large portions of America into unserved areas, as most high-speed networks lack 100 Mbps upload speed. Worse, by focusing on giving every American home a fiber connection, the bill would prevent innovative new services from breaking into the market, regardless of whether they would be better suited for a particular deployment.

But there are steps regulators can take to spur broadband deployment.

Physical infrastructure constitutes only a portion of broadband deployment costs, much of which comes from things like the [application and permitting process](#). While it is important for local governments to maintain rights-of-ways oversight and infrastructure installation, these processes often add significant costs to deployment. The Federal Communications Commission (FCC) has done significant work [streamlining](#) the process, but mostly for small 5G wireless facilities; broadband providers still face significant costs at state and local levels.

Unfortunately, the permitting process is only a portion of the issue. In a recent New York expansion, Charter Communications found that pole [replacement costs](#) accounted for about 25 percent of total network construction costs. These poles are owned primarily by electric utilities, and often must be upgraded to ensure that they can accommodate additional attachments while still complying with local

regulations. Despite the fact that the pole owner receives the benefits from the replacement, the cost usually falls on the broadband provider.

The FCC addressed this issue, requiring that utilities share the cost of pole replacement in rural areas when attachments are not the sole reason for the upgrade. While helpful, the Commission's jurisdiction only extends to investor-owned utilities. For many municipal and co-op- owned poles, broadband providers still face significant replacement costs. Worse, municipal and electric co-ops often charge significantly more than the regulated rates from the Commission for access to this vital infrastructure. If Congress does prioritize municipal broadband projects, it may mean private companies will face exorbitant costs to access the poles, functionally excluding them from the market.

Instead of subsidizing municipally run competitors who can access public rights-of-way and limit private deployment, Congress and state governments should focus on eliminating entry barriers: they should streamline the deployment process and extend the FCC replacement cost- sharing regime to all poles, especially those in rural areas where replacements often serve as a barrier to deployment. This will reduce the cost of deployment, maximizing the value of each subsidy dollar spent.

Broadband has never been more important for Americans across the country, but we must approach the problem thoughtfully to ensure we actually make broadband available to the entire country.



R STREET SHORTS NO. 102

April 2021

UPDATING THE LIFELINE PROGRAM

By Jeffrey Westling

INTRODUCTION

Across the country, Americans rely on broadband connectivity to work, learn and stay connected with friends and family. Unfortunately, many still lack reliable broadband connectivity.¹ Accordingly, the American Jobs Plan President Biden revealed last month allocated \$100 billion to subsidize broadband deployment.² For many communities—especially rural areas with limited potential revenue—a direct subsidy may be the best chance they have of getting connected. But, while Biden's plan works toward greater deployment (and in spite of its potential pitfalls), it does not directly address the corresponding issue of broadband adoption, especially in areas with existing options for consumers.³

While there are many factors that contribute to the relatively low adoption rates of broadband service, price remains a primary challenge for those with lower incomes. Some internet service providers have made attempts to offer more budget friendly pricing plans, however, such efforts only scratch the surface of a deeper issue.⁴ Similarly, pandemic related responses are only temporary fixes that leave larger underlying issues looming ahead. In light of this, one pos-

sible solution may be to update the Federal Communications Commission's (FCC) Lifeline program.⁵

The Lifeline program originally provided financial assistance for landline telephony, as voice service became essential to everyday life.⁶ Since then, broadband has quickly overtaken telephony as a pseudo-essential, and while it is not necessarily required for all, society continues every day to go more virtual.⁷ Accordingly, the FCC has expanded Lifeline to include broadband, but many of the processes remain outdated, unworkable and subject to exploitation by bad actors.⁸ For this reason, industry leaders have recently begun calling for drastic reforms to the program.⁹ This policy short therefore analyzes the proposed changes and the possible impact these reforms would have on broadband adoption, as compared to the existing Lifeline subsidy.

UPDATING THE FUNDING MECHANISM

Currently, Lifeline funding comes from a surcharge on existing subscribers, but only from Title II telecommunications services (think: traditional voice telephony).¹⁰ While the FCC extended this to Voice over Internet Protocol (VoIP) services, a surcharge cannot be applied to broadband service.¹¹ However, broadband subscriptions have drastically increased, and so too have universal service programs. Indeed, since 2002, the contribution factor has increased 25 percent.¹² In practice, this means that those customers who subscribe to voice telephony service must pay an almost 32 percent tax to help support the universal service programs.¹³ This will only grow more problematic as users continue to migrate to stand-alone broadband service. Any reforms to low-income assistance must first address this growing funding problem, especially if proposals seek to increase the total support provided.

Expansion of Contribution Factor

Congress could allow the FCC to expand the contribution factor. This approach would ultimately leave a similar system in place as currently exists, meaning it would be a relatively simple change legislatively and administratively. By increasing the types of services that contribute to the Universal Service Fund, the contribution factor on existing ratepayers will go down. However, with this approach, the adoption rate of broadband services may not change, or may even go down. This is because, for those who are struggling to maintain connectivity, an additional surcharge on broadband service could make their existing plan unaffordable or simply not worth the costs. And while it's true that some evidence suggests an additional surcharge may not drastically affect adoption rates, the approach will nevertheless require a determination of what services should contribute to the Universal Service Program.¹⁴ Depending on how such an expansion is

incorporated, some services that benefit from universal service support may not end up supporting the program.

Direct Appropriation

As an alternative, providers propose a new benefit program, either built on Lifeline or in tandem to it, which would be funded through direct appropriations from Congress. Under this approach, rather than adding additional charges to existing broadband subscribers, the benefit program would come directly from Congress. This provides significant benefits, as it could better stabilize the program and better promote broadband adoption than the existing Lifeline program.

In terms of stabilization, ratepayers would not see their monthly broadband bill continue to increase as the contribution factor rises over time. This will allow both families and the Universal Service Administrative Company (USAC) to better prepare for the future. However, unless clearly written into law, Congressional funding could sway with the political winds. If reforms to low-income support do rely on appropriations, it will be important to explore avenues to add certainty into the process.

Perhaps more importantly, a direct appropriation would better allocate the costs among taxpayers in a progressive manner. As it stands, the universal service fee applies equally to anyone purchasing telecommunications services regardless of whether the individual can barely afford the service or makes a million dollars a year.¹⁸ An appropriations-based approach would alleviate the burden on low-income consumers by elevating the rate based on income bracket. This means that lower-income individuals will face less burden than they do within the current system, which will make it more affordable to subscribe to broadband service.

To be clear, additional subsidization of broadband may not have the drastic impact on adoption that most want to see. However, directly appropriating funding for a subsidy program better promotes the goals of widespread adoption than the current Lifeline structure.

INCREASE OF THE BENEFIT SIZE

With an updated funding mechanism, Congress can explore other options to improve the Lifeline program to increase broadband adoption rates. Currently, the Lifeline benefit only provides \$9.25 a month for the recipient to spend on specific services.¹⁶ This figure was tailored specifically to voice services as voice communication was the main telecommunications service envisioned by the program. Recently, this has been extended to broadband, but the subsidy has remained the same with some phase downs of voice-only support.¹⁷ For many consumers, this \$9.25 will only make a small dent into most broadband offerings, and for many

low-income consumers, the difference may not justify subscription.¹⁸

However, many factors contribute to the lack of adoption beyond price, most notably a lack of interest.¹⁹ Simply throwing more money at the problem may not significantly increase adoption rates if these other factors continue to suppress adoption. Further, many providers now offer low-cost options for low-income families; these offerings, though limited, offer another means of bridging the cost barrier for adoption.

Any subsidization will inherently take resources that could be used for other purposes, so Congress should be careful not to increase the benefit beyond a point where it will increase adoption. For example, Verizon suggests a benefit in the range of \$20-\$50 a month.²⁰ This is a wide range, and the needs of the consumer likely depend on the specific community, but it is a good starting point for discussions as Congress explores options for increasing the subsidy.

DELIVERY OF THE BENEFIT

Even if Congress fully funds the benefit and increases the subsidy to support broadband services, other factors will affect the total value derived. First among these factors will be the delivery mechanism.

Consumer vs. Provider

Currently, the Lifeline program primarily works by providing the Internet Service Provider (ISP) with funds after the ISP verifies whether a subscriber is eligible for the program.²¹ This has led to a number of problems. First, and most problematic, many mobile virtual network operators exploited the program for years by signing up consumers at no cost to the end user regardless of eligibility, and would continue to charge the fund monthly for the subscription.²² This led to improper payment rates of 18.47 percent.²³ Congress designed Lifeline to encourage adoption of communications services, but many of these subscribers still lack meaningful connections as dubious operators gamed the system.

Second, by providing the benefit directly to the ISP, the provider will simply apply the benefit to existing subscribers, or to new eligible customers who are unaware of the benefit prior to deciding to purchase the subscription. In isolation, this is not really an issue. If the consumers are eligible for the benefit, they likely will derive some value from the lower costs they soon discover. However, this does little to increase adoption rates, which is the goal of the program.

Finally, because the support goes directly to the ISP, recipients often lack adequate knowledge about the program beyond the specific offering in front of them.²⁴ For example,

if an ISP presents a consumer with an offer for a free smartphone or home internet at no cost to them, they may jump at the first offering they see. However, often these consumers could find more value from obtaining a different service or speed tier if they knew those options existed.

Instead of providing the benefit directly to the ISP, then, Congress should deliver the benefit to the consumer. This would eliminate much of the fraud associated with unscrupulous bad actors engaging in the program because it takes the control out of the hands of the ISPs. Even though the FCC has done work to eliminate the practices that made fraud rampant in the program, bad actors can still exploit the system.²⁴ If consumers directly receive the benefit to apply to the program of their choosing, they will at least be aware (to some extent) what the benefit can be used for and what they will receive. This would also limit instances in which the subsidy is not used to meaningfully impact adoption rates, as those who currently do not subscribe to a Lifeline supported service would receive the benefit, raising awareness of the program.

But even beyond these benefits, directly providing the consumer with the benefit gives the recipient more flexibility to use it in a way that best suits them. There are countless communications services currently supported, as well as different offerings and plans designed for different consumers. If a recipient is not subscribed to broadband because, for example, a low-cost offering does not provide worthwhile speeds for that household, applying that benefit to a higher speed plan (or a plan with higher data limits) could be a much better value.²⁵

Further, by delivering the benefit directly to the consumer, Congress can increase competition among providers. In an ISP-centric model, providers may lack incentive to target these lower-income customers. By allowing consumers to take the benefit and apply it to a wide array of services, they can then increase competition by increasing demand for those services. This is especially true in lower-income communities, which may currently lack meaningful choice simply due to the lack of potential revenue.

Direct Delivery of the Benefit via an EBT Card

The difficulty with this approach stems from the physical delivery of the benefit to consumers. AT&T and Verizon both support providing the subsidy on an electronic benefit card (EBT) similar to the Supplemental Nutrition Assistance Program (SNAP), but designing such a card and developing the necessary infrastructure to process payments will present numerous challenges.²⁷

EBT cards work much the same way as a debit card. The recipient receives the physical card along with a pin used

to identify themselves when making a purchase.²⁸ With the SNAP program, a grocery store can allow their systems to accept payment via the EBT card once the PIN matches the user, allowing for the recipient to directly spend the benefit on food and groceries.²⁹ However, customers can only use the EBT card for eligible purchases, not things like alcohol, vitamins or hot foods.³⁰

Theoretically, this approach could work for a telecommunications subsidy. A retailer can implement the necessary systems to accept an electronic benefit card from the consumer, as well as qualify specific services and offerings for purchase. This would allow a recipient to apply the benefit to any qualifying purchase from any participating retailer. The relatively low burden on providers will likely increase provider participation, as recipients will engage at the storefront in much the same way as any other consumer. The increased participation also provides recipients additional options regarding how to spend the benefit.

The difficulty with this approach stems from more practical challenges. First, Lifeline is a national program run by the USAC, and likewise this new benefit would approach the problem at a national level. However, most EBT programs are run at the state level, and the infrastructure in place may vary.³¹ For example, in some states, an EBT card connects the terminal with an account storing the benefits for the recipient; in others, the card physically stores the benefits.³² Ideally, Congress would simply leverage these existing cards, but this may not be practical unless there is significant state buy-in to support the program.

Second, while Congress could leverage the necessary infrastructure from existing programs, there will be upfront costs to establish the accounts, deliver the cards, verify offerings and identify eligibility. With these added costs, Congress will need to appropriate additional funding just to get the program off the ground. This translates to either an increased tax burden or lower payments for recipients. Further, these upfront costs may burden smaller providers that do not already have some of the required infrastructure larger providers do, meaning there may be less competition among providers.

Finally, Congress must consider potential fraud. Programs like SNAP are not without fraud, and Congress should consider ways that unscrupulous actors can game the system.³³

OTHER MEANS OF IMPROVING ADOPTION

ETC Designation

Most broadband subsidy programs grew out of general telecommunications subsidies, and with that outgrowth comes a requirement that participating providers receive

designation as an Eligible Telecommunications Carrier (ETC). At the time, this designation made some sense as a tool to prevent the discontinuation of telephony service in an area with no other options. But for broadband provision, these requirements often add significant costs that can prevent a provider from deploying service in an area. By eliminating any requirement that a broadband provider receive ETC designation, and therefore the burdens that come with it, Congress can ensure that the maximum number of providers will participate.⁴⁴ And, as consumer choice increases, the value of the subsidy will increase as well.

Infrastructure Reforms

Similarly, promoting competition and deployment will likely have a direct impact on broadband adoption. As providers begin the process of actually laying the fiber or attaching radios, they must get regulatory approval and access to public rights-of-way. These processes often go beyond what is actually necessary for management of this infrastructure, and can add significant costs and delays to the deployment process. For example, on just the Missouri side of Kansas City, Google required 37,000 permits, which would have cost \$2 million had the city not waived the fees.⁴⁵

If Congress decides to subsidize broadband in any form, lowering these regulatory barriers can help increase competition and deployment without adding additional subsidies. For instance, the Streamline Act (a national dig-once law), or the establishment of a cost-sharing regime for pole replacements in rural areas would be good steps to take and will translate to more options at lower prices for consumers.⁴⁶

That is not to say that infrastructure reforms will spur universal deployment or outweigh the need for additional subsidies, but if Congress is going to spend valuable resources to support low-income adoption of broadband, it should maximize the value of each dollar spent. Reforming the infrastructure deployment process will help achieve this goal by promoting competition in services, which will give consumers more choices at lower prices.

CONCLUSION

Broadband has become an integral part of American society, and those without a reliable connection face a growing divide. The FCC's Lifeline program was designed for voice telephony service, and unfortunately has become outdated for modern communications. It is time to revisit the program; exploring different ways to fund and deliver the benefit could greatly improve the efficacy of the subsidy. However, funding is not unlimited. It is vital that any reforms contemplate the potential waste associated with subsidy programs to protect taxpayer money.

ABOUT THE AUTHORS

Jeffrey Westling is a resident fellow for technology and innovation policy whose research focuses on telecommunications. Before joining R Street, he acted as a legal fellow in the Office of Commissioner Brendan Carr at the Federal Communications Commission, working on a variety of issues such as broadband classification and wireless infrastructure.

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Attachment—Additional Questions for the Record

**Subcommittee on Communications and Technology
Hearing on
“Broadband Equity: Addressing Disparities in Access and Affordability”
May 6, 2021**

Ms. Joi Chaney, Executive Director of the Washington Bureau & Senior Vice President for
Advocacy and Policy, National Urban League

The Honorable Yvette Clarke (D-NY)

1. In my district, great local non-profit organizations such as Digital Girl and NPower Inc. are focused on digital literacy and tech workforce development for Brooklyn’s underserved communities, including girls and people of color.
 - a. Ms. Chaney, can you please expound upon the role the federal government can play in addressing the challenges of digital literacy and readiness?

RESPONSE:

There are many steps the government can take in addressing the challenges of digital literacy and readiness and should take the lead on national efforts.

Digital readiness refers to the skills and equipment needed to effectively use information and communications technology to find, evaluate, create, and communicate online. The lack of these skills is a significant barrier for certain demographic groups, such as communities of color, hindering their ability to adopt and fully utilize broadband at home.

Our Lewis Latimer Plan for Digital Equity and Inclusion’s primary recommendation for addressing digital readiness is to create a national Office of Digital Equity to help coordinate training targeted to demographic groups with the lowest rates of adoption.

Among specific recommendations for the Office, the Plan proposes:

- Establishing a Digital Navigators Corps to help unconnected persons solve a wide range of adoption issues;
- Creating an Online Digital Readiness Portal to provide every American with access to free, age-appropriate curricula that teaches digital skills and enhances digital readiness, offered in multiple languages;
- Issuing reports on the effectiveness of different digital readiness strategies.

More information on these recommendations can be found in Chapter 4 of the Lewis Latimer Plan for Digital Equity.

Ms. Joi Chaney
Page 2

The Honorable G.K. Butterfield (D-NC)

1. I have been very focused on finding new ways to increase broadband access for unserved communities in my district. One idea that I've put forth in my bill - the Expanding Opportunities for Broadband Deployment Act - is to retire an outdated, burdensome statutory requirement that broadband providers be designated as Eligible Telecommunications Carriers (ETCs) to participate in FCC broadband deployment and adoption programs. My bill, which I will reintroduce soon, is an important step toward increasing broadband competition, speeding up rural deployment, and boosting adoption in low-income communities. Removing counterproductive ETC requirements from the FCC broadband deployment and adoption programs will give low-income families more choices and increase competition and service quality. These are goals we should all be able to embrace in a bipartisan manner. In fact, it's worth noting that both former FCC Chairman Tom Wheeler, a Democrat, and former Commissioner Mike O'Rielly, a Republican, support my bill.
 - a. Would removing the statutory requirement that providers be designated as "Eligible Telecommunications Carriers" to participate in FCC adoption programs, such as Lifeline or a Permanent Broadband Benefit Program, help expand provider participation and consumer choice?

RESPONSE:

Yes, removing the ETC requirement would help expand provider participation and consumer choice because it disqualifies existing and future broadband providers who could otherwise deliver service quickly and efficiently.

The primary justification for the ETC requirement is that government funding should not go to operators who do not meet the kind of requirements that historically applied to common carrier telephone companies, including public interest obligations, in exchange for obtaining a local monopoly to provide telephone service.

The ETC requirement has been criticized as outdated, excluded many providers who are otherwise qualified to deploy infrastructure but who cannot meet the technical definition of an ETC, potentially increasing costs and lowering performance for consumers. Critics of the ETC requirement note that as part of the process of awarding funding, the FCC already conducts an extensive review of the provider's "long-form" application, which ensures the provider is technically and financially capable of fulfilling all relevant funding obligations.

Further, those accepting funding are legally bound by the provision that the funds may be "used ... only for the provision, maintenance, and upgrading of facilities and services for which the support is intended" (*see* 47 C.F.R. § 54.314) and are obligated to provide service (subject to milestones) of a specified performance level, for a specific number of years, to the locations for

Ms. Joi Chaney
Page 3

which funding is awarded.

Assuming a robust audit and/or oversight process, failure to meet these obligations will result in penalties. In that light, the ETC designation or ongoing oversight by states may be redundant, though others argue that having multiple regulators provides additional assurance that companies are complying with the rules.

As a middle ground, our Lewis Latimer Plan for Digital Equity and Inclusion suggests that relevant ETC requirements could be incorporated into the FCC's long-form review process, making it possible to eliminate a separate ETC requirement. In particular, a service provider seeking FCC funding could be required to certify to the FCC:

- Compliance with applicable service requirements.
- Safeguards to facilitate continuing operations during emergencies, including back-up power sources, the ability to reroute traffic around damaged facilities, and being able to manage traffic spikes during emergencies.
- Compliance with applicable FCC consumer protection and service quality standards.
- Compliance with any specific requirements regarding the terms and conditions of broadband service supported by the government funding.
- Compliance with requirements that it has advertised the availability of the services and the charges for those services using media of general distribution, as required by the FCC.

Attachment—Additional Questions for the Record

**Subcommittee on Communications and Technology
Hearing on
“Broadband Equity: Addressing Disparities in Access and Affordability”
May 6, 2021**

Dr. George S. Ford, Chief Economist, Phoenix Center for Advanced Legal & Economic Public Policy Studies

The Honorable Richard Hudson (R-NC)

1. Thank you for coming before the committee to help us examine access and affordability for our constituents who lack access to broadband. As you are aware, the COVID-19 pandemic has exposed the digital divide in America. The internet has revolutionized how we learn, connect, and conduct business. We learned during this pandemic that access to broadband is critical for online learning and telemedicine. However, too many regions are lacking crucial internet connectivity. These unserved communities in our districts are often home to some of the most vulnerable constituents, many of whom are currently unable to access potentially lifesaving telehealth treatments due to lack of broadband service.

Mr. Ford, I have the privilege of representing the epicenter of the universe and the largest military installation on the planet, Fort Bragg. North Carolina’s Eighth Congressional District is also home to the fastest growing veterans’ population in the country. Two years ago, the FCC issued a report that found more broadband adoption challenges among veterans in rural America than among veterans in cities. According to the FCC, a major obstacle to broadband adoption among veterans living in rural areas is lack of broadband access; they can’t adopt broadband if it hasn’t been deployed. At the same time, veterans in rural areas are more likely to have a service-connected disability rating and are more likely to need telehealth services according to data from the Commerce Department. So, rural broadband is incredibly important to veterans across my district and across the country.

- a. Would rate regulating internet service make it easier or harder for these veterans to get access to broadband?

Response:

Rate regulation itself will not promote the deployment of network to unserved areas as such regulation reduces the returns on investment. The lack of access is a consequence of inadequate returns, so rate regulation only makes the problem worse. Also, if network deployment is subsidized to unserved areas, the amount of the subsidy must rise to accommodate the lower returns created by rate regulation.

2. The FCC's report also found that veterans rely on the Internet to find job opportunities after they separate from their military service. But many veterans do not have access to broadband at all.

The other side has proposed raising the threshold for getting broadband support to 100 megabits per second symmetrical speeds, which would make cities like Charlotte, NC eligible and put many rural areas in my district that don't have broadband access at the back of the line.

- a. Even if veterans in rural areas were able to get broadband at 100 over 100, what would happen to the price of that internet?

Response:

Symmetric speed requirements are not sensible. The Internet is not consumed in a symmetric fashion. Symmetric speed requirements are an attempt to make fiber the only viable broadband option, and to do so for reasons other than achieving the benefits of broadband (rather, the goal is the nationalization of the broadband network). As for price, it depends on the model the government uses. If deployment is subsidized, then the price may not rise (or price may be set by the subsidy regime) but the full price (which includes the cost of the subsidy) will rise. The full price may take the form of taxes, however, and not broadband prices directly.

- b. If we rate regulate broadband down to \$15 dollars, does it make it harder for providers to invest in 100 Mbps or gigabit speeds and build out their high-speed networks to rural areas?

Response:

No rational company will construct a very-high speed broadband network in an area where the price is regulated to \$15 per month. The construction of such a network will require substantial government subsidies, either direct or indirect, to construct a network under that sort of regulatory constraint.

Attachment—Additional Questions for the Record

Subcommittee on Communications and Technology
Hearing on
“Broadband Equity: Addressing Disparities in Access and Affordability”
May 6, 2021

Mr. Chris Lewis, President and CEO, Public Knowledge

The Honorable G.K. Butterfield (D-NC)

1. I have been very focused on finding new ways to increase broadband access for unserved communities in my district. One idea that I’ve put forth in my bill - the “Expanding Opportunities for Broadband Deployment Act” - is to retire an outdated, burdensome statutory requirement that broadband providers be designated as Eligible Telecommunications Carriers (ETCs) to participate in FCC broadband deployment and adoption programs. My bill, which I will reintroduce soon, is an important step toward increasing broadband competition, speeding up rural deployment, and boosting adoption in low-income communities. Removing counterproductive ETC requirements from the FCC broadband deployment and adoption programs will give low-income families more choices and increase competition and service quality. These are goals we should all be able to embrace in a bipartisan manner. In fact, it’s worth noting that both former FCC Chairman Tom Wheeler, a Democrat, and former Commissioner Mike O’Rielly, a Republican, support my bill.
 - a. The FCC announced that hundreds of providers have been accepted into the Emergency Broadband Benefit (EBB) program, including many that had not previously participated in the Lifeline program. Do you think that Congress’s decision to open that program to providers who have not been designated as “Eligible Telecommunications Carriers” helped bolster participation and expand the options available to consumers?

Answer to 1a. Congress’s decision to open the Emergency Broadband Benefit to non-ETCs did expand provider participation and provide more options to consumers. The Eligible Telecommunications Carrier designation is currently required in order to receive Universal Service funds, and was created to ensure that providers adhere to certain requirements that protect consumers and government funds. However, this designation is an excuse given by many large providers for not offering Lifeline service to low-income consumers. Accordingly, it has also limited consumer choice in the Lifeline marketplace. There are other methods of ensuring that consumers are protected, for example, including consumer safeguards as a condition for receiving funds. If these and other protections are enacted, ETC designations could become superfluous. The Emergency Broadband benefit already has over 1,000 providers participating in

Mr. Chris Lewis
Page 2

the program, including many not-ETCs.¹ This makes it more likely that consumers have one or more options for subsidized service where they live and will improve the quality of service customers receive.

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