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State Broadband Initiatives: Selected State and Local Approaches as Potential Models for Federal Initiatives to Address the Digital Divide

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SUMMARY

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State Broadband Initiatives: Selected State and Local Approaches as Potential Models for Federal Initiatives to Address the Digital Divide

Access to high-speed internet, known as broadband, is becoming increasingly essential to daily life as more applications and activities move online. This has become particularly apparent during the coronavirus (COVID-19) pandemic, as employers in some sectors transitioned their workers from on-site work to telework and schools migrated their students from classrooms to distance learning. These shifts may seem clear-cut, but many areas of the United States—particularly rural areas—have either limited or no access to broadband infrastructure. Additionally there are citizens in areas with high broadband penetration who are unable to access it due to socioeconomic factors. The gap between those who have access to broadband and those who do not is referred to as the digital divide.

While there is broadband penetration in many areas of the United States, 21.3 million Americans lack access to a connection that enables a download rate of at least 25 megabits per second (Mbps) and an upload rate of 3 Mbps, according to the Federal Communications Commission's (FCC's) 2019 *Broadband Deployment Report*. Federal agencies such as the FCC, the National Telecommunications and Information Administration (NTIA, in the Department of Commerce), and the Rural Utilities Service (RUS, in the U.S. Department of Agriculture) have directed resources to help bridge the digital divide—chiefly for broadband infrastructure buildout. While broadband infrastructure addresses a large component of the digital divide by increasing availability, there are additional geographic, social, and economic factors that affect broadband adoption, even where it is available. Major examples of such factors include the cost of internet service and devices and digital literacy skills.

To further assist in closing the digital divide, states have been developing their own broadband programs and initiatives. Although many state broadband initiatives focus on building out broadband infrastructure, states have also been considering other factors. As each state approaches broadband access and deployment differently, this report analyzes selected state-level and local initiatives that have tried different approaches—approaches that may serve as models for future federal broadband initiatives. These include initiatives that address broadband mapping, broadband feasibility, digital equity and digital inclusion, gigabit broadband initiatives, and the homework gap.

Among the options Congress may consider are

- holding hearings with state officials involved in state broadband initiatives to hear their stories, successes, and lessons learned;
- developing pilot broadband initiatives to evaluate the feasibility of different approaches;
- providing additional funding and oversight for state initiatives to help improve their sustainability; and
- finding ways to address duplicative funding while not unintentionally exacerbating the exclusion of unserved and underserved communities.

Whether Congress decides to enact new broadband funding or initiatives remains to be seen; however, there appears to be an opportunity for states to share lessons learned from their approaches to closing the digital divide. Numerous bills addressing aspects of the digital divide other than broadband infrastructure have been introduced in the 116th Congress, including the Homework Gap Trust Fund Act (S. 3362) introduced on February 27, 2020, and the Closing the Homework Gap Through Mobile Hotspots Act (H.R. 5243), introduced on November 21, 2019. Bills addressing the coordination of federal agencies and tracking of federal funding for broadband include Broadband Interagency Coordination Act of 2019 (H.R. 4283) introduced on September 11, 2019, and the Advancing Critical Connectivity Expands Service, Small Business Resources, Opportunities, Access, and Data Based on Assessed Need and Demand Act (H.R. 1328), passed by the House on May 8, 2019.

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Introduction

The *digital divide*—a gap between those who use or have access to telecommunications and information technologies and those who do not—affects every region of the United States. Since the internet became publicly available in the 1990s, an increasing amount of information that individuals access for work, school, and entertainment is digital and hosted online. Members of Congress have expressed continuing interest in ensuring that their constituents have access to broadband internet, and in the 116th Congress, they have introduced legislation (see the **Appendix** to this report) and held hearings on opportunities to expand broadband deployment and close the digital divide. Although Congress has provided federal funding for multiple broadband infrastructure initiatives, the gap between those who can access broadband and those who do not still persists.

Ensuring access to broadband is not the only barrier to closing the digital divide. Other challenges include increasing the *adoption* of broadband (where it is available) and training for digital literacy. According to the National Digital Inclusion Alliance:

> We do need to address the lack of broadband infrastructure in rural areas. It is a serious problem. But, it is just one barrier to individuals and communities being able to fully participate in society today. The other common barriers, no matter where one lives, are the costs of internet service and devices, plus digital literacy skills. Simplistically equating "the digital divide" with just one of these barriers increases the division in our country.[1]

Broadband infrastructure initiatives funded under the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) have concluded, but the Federal Communications Commission (FCC) and Rural Utilities Service (RUS, within the U.S. Department of Agriculture) continue to have active programs that provide federal funding for broadband. There are few current federal funding initiatives to address other aspects of the digital divide, however, such as digital literacy and digital inclusion and the homework gap.

States are playing a crucial role in efforts to expand broadband access, encouraging broadband investment, and helping to bring more of their residents online.[2] Each state approaches broadband access and deployment differently, and state efforts may provide models for any future federal initiatives. This report analyzes selected state-level and local initiatives that have used different approaches. It does not attempt to include broadband initiatives from all 50 states. Rather, it highlights selected examples to illustrate programs that could serve as templates for potential federal initiatives.

Broadband Technologies

The term *broadband* commonly refers to high-speed internet access that is faster than dial-up access and is immediately accessible. In 2015, the FCC defined broadband as 25/3 megabits per

[1] Angela Siefer, Executive Director, National Digital Inclusion Alliance, written testimony before the House Committee on Energy and Commerce, Subcommittee on Communications and Technology, at hearing on "Empowering and Connecting Communities Through Digital Equity and Internet Adoption," January 29, 2020, https://docs.house.gov/meetings/IF/IF16/20200129/110416/HHRG-116-IF16-Wstate-SieferA-20200129.pdf.

[2] Kathryn de Wit, *How State Policy Shapes Broadband Deployment*, Pew Charitable Trusts, December 17, 2019, https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/12/how-state-policy-shapes-broadband-deployment.

second (Mbps), i.e., 25 Mbps (download rate) and 3 Mbps (upload rate). About 21.3 million Americans currently lack access to broadband at those speeds.[3]

Broadband includes several high-speed transmission technologies, such as:

- digital subscriber line (DSL);
- cable modem;
- fiber;
- wireless;
- satellite; and
- broadband over powerlines (BPL).[4]

The Digital Divide

The term *digital divide* refers to a gap between those who use or have access to telecommunications and information technologies and those who do not.[5] Many areas of the United States—particularly rural areas—have either limited or no access to broadband infrastructure. Several factors contribute to the digital divide, including terrain, population density, demography, and market factors. Additionally, there are citizens in areas with high broadband penetration who are unable to access it due to socioeconomic factors.

Ensuring access to broadband is not the only barrier to closing the digital divide. Other challenges include increasing the *adoption* of broadband (where it is available) and training for digital literacy. Although strides have been made in the deployment of broadband, the digital divide persists—prompting a variety of federal broadband initiatives to address barriers and push communities across the digital divide.

Federal Broadband Programs and Initiatives

Federal Communications Commission

The FCC has several broadband programs aimed at bridging the digital divide and expanding universal service principles.

Universal Service Fund

The concept of universal service—the principle that all Americans should have access to communications services at reasonable rates—underpins a category of FCC programs that aim to bring broadband and voice services to parts of the country that may otherwise have difficulty getting connected. The universal service concept was conceived in the Communications Act of

[3] Federal Communications Commission, *2019 Broadband Deployment Report*, May 29, 2019, p. 2, https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf.

[4] DSL uses copper telephone wires. Cable modem uses coaxial cables—the same used for cable television. Fiber uses pulses of light shot by lasers through thin strands of glass. Wireless uses a radio connection between the consumer and the service provider's terrestrial antennae. Satellite uses a radio connection to a space-based antenna. BPL uses powerlines to deliver broadband to consumers. For further information, see Federal Communications Commission, *Types of Broadband Connections*, June 23, 2014, https://www.fcc.gov/general/types-broadband-connections.

[5] For more information on the digital divide, see CRS Report RL30719, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, by Colby Leigh Rachfal and Angele A. Gilroy.

1934 to apply to voice telephone service, but in more recent years it has expanded to include high-speed internet. The Universal Service Fund encompasses four programs:

- The High Cost/Connect America Fund provides support for high-cost (typically rural) areas.
- The Low Income (Lifeline) program provides support to help eligible low-income consumers gain access to and remain on a broadband network.
- The Schools and Libraries (E-rate) program provides support for eligible elementary and secondary schools and classrooms, as well as libraries, for internet access, internal connections, and telecommunications services.
- The Rural Health Care program provides support to eligible rural health care providers for telecommunications and broadband services.[6]

Although the Universal Service Fund programs are federal programs, their funding is not appropriated by Congress. Rather, it comes from mandatory contributions by interstate telecommunications providers, in amounts based on their end-user interstate and international revenues. The telecommunications providers may, but are not required to, pass these charges directly to their subscribers, typically in the form of a fee—for example, on a wireless phone bill.[7]

Rural Digital Opportunity Fund

On January 30, 2020, the FCC adopted the Rural Digital Opportunity Fund, which directs $20.4 billion over 10 years to fund the deployment of high-speed broadband networks in rural America through a two-phase reverse auction (i.e., the lowest bidder wins).

Phase I of the Rural Digital Opportunity Fund is scheduled to begin in October 2020 and is to target census blocks that are wholly unserved with fixed broadband at speeds of at least 25/3 Mbps. This phase is to provide up to $16 billion in overall funding to census blocks to solicit bids for fixed broadband buildout where existing data shows there is no such service available.[8] Phase II of the program is to make at least $4.4 billion available to target partially served areas, i.e., census blocks where only some locations lack access to 25/3 Mbps broadband, as well as census blocks that do not receive bids in the first phase.[9]

5G Fund for Rural America

In December 2019, the FCC announced the proposed 5G Fund for Rural America. The proposed fund would make up to $9 billion available to carriers to deploy advanced 5G (fifth generation) mobile wireless services in rural America.[10] Similar to the Rural Digital Opportunity Fund,

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[6] Federal Communications Commission, *Universal Service*, https://www.fcc.gov/general/universal-service.

[7] For more information on Universal Service Fund programs, see CRS Report RL30719, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, by Colby Leigh Rachfal and Angele A. Gilroy.

[8] The FCC plans to use existing Form 477 data to identify locations for Phase I. Phase II is projected to use the FCC's forthcoming Digital Opportunity Data Collection, which is expected to provide additional data granularity. For more information on issues with mapping broadband access by location, see CRS Report R45962, *Broadband Data and Mapping: Background and Issues for the 116th Congress*, by Colby Leigh Rachfal.

[9] Federal Communications Commission, *FCC Launches $20 Billion Rural Digital Opportunity Fund to Expand Rural Broadband Development*, January 30, 2020, https://docs.fcc.gov/public/attachments/DOC-362190A1.pdf.

[10] Federal Communications Commission, *Chairman Pai Announces Plan to Launch $9 Billion 5G Fund for Rural America*, December 4, 2019, https://docs.fcc.gov/public/attachments/DOC-361168A1.pdf. For more information on 5G, see CRS Report R45485, *Fifth-Generation (5G) Telecommunications Technologies: Issues for Congress*, by Jill C.

monies from the 5G Fund would be allocated through a reverse auction and would target areas that are remote or challenging to reach.

The 5G Fund would replace the planned Mobility Fund Phase II, which has come under some scrutiny. In August 2018, the FCC published initial eligibility maps for Mobility Fund Phase II, which were to be used in allocating up to $4.53 billion for rural wireless broadband expansion in areas lacking 4G service. In December 2018, the FCC announced it would launch an investigation into whether one or more major carriers violated the Mobility Fund reverse auction's mapping rules and submitted incorrect coverage maps.[11] In a report released on December 4, 2019, the FCC found that the 4G Long Term Evolution (LTE) coverage data submitted by providers is not sufficiently reliable for the purpose of moving forward with Mobility Fund Phase II; it terminated that fund and replaced it with the 5G Fund.[12] Proposed details of the 5G Fund are still forthcoming from the FCC.

Rural Utilities Service

The Rural Utilities Service (RUS), in the U.S. Department of Agriculture (USDA), has multiple broadband connectivity programs:

- The Rural Broadband Access Loan and Loan Guarantee program funds the costs of construction, improvement, or acquisition of facilities and equipment needed to provide service in eligible rural areas.
- The Community Connect Grants program funds broadband deployment to rural communities where it is not yet economically viable for private sector providers to deliver service.
- The Telecommunications Infrastructure Loans and Loan Guarantees program funds the construction, maintenance, improvement, and expansion of telephone service and broadband in extremely rural areas with a population of 5,000 or less.
- The Distance Learning and Telemedicine program principally funds end-user equipment to help rural communities use telecommunications to link teachers and medical service providers in one area to students and patients in another.
- The ReConnect program furnishes loans and grants to provide funds for the costs of construction, improvement, or acquisition of facilities and equipment needed to provide broadband service in eligible rural areas.[13]

Congress authorizes RUS programs and provides funding for them in annual appropriations bills. Eligibility requirements vary by program. For example, the Community Connect program defines an eligible area as a rural area that lacks any existing broadband speed of at least 10 Mbps download and 1 Mbps upload, which was the FCC's broadband speed benchmark previous to 25/3 Mbps.[14] Community Connect grant funds may be used to build, acquire, or lease facilities,

Gallagher and Michael E. DeVine.

[11] Federal Communications Commission, *FCC Launches Investigation into Potential Violations of Mobility Fund Phase II Mapping Rules*, December 7, 2018, https://docs.fcc.gov/public/attachments/DOC-355447A1.pdf.

[12] Federal Communications Commission, *Mobility Fund Phase II Coverage Maps Investigation*, Staff Report, p. 2, December 4, 2019, https://docs.fcc.gov/public/attachments/DOC-361165A1.pdf.

[13] For more information on RUS broadband programs, see CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*, by Lennard G. Kruger and Alyssa R. Casey, and CRS In Focus IF11262, *The ReConnect Broadband Pilot Program*, by Alyssa R. Casey.

[14] Note that this is slower than the 25/3 Mbps definition of broadband used by the FCC.

spectrum, land, or buildings used to deploy broadband for residential and business customers, as well as critical community facilities (e.g., public schools, fire stations, or public libraries).[15] The Telecommunications Infrastructure Loans and Loan Guarantees program defines an eligible area as a rural area or town with a population of 5,000 or fewer without telecommunications facilities. Funds from this program can be used to finance broadband-capable telecommunications services.[16]

The RUS also managed the Broadband Initiatives Program (BIP) under the American Recovery and Reinvestment Act of 2009 (P.L. 111-5). Approximately $2.5 billion was allocated as loan, grant, and loan/grant combinations to deploy infrastructure in rural areas, with an emphasis on infrastructure projects to provide service directly to end users.[17] The RUS required all BIP projects to be completed by June 2015.[18]

National Telecommunications and Information Administration

American Recovery and Reinvestment Act of 2009

Funded by the American Recovery and Reinvestment Act of 2009 (P.L. 111-5), the Broadband Technology Opportunities Program (BTOP) was an approximately $4 billion grant program administered by NTIA to help bridge the digital divide. Projects funded by BTOP deployed broadband infrastructure, enhanced and expanded computer centers, and encouraged the sustainable adoption of broadband.[19] The BTOP program no longer has funding available; out of 233 funded projects, two remain active.[20]

BroadbandUSA

As the BTOP program came to a close in 2015, NTIA launched BroadbandUSA to respond to demand from communities seeking to ensure that their citizens have the broadband capacity they need to attract employers, create jobs, improve healthcare, advance development, and increase public safety.[21] Although BroadbandUSA does not provide funding, it provides broadband technical assistance to communities, as well as a funding program guide, broadband resources—such as information on permitting and monthly *Practical Broadband Conversations* webinars—

[15] U.S. Department of Agriculture Rural Development, *Community Connect Grants*, https://www.rd.usda.gov/programs-services/community-connect-grants.

[16] U.S. Department of Agriculture Rural Development, *Telecommunications Infrastructure Loans & Loan Guarantees*, https://www.rd.usda.gov/programs-services/telecommunications-infrastructure-loans-loan-guarantees.

[17] U.S. Government Accountability Office, *Recovery Act USDA Should Include Broadband Program's Impact in Annual Performance Reports*, Report to Congressional Requesters, June 2014, p. 2, https://www.gao.gov/assets/670/664129.pdf.

[18] Ibid., pg. 8.

[19] National Telecommunications and Information Administration, *Broadband Technology Opportunities Program*, https://www.ntia.doc.gov/category/broadband-technology-opportunities-program.

[20] For a complete list of funded projects, see National Telecommunications and Information Administration, *All Recipients*, https://www2.ntia.doc.gov/all-recipients.

[21] U.S. Department of Commerce National Telecommunications and Information Administration, *FY2019 Budget as Presented to Congress*, February 2018, pp. 37-38, http://www.osec.doc.gov/bmi/budget/FY19CBJ/NTIA%202019%20CJ—FINAL%20as%20of%202-14-2018%20-w508.pdf.

and a National Broadband Availability Map. Funding for BroadbandUSA is appropriated annually.[22]

Selected State and Local Broadband Initiatives: Common Approaches and Prototypes

Increasingly, state governments have taken action to ensure that all residents, regardless of where they live or socioeconomic factors that may inhibit adoption, have access to broadband.[23] While many state broadband initiatives focus on broadband infrastructure deployment, some address other aspects, such as adoption, mapping, feasibility, digital equity and digital inclusion, gigabit broadband initiatives, and the homework gap. This section describes selected state and local broadband initiatives, using the selected programs as examples to illustrate common approaches. The states and programs described are not intended to be a comprehensive list.

Broadband Infrastructure Deployment

Broadband infrastructure deployment programs, targeting areas that do not currently have broadband service, are the most common type of state broadband initiative. State broadband infrastructure projects typically allow applicants to apply grant funds toward building infrastructure assets, such as conduits, fiber-optic cable, and wireless towers. State programs also typically require that applicants provide last-mile broadband access to households that are unserved.[24] Some state programs stipulate speed requirements—usually, but not always, 25/3 Mbps in alignment with the FCC definition of broadband.[25]

Example: New York

In 2015, New York Governor Andrew M. Cuomo established the $500 million New York Broadband Program. The program provides state grant funding through a reverse auction—similar to the method the FCC plans to use for the Rural Digital Opportunity Fund. The program's intent is to support projects that deliver high-speed internet access to unserved and underserved areas of New York State at speeds of 100 Mbps in most areas and 25 Mbps in the most remote areas. Nearly 90% of this program's funding has been awarded to projects that will address unserved areas of the state, connecting these locations for the first time.[26]

Public-Private Partnerships for Broadband Buildout

Building out broadband infrastructure in some areas of the United States may prove challenging for broadband providers, due to aspects such as terrain, cost, or lack of density, which have a

[22] For NTIA's requested FY2021 budget, see U.S. Department of Commerce, National Telecommunications and Information Administration, *FY2021 Budget as Presented to Congress*, February 2020, https://www.commerce.gov/sites/default/files/2020-02/fy2021_ntia_congressional_budget_justification.pdf.

[23] Government Technology, *State of the States 2020: Broadband Is Critical Infrastructure*, February 3, 2020, https://www.govtech.com/computing/State-of-the-States-2020-Broadband-Is-Critical-Infrastructure.html.

[24] Last-mile broadband access refers to the internet connection that is delivered directly to an end user (e.g., home or business).

[25] Georgia Department of Community Affairs, *Georgia Broadband Deployment Initiative*, Broadband Ready Site Application Information, https://broadband.georgia.gov/designations/broadband-ready-site-application-information.

[26] The NYS Broadband Program Office, https://nysbroadband.ny.gov/.

negative impact on return on investment. This may leave some communities with limited or, in some cases, no options to subscribe to broadband.[27] In such areas, some states have sought out alternatives, such as entering into public-private partnerships, to help expand broadband to their communities.

According to the North Carolina Broadband Infrastructure Office, "a partnership means that the county or municipality builds community support, identifies its needs, and offers its resources to the broadband provider to make broadband deployment more financially attractive to the provider. In return, the broadband provider brings its technical expertise, innovation, equipment, and capital investment into under- or unserved areas in the community. In the end, both partners share the risks and costs of broadband deployment."[28] The North Carolina Broadband Infrastructure Office offers several examples of potential public-private partnerships:

> For example, a city or county may offer a cost-sharing opportunity to broadband providers, in which the municipality contributes an agreed upon portion of the costs of broadband expansion to an under- or unserved region. A community anchor tenant, such as a school system, community college, hospital or a public safety system, might offer a stable starting point for the network and a gathering place for residents seeking wireless broadband access before the network is built or expanded.... [T]he town, city or county can choose to lease rights of way at no or reduced cost for the installation of broadband infrastructure. Further, the municipality can make its vertical assets—tall buildings, water towers, etc.—available to broadband providers at no or reduced charges, for the installation of fixed wireless internet equipment. The municipality has several policies available that can encourage forming public-private partnerships, and expand broadband access.[29]

Example: New Mexico

In February 2020, the New Mexico Department of Information Technology announced a new public-private partnership aimed at building out broadband in the southeastern portion of the state. The partnership, between ExxonMobil, the state of New Mexico, and Plateau Communications, is to develop a $5 million fiber network offering advanced broadband to businesses along a 107-mile route, with completion scheduled for August 2020.[30]

Leveraging Existing Infrastructure Assets

It can be difficult to build out new broadband infrastructure in certain areas—especially in suburban or rural areas—due to terrain or other hindrances, such as limited or prohibited access to land that is publicly or privately owned. One option to address this challenge could be to leverage existing infrastructure via a rights-of-way or permitting process. A rights-of-way grant is an authorization to use a specific piece of public land for a specific project, such as electric transmission lines, communication sites, roads, trails, fiber optic lines, canals, flumes, pipelines,

[27] Satellite broadband is available almost universally, but may have limitations such as latency issues or connectivity disruptions caused by weather.

[28] North Carolina Department of Information Technology Broadband Infrastructure Office, *Public Private Partnerships Community Broadband Playbook*, https://www.ncbroadband.gov/playbook/building-the-broadband-network/private-public-partnerships/.

[29] Ibid.

[30] BBC Wires, *New Public-Private Partnership to Boost Broadband in Southeastern New Mexico*, Broadband Communities Magazine, February 12, 2020, https://www.bbcmag.com/breaking-news/new-public-private-partnership-to-boost-broadband-in-southeastern-new-mexico.

or reservoirs.[31] Federal assets such as tower facilities, buildings, and land can also be made available via permits that allow their use in deploying broadband infrastructure to lower the cost of broadband buildouts and encourage private-sector companies to expand broadband infrastructure.[32] Through the American Broadband Initiative—a comprehensive effort to stimulate increased private sector investment in broadband[33]—the NTIA has been working with other federal agencies, such as the Department of the Interior and the Department of Homeland Security, to streamline the federal permitting process and make it easier for network builders to access federal assets and rights-of-way.[34]

Example: Arizona

Arizona's Smart Highway Corridor Program intends to leverage the highway system as a route for broadband infrastructure. On January 13, 2020, Arizona Governor Doug Ducey announced nearly $50 million in funding to enable the Arizona Department of Transportation to install more than 500 miles of broadband conduit and fiber optic cable along designated highway segments in rural areas of the state. The new corridors will enable future broadband capacity in Arizona's rural and tribal areas.[35]

Broadband Adoption

While broadband accessibility across the United States—especially in rural areas—has been a continuing challenge, another challenge facing communities is that of barriers to broadband adoption, even where service is available. Broadband adoption can be defined as residential subscribership to high-speed internet access.[36] Barriers that may prevent consumers and businesses from adopting broadband include the affordability of broadband subscriptions, a lack of awareness of the benefits broadband can bring, age, unfamiliarity with digital devices and digital skills, and a lack of training in how to use such devices and the services they enable.[37]

Example: California

California's Broadband Adoption Fund is a $20 million program created in 2017 through Assembly Bill 1665.[38] The Fund's purpose is to assist communities with limited broadband

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[31] U.S. Department of the Interior, Bureau of Land Management, *Rights-of-Way*, https://www.blm.gov/programs/lands-and-realty/rights-of-way.

[32] National Telecommunications and Information Administration BroadbandUSA, *Infrastructure Week: Leveraging Public Assets to Accelerate Broadband Deployment*, NTIA Webinar Series, May 15, 2019, p. 70, https://broadbandusa.ntia.doc.gov/sites/default/files/resource-files/bbusa_webinar_presentation_190515.pdf.

[33] David Redl, *American Broadband Initiative to Expand Connectivity for all Americans*, National Telecommunications and Information Administration, February 13, 2019, https://www.ntia.doc.gov/blog/2019/american-broadband-initiative-expand-connectivity-all-americans.

[34] Ibid., pp. 65-66.

[35] Office of the Governor Doug Ducey, *NEW: Governor Ducey Announces Major New Investments in Rural Broadband*, January 13, 2020, https://azgovernor.gov/governor/news/2020/01/new-governor-ducey-announces-major-new-investments-rural-broadband.

[36] Colin Rhinesmith, Ph.D, *Digital Inclusion and Meaningful Broadband Adoption Initiatives*, Benton Foundation, Evanston, IL, January 2016, p. 8, https://www.benton.org/sites/default/files/broadbandinclusion.pdf.

[37] For additional information on broadband adoption and demand, see CRS Report R46108, *Demand for Broadband in Rural Areas: Implications for Universal Access*, by Brian E. Humphreys.

[38] California Legislative Information, *AB-1665 Telecommunications: California Advanced Services Fund (2017-2018)*, Chapter 851, October 16, 2017, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=

adoption by providing grants to increase publicly available or after-school broadband access and digital inclusion, such as grants for digital literacy training programs and public education. The California Public Utilities Commission gives preference to programs and projects in communities with demonstrated low broadband access, including low-income communities, senior citizen communities, and communities facing socioeconomic barriers to broadband adoption.[39]

Broadband Mapping

Pinpointing where broadband is and is not available in the United States has been an ongoing challenge. Current data on national broadband availability is provided by private telecommunications providers, collected by the FCC, and displayed on the FCC's Fixed Broadband Deployment Map. Difficulty in accurately mapping broadband availability has been attributed to a number of factors, including the adequacy of census block data, the lack of independent data validation outside the FCC, and the absence of a challenge process for consumers and others who believe that the Fixed Broadband Deployment Map may overstate availability in their area.

In early 2019, it came to the FCC's attention that inaccuracies in the Fixed Broadband Deployment Map's data may cause broadband deployment to be overstated. The Fixed Broadband Deployment Map may indicate that areas have access to broadband when in reality, they do not. Inaccurate data on broadband deployment could lead to overbuilding in areas that currently have broadband, while leaving other areas underserved or unserved.[40] The FCC has taken steps to address broadband mapping issues in the forthcoming Digital Opportunity Data Collection, but it may be several years before a more accurate and granular national broadband map is realized. In the interim, states have been developing their own broadband maps to determine the actuality of broadband availability in their communities.

Example: Georgia

In 2018, the Georgia legislature passed the Achieving Connectivity Everywhere (ACE) Act,[41] which seeks to obtain an accurate representation of where broadband connectivity is lacking within the state. To achieve this, the Georgia Broadband Deployment Initiative developed a database of all premises located within three targeted pilot counties: Elbert, Lumpkin, and Tift. Information was obtained from county and municipal officials to identify which premises were commercial, single-family, or multi-dwelling units. Next, the State of Georgia developed specific agreements to obtain data on locations that receive service from the seven companies providing broadband in the pilot counties.[42] Georgia's pilot program differs from the FCC's approach because it surveys whether individual locations have access to broadband rather than collecting data only by census block. The three-county pilot showed that the FCC maps misidentified about

201720180AB1665.

[39] California Public Utilities Commission, *California Advanced Services Fund (CASF) Adoption Account*, https://www.cpuc.ca.gov/General.aspx?id=6442457502.

[40] For additional information on broadband mapping, see CRS Report R45962, *Broadband Data and Mapping: Background and Issues for the 116th Congress*, by Colby Leigh Rachfal.

[41] Georgia General Assembly, *2017-2018 Regular Session - SB 402*, "Achieving Connectivity Everywhere (ACE) Act," http://www.legis.ga.gov/legislation/en-US/Display/20172018/SB/402.

[42] Lisa Gonzalez, *Georgia Developing More Accurate Broadband Maps*, Institute for Local Self-Reliance, October 3, 2019, https://ilsr.org/georgia-developing-maps-for-better-broadband-coverage-data/.

half of the locations without broadband. A statewide map for Georgia is expected to be completed in June 2020.[43]

Broadband Feasibility

One of the first steps in laying the foundation for broadband access may be to determine broadband needs that are unique to a state or community. This analysis can lead to a long-term vision and goals, help with the maximization of resources, and lay a framework for a state or community feasibility study. A feasibility study can aid the state or community in determining how best to invest in broadband, evaluating ways to deploy new broadband networks, and defining the pros and cons of a proposed approach. Questions that may be considered include

- What problem or problems are you are trying to solve?
- Are you trying to bring broadband to parts of your community that are unserved, underserved, or both?
- Do you have a digital equity and utilization problem?
- Are consumers in your community dissatisfied with their current internet provider?[44]

Example: Vermont

In Vermont, the Department of Public Service's Broadband Innovation Grant program is designed to help communities conduct feasibility studies and create business plans related to the deployment of broadband in rural, unserved, and underserved areas within the state. The Vermont state legislature approved $700,000 in grant funding to the Department in Act 79 (H.R. 513) of 2019.[45] The program awards up to $60,000 per grant to eligible grantees, which include -profit organizations, for-profit businesses, cooperatives, distribution utilities, communications union districts, and other government entities. Grantees are to deliver a feasibility study that proposes new broadband systems with minimum speeds of 25/3 Mbps in unserved or underserved areas.[46] If a study indicates that a project could become cash-flow positive within three years, the Department is to request an actionable business plan from the grantee. Studies are to conclude within six months of receipt of the award and findings are to be reported to the Commissioner of Public Service.[47]

Digital Equity and Digital Inclusion

According to the National Digital Inclusion Alliance (NDIA), a nonprofit community engagement organization, digital equity is a condition in which all individuals and communities have the

[43] Emma Hunt, *Rural Broadband Is a Problem, and Georgia Is Mapping It*, Marketplace, October 23, 2019, https://www.marketplace.org/2019/10/23/rural-broadband-is-a-problem-and-georgia-is-mapping-it/.

[44] Lori Sherwood, *Feasibility Studies for Municipal Broadband*, Broadband Communities Magazine, October 2017, https://www.bbcmag.com/community-broadband/feasibility-studies-for-municipal-broadband.

[45] Vermont General Assembly, H.R. 513 *(Act 79)*, An act relating to broadband deployment throughout Vermont, June 20, 2019, https://legislature.vermont.gov/bill/status/2020/H.513.

[46] State of Vermont Department of Public Service, *Broadband Innovation Grant Program*, Overview, https://publicservice.vermont.gov/content/broadband-innovation-grant-program.

[47] State of Vermont Office of Governor Phil Scott, *Governor Phil Scott and the Public Service Department Introduce Broadband Innovation Grant Program*, press release, August 7, 2019, https://governor.vermont.gov/press-release/governor-phil-scott-and-public-service-department-introduce-broadband-innovation-grant.

information technology capacity needed for full participation in society, democracy, and the economy.[48] Steps taken to achieve this are known as digital inclusion, which NDIA defines as including access to affordable, robust broadband internet service; internet-enabled devices that meet the needs of the user; digital literacy training; quality technical support; and applications and online content designed to enable and encourage self-sufficiency, participation, and collaboration.[49] Digital equity issues vary by region, and, as a result, so too does the work that state and local governments are doing to address them.[50]

Example: Michigan

The Detroit Department of Innovation and Technology, a department within the City of Detroit government, envisions making its efforts a national model for digital inclusion. According to Joshua Edmonds, Detroit Director of Digital Inclusion

> The recipe for successful digital inclusion in every city boils down to four things: partnerships, funding, engaged residents, and political will. I believe Detroit has every one of those points in excess. I'm excited to build relationships and do something bold.[51]

The Director of Digital Inclusion is to work with the Detroit Department of Innovation and Technology to develop a citywide strategy to expand computer and internet access to Detroiters who lack it, as well as develop methods to track and evaluate progress.[52] The Director is to also work with the city's Office of Development and Grants to identify possible funding.[53]

According to the City of Detroit, action items include a three-pronged approach to bring change to the city by providing internet access, devices, and digital skills to residents (see **Table 1**).

Table 1. Detroit Digital Inclusion Model

Internet Access	Devices	Digital Skills
Hotspot lending at Detroit libraries	Computer labs at churches	Digital skills classes
Low-cost internet options	Low-cost, refurbished devices	
Wi-Fi points		

Source: City of Detroit, "Digital Inclusion Mission," https://detroitmi.gov/node/20466.

Gigabit Broadband Initiatives

The FCC's definition of broadband is 25/3 Mbps, which is sufficient for activities such as telecommuting and streaming high definition video.[54] However, higher speeds—such as gigabit

[48] National Digital Inclusion Alliance, *Definitions*, https://www.digitalinclusion.org/definitions/.

[49] Ibid.

[50] Zack Quaintance, "The Quest for Digital Equity," *Government Technology*, March 2018, https://www.govtech.com/civic/The-Quest-for-Digital-Equity.html.

[51] Mayor's Office, "City Hires New Director to Help Close Detroit's Digital Divide," City of Detroit, Detroit, MI, April 10, https://detroitmi.gov/news/city-hires-new-director-help-close-detroits-digital-divide.

[52] Ibid.

[53] "Detroit Hires Director of Digital Inclusion to Boost Computer, Internet Access for Residents," Deadline Detroit, April 10, 2019, https://www.deadlinedetroit.com/articles/22078/detroit_hires_director_of_digital_inclusion_to_boost_computer_internet_access_for_residents.

[54] Federal Communications Commission, *Broadband Speed Guide*, https://www.fcc.gov/consumers/guides/broadband-

speeds—may allow for multiple devices to simultaneously access data-intensive online content through a single network access point. A gigabit[55] connection transmits data at one billion bits per second, which translates to lower latency (i.e., less lag time) when streaming video, video gaming, or using immersive media such as virtual reality.[56]

Example: North Dakota

The state of North Dakota is using a state-run network to provide gigabit access. According to North Dakota Governor Doug Burgum's office, in July 2019, North Dakota became the first state in the nation to deliver one-gigabit service to all K-12 schools within the state.[57] This was the result of an effort announced in March 2018 by the governor for a 100-gigabit upgrade to STAGEnet, which is the state government's closed broadband network. This upgrade allowed for one-gigabit connectivity to all K-12 schools, higher education institutions, and government agencies state-wide.[58] The upgrade was completed in collaboration with the North Dakota Information Technology Department (ITD) and Dakota Carrier Network's 14 owner companies.[59]

Homework Gap

Many schools assign students homework online; however, some students have a difficult time completing these assignments because of lack of access to broadband at home. The cost of broadband service and gaps in its availability create obstacles in urban areas and rural communities alike.[60] As K-12 officials in many state close schools and shift classes and assignments online due to the spread of the new coronavirus (COVID-19), they confront the reality that some students do not have reliable access to the internet at home—particularly those who are from lower-income households.[61]

FCC Commissioner Jessica Rosenworcel stated

> I have heard from students in Texas who do homework at fast food restaurants with fries—just to get a free Wi-Fi signal. I have heard from students in Pennsylvania who make elaborate plans every day to head to the homes of friends and relatives just to be able to get online. I have heard from high school football players in rural New Mexico who linger in the school parking lot after games with devices in the pitch-black dark because it is the

speed-guide.

[55] A gigabit is a thousand megabits.

[56] NCTA, "Is a Gigabit the Same as a Gigabyte?," April 18, 2019, https://www.ncta.com/whats-new/is-a-gigabit-the-same-as-a-gigabyte.

[57] Dakota Carrier Network, "DCN Delivers One-Gigabit Internet Access to North Dakota K-12 Schools," Bismarck, ND, August 21, 2019, https://dakotacarrier.com/dcn-delivers-one-gigabit-internet-access-to-north-dakota-k-12-schools/.

[58] Dakota Carrier Network, "N.D.'s Broadband Leadership Benefits Entire State," Bismarck, ND, May 12, 2018, https://dakotacarrier.com/n-d-s-broadband-leadership-benefits-entire-state/.

[59] Dakota Carrier Network, "DCN Delivers One-Gigabit Internet Access to North Dakota K-12 Schools," Bismarck, ND, August 21, 2019, https://dakotacarrier.com/dcn-delivers-one-gigabit-internet-access-to-north-dakota-k-12-schools/.

[60] Associated Press, "'Homework Gap' Shows Millions of Students Lack Home Internet," NBC News, Hartford, CT, June 10, 2019, https://www.nbcnews.com/news/us-news/homework-gap-shows-millions-students-lack-home-internet-n1015716.

[61] Monica Anderson and Brooke Auxier, *As Schools Close Due to the Coronavirus, Some U.S. Students Face a Digital "Homework Gap,"* Pew Research Center, March 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/.

> only place they can get a reliable connection. These kids have grit. But it shouldn't be this hard. Because today no child can be left offline—developing digital skills is flat-out essential for education and participation in the modern economy.[62]

Example: North Carolina

To help address the homework gap, Caldwell County, NC, has piloted the first program in Western North Carolina to place Wi-Fi access on school buses.[63] The Caldwell Education Foundation, along with Google, spearheaded and funded the program. In addition to Wi-Fi on buses, Chromebooks are available free of charge for any students to use while riding.[64] The school bus initiative allows students in rural areas with long travel times to and from school to do online homework and computer exercises while commuting. Additionally, there are plans to park the Wi-Fi-equipped school buses in key areas, when they are not transporting students, to create Wi-Fi hot spots to enable local resident access to the internet.[65]

Options for Congress

Should Congress choose to consider state broadband initiatives, a variety of potential options would be available.

Hold Hearings on State Broadband Initiatives

Congress has implemented multiple broadband programs at the federal level to help expand broadband access, but state broadband initiatives could provide templates for any future federal broadband programs. Congress may choose to expand aspects of current federal broadband initiatives to incorporate themes states have addressed, or Congress may choose to develop new broadband initiatives. As there is no single broadband initiative that solves the digital divide issue, Congress may hold hearings on state initiatives—to examine their successes and challenges and to consider possible approaches to adopt at the federal level. Additionally, Congress may consider enabling a universal method for states and localities to share ideas with Congress or federal agencies.

Establish Pilot Federal Broadband Initiatives

As state experiences demonstrate, broadband needs can vary, and so can initiatives to address them. Congress may seek to develop one or more pilot broadband initiatives to test the feasibility of different approaches before developing and funding a nationwide program. These pilot initiatives might tie funding to specific goals—such as adoption or digital inclusion—in contrast to federal programs that currently mostly fund broadband deployment.

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[62] Federal Communications Commission, Statement of Commissioner Jessica Rosenworcel Before the Subcommitee on Communications and Technology, Energy and Commerce Committee, "Oversight of the Federal Communications Commission," October 25, 2017, p. 1, https://prodnet.www.neca.org/publicationsdocs/wwpdf/102517rosen.pdf.

[63] Steve Ohnesorge, "Wi-Fi on School Buses? Why Not, Says Caldwell County," WBTV, Caldwell County, NC, July 24, 2016, https://www.wbtv.com/story/32124689/wifi-on-school-buses-why-not-says-caldwell-county/.

[64] Ibid.

[65] Jonathan Greig, "Google's Wi-Fi Connected School Buses Fill Education Gap for Rural US Students," TechRepublic, April 3, 2018, https://www.techrepublic.com/article/googles-wi-fi-connected-school-buses-fill-education-gap-for-rural-us-students/.

Increase the Sustainability of State Broadband Initiatives

Congress may consider providing federal funding and resources for broadband initiatives directly to the states. An infusion of federal funding and resources directed toward state initiatives could result in the expansion and sustainability of state efforts. Attaching federal funding to state broadband initiatives, as well as conducting federal oversight, could aid states in maximizing their potential. As expressed by the Director of Digital Inclusion for the City of Detroit:

> These are examples of how local leadership has called on industry to fill in where the federal government is silent. In Detroit, we have developed public-private partnerships without any government funding, but it's an unsustainable model. We need federal resources to continue our work. If we were to receive additional funding, we could do more robust outreach, and incentivize more localized funding from philanthropic organizations.[66]

Address Duplicative Funding

Although continuing funding from some source would be necessary to build out broadband infrastructure and implement broadband initiatives, concerns have been expressed that some areas may receive duplicative funding from multiple broadband programs—potentially resulting in overbuild in some areas while other areas remain unserved. This challenge is highlighted by the implementation of the FCC's Rural Digital Opportunity Fund (RDOF), when the Commission sought to exclude from RDOF any area that the Commission "know[s] to be awarded funding through the U.S. Department of Agriculture's ReConnect Program or other similar federal or state broadband subsidy programs, or those subject to enforceable broadband deployment obligations."[67] As stated by Harold Feld, Senior Vice President at Public Knowledge

> Read broadly, this surprise last-minute change impacts almost every state in the Union. Nearly every state either has its own broadband subsidy program, receives funds under the Department of Agriculture ReConnect program, or receives other federal funding for broadband. Even read narrowly, this would appear to cut off millions of unconnected rural Americans from a program designed explicitly to help them. According to a Pew Report published in December 2019, 35 states have funds that directly subsidize broadband. Numerous other states have funds that might qualify as a 'subsidy' or 'enforceable broadband deployment obligations,' depending on how the FCC Order defines these terms.[68]

Another aspect of the debate regarding duplication of funds and potential overbuild is targeting funding to areas that are truly unserved by broadband, versus directing funds to areas already served by an existing provider. FCC Commissioner Michael O'Rielly stated

> I have been closely following all federal broadband funding programs, including the ReConnect's grant and loan disbursements, to ensure that funds are distributed as efficiently as possible and directed foremost to those communities lacking any broadband

[66] Joshua D. Edmonds, Director of Digital Inclusion, City of Detroit, written testimony before the House Committee on Energy and Commerce, Subcommittee on Communications and Technology, at hearing on "Empowering and Connecting Communities Through Digital Equity and Internet Adoption," January 29, 2020, https://docs.house.gov/meetings/IF/IF16/20200129/110416/HHRG-116-IF16-Wstate-EdmondsJ-20200129.pdf.

[67] Shiva Stella, "Last-Minute Change to FCC Rural Broadband Fund May Ban Grants for Millions of Unconnected Americans," Public Knowledge, January 30, 2020, https://www.publicknowledge.org/press-release/last-minute-change-to-fcc-rural-broadband-fund-may-ban-grants-for-millions-of-unconnected-americans/.

[68] Ibid. The Pew report cited in this quotation is available at https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/12/how-state-policy-shapes-broadband-deployment.

> service, rather than those areas already served by an existing provider. To that end, I have voiced concerns to the Rural Utilities Service (RUS) over the use of scarce ReConnect Program funding to overbuild existing networks, whether built through private investment or via government subsidies. Rather than targeting scarce federal dollars to the truly unserved, the new 90 percent [unserved] threshold will likely lead to subsidized overbuilding and leave the most remote areas without service.[69]

There is a risk that provisions in federal broadband programs that seek to address duplication may unintentionally exclude unserved or underserved communities. In considering policies for future broadband programs, Congress may consider possible conflicts between ensuring that funding is not duplicated and avoiding the exclusion of areas that remain unserved.

Concluding Observations

States have been attempting to bridge the digital divide through their own broadband initiatives. While the majority of federal funding addresses network deployment, state broadband initiatives may demonstrate that other approaches can be complementary. Whether Congress decides to enact new broadband funding or initiatives remains to be seen; however, there appears to be an opportunity for states to share lessons learned from their approaches with Congress and/or federal agencies. Leveraging the wide variety of state policies and initiatives as potential models for federal broadband initiatives could have the potential to help close the digital divide.

[69] Michael O'Rielly, RE: Funding Opportunity Announcement (FOA) and solicitation of applications for second round of the ReConnect Program, Docket: USDA-2017-0002-0001, Federal Communications Commission, Letter to Rural Utilities Service Administrator Chad Rupe, Washington, DC, March 16, 2020, p. 1, https://docs.fcc.gov/public/attachments/DOC-363091A1.pdf.

Appendix. Legislation in the 116th Congress

Aside from annual appropriations legislation, the following are selected bills introduced in the 116th Congress relating to the state broadband issues discussed in this report.

H.R. 1328 (Tonko), introduced on February 25, 2019, as the Advancing Critical Connectivity Expands Service, Small Business Resources, Opportunities, Access, and Data Based on Assessed Need and Demand Act (ACCESS BROADBAND Act), would establish the Office of Internet Connectivity and Growth within NTIA at the Department of Commerce. The Office would provide outreach to communities seeking improved broadband connectivity and digital inclusion; track federal broadband dollars; and facilitate streamlined and standardized applications for federal broadband programs. Referred to the Committee on Energy and Commerce. Passed by the House on May 8, 2019.

H.R. 1508 (Blumenauer), introduced on March 5, 2019, as the Move America Act of 2019, would amend the Internal Revenue Code of 1986 to provide for bonds and credits to finance infrastructure, including rural broadband service infrastructure. Referred to the Committee on Ways and Means.

H.R. 1586 (Butterfield), introduced on March 7, 2019, as the Building Resources Into Digital Growth and Education Act of 2019 (BRIDGE Act of 2019), would establish a digital network technology program within NTIA which would award grants, cooperative agreements, and contracts to eligible institutions to assist such institutions in acquiring, and augmenting use by such institutions of, broadband internet access service to improve the quality and delivery of educational services provided by such institutions. Referred to the Referred to the Subcommittee on Communications and Technology.

H.R. 1693 (Luján), introduced on March 12, 2019, would require the FCC to make the provision of Wi-Fi access on school buses eligible for E-rate support. Referred to the Subcommittee on Communications and Technology.

H.R. 2601 (Peterson), introduced on May 8, 2019, as the Office of Rural Telecommunications Act, would direct the FCC to establish the Office of Rural Telecommunications, which would coordinate with RUS, NTIA, and other federal broadband programs. Referred to the Subcommittee on Communications and Technology.

H.R. 2661 (Tipton), introduced on May 10, 2019, as the Reprioritizing Unserved Rural Areas and Locations for Broadband Act of 2019 (RURAL Broadband Act of 2019), would amend the Rural Electrification Act of 1936 to restrict the use of RUS grants or loans to deploy broadband infrastructure that would overbuild or otherwise duplicate existing broadband networks. Referred to the Subcommittee on Commodity Exchanges, Energy, and Credit.

H.R. 2921 (Kilmer), introduced on May 22, 2019, as the Broadband for All Act, would amend the Internal Revenue Code of 1986 to provide a tax credit to consumers to reimburse a portion of the cost of broadband infrastructure serving limited-broadband districts. Referred to the Committee on Ways and Means.

H.R. 4127 (Luján), introduced on July 30, 2019, as the Broadband Infrastructure Finance and Innovation Act of 2019, would establish a broadband infrastructure finance and innovation program to make available loans, loan guarantees, and lines of credit for the construction and deployment of broadband infrastructure. Referred to the Subcommittee on Communications and Technology.

H.R. 4283 (Pence), introduced on September 11, 2019, as the Broadband Interagency Coordination Act of 2019, would require federal agencies with jurisdiction over broadband deployment to enter into an interagency agreement related to certain types of funding for broadband deployment. Referred to the Subcommittee on Commodity Exchanges, Energy, and Credit.

H.R. 5243 (Meng), introduced on November 21, 2019, as the Closing the Homework Gap Through Mobile Hotspots Act, would establish a mobile hotspot grant program to provide grants to eligible institutions. A grant provided to an eligible institution would be used to provide a hotspot device to an enrolled student, or the family or guardian of an enrolled student, which would be portable and not contain a data limitation. Referred to the Subcommittee on Communications and Technology.

S. 146 (Hoeven), introduced on January 16, 2019, as the Move America Act of 2019, would amend the Internal Revenue Code of 1986 to provide for bonds and credits to finance infrastructure, including rural broadband service infrastructure. Referred to the Committee on Finance.

S. 454 (Cramer), introduced on February 12, 2019, as the Office of Rural Broadband Act, would establish an Office of Rural Broadband within the FCC that would coordinate with RUS, NTIA, and other FCC broadband-related activities. Referred to the Committee on Commerce, Science, and Transportation.

S. 738 (Udall), introduced on March 12, 2019, would require the FCC to make the provision of Wi-Fi access on school buses eligible for E-rate support. Referred to the Committee on Commerce, Science, and Transportation.

S. 1046 (Cortez Masto), introduced on April 4, 2019, as the Advancing Critical Connectivity Expands Service, Small Business Resources, Opportunities, Access, and Data Based on Assessed Need and Demand (ACCESS BROADBAND Act), would establish the Office of Internet Connectivity and Growth within NTIA at the Department of Commerce. The Office would provide outreach to communities seeking improved broadband connectivity and digital inclusion, track federal broadband dollars, and facilitate streamlined and standardized applications for federal broadband programs. Referred to the Committee on Commerce, Science, and Transportation.

S. 1167 (Murray), introduced April 11, 2019, as the Digital Equity Act of 2019, would establish an NTIA state-based and competitive grant programs to support national digital inclusion, digital equity, and broadband adoption programs. Referred to the Committee on Commerce, Science, and Transportation.

S. 1294 (Wicker), introduced on May 2, 2019, as the Broadband Interagency Coordination Act of 2019, would require federal agencies with jurisdiction over broadband deployment to enter into an interagency agreement related to certain types of funding for broadband deployment. Placed on Senate Legislative Calendar under General Orders.

S. 2018 (Collins), introduced on June 27, 2019, as the American Broadband Buildout Act of 2019, would provide federal matching funding for state-level broadband programs. Referred to the Committee on Commerce, Science, and Transportation.

S. 2344 (Peters), introduced on July 30, 2019, as the Broadband Infrastructure Finance and Innovation Act of 2019, would establish a broadband infrastructure finance and innovation program to make available loans, loan guarantees, and lines of credit for the construction and deployment of broadband infrastructure. Referred to the Committee on Commerce, Science, and Transportation.

S. 2385 (Wyden), introduced on July 31, 2019, as the Broadband Internet for Small Ports Act, would amend the Rural Electrification Act of 1936 to improve access to broadband telecommunications services in rural areas, including by encouraging the provision of broadband loans and grants. Referred to the Committee on Agriculture, Nutrition, and Forestry.

S. 3094 (Merkley), introduced on December 18, 2019, as the Community Broadband Mapping Act, would authorize the Rural Utilities Service to make grants to government or telecommunications entities that serve a rural area (with less than 25,000 population) to foster data collection about where broadband infrastructure is located and which homes have non-satellite broadband service. Referred to the Committee on Agriculture, Nutrition, and Forestry.

S. 3362 (Van Hollen), introduced on February 27, 2020, as the Homework Gap Trust Fund Act, would establish the Homework Gap Trust Fund, administered by the Federal Communications Commission (FCC), to provide funding for measures to close the digital divide and promote digital equality with respect to school-aged children. Referred to the Committee on Commerce, Science, and Transportation.

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