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The Digital Divide: What Is It, Where Is It, and Federal Assistance Programs

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SUMMARY

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The Digital Divide: What Is It, Where Is It, and Federal Assistance Programs

As the Coronavirus Disease 2019 (COVID-19) pandemic began to unfold, many federal, local, and state governments, in addition to large and small businesses, implemented remote working or distance learning options to help abate the spread of the virus. As these decisions were made, some of the population had the option and the capability to shift activities online, while others did not. The digital divide has been used to characterize a gap between those Americans who have access to telecommunications and information technologies and those who do not. One subset of the digital divide debate concerns access to high-speed internet, also known as broadband. Broadband is provided by a variety of technologies (e.g., cable, telephone wire, fiber, satellite, and mobile and fixed wireless) that give users the ability to send and receive data at volumes and speeds that support a wide range of applications, including voice communications, entertainment, telemedicine, distance education, telework, ecommerce, civic engagement, public safety, and energy conservation.

Broadband technologies are currently being deployed, primarily by the private sector, throughout the United States. While the number of new broadband subscribers continues to grow, in general, rural areas—and tribal areas in particular—tend to lag behind urban and suburban areas in broadband deployment and the speed of service offered. Some policymakers, believing that disparities in broadband access across American society could have adverse economic and social consequences on those left behind, assert that the federal government should play a more active role to address the "digital divide" in broadband access, particularly in light of the COVID-19 pandemic, which further revealed discrepancies in broadband availability and accessibility.

Federal support for broadband infrastructure occurs mainly through the Universal Service Fund (USF) programs under the Federal Communications Commission (FCC) and the broadband and telecommunications programs at the Rural Utilities Service (RUS) of the U.S. Department of Agriculture (USDA). The USF, which was originally designed to ensure rural, high-cost areas have access to voice service, is undergoing a major transition, which is targeted to the deployment, adoption, and utilization of both fixed and mobile broadband. As currently designed, the USF consists of four programs: the High Cost/Connect America Fund Program; the Schools and Libraries Program; the Rural Health Care Program; and the Low Income (Lifeline) Program. While the overall purpose of each program is to help ensure the universal availability of telecommunications and broadband services, each program addresses specific aspects of that goal to fulfill the universal service mandate and help to close the digital divide. The USDA, through its Rural Utilities Service, administers five programs that provide loans and grants to increase access to broadband service in rural areas. These programs include the Community Connect Program, the ReConnect Program, the Rural Broadband Access Program, the Telecommunications Infrastructure Program, and the Distance Learning and Telemedicine Program.

Funding for the USF does not come from appropriations, but from a mandatory fee on telecommunications carriers that provide interstate service and on certain other providers of telecommunications services. The fee is based on a percentage of the providers' end-user interstate and international telecommunications revenues. Approximately $8.3 billion from the USF was disbursed in 2019, with all 50 states, the District of Columbia, and all territories receiving some benefit. Congress reauthorized and modified the RUS broadband programs in the Agriculture Improvement Act of 2018 (P.L. 115-334). In recent years, Congress has provided additional funding for the RUS broadband programs. Specifically, Congress provided $600 million for the ReConnect Program in the Consolidated Appropriations Act, 2018 (P.L. 115-141); in the Consolidated Appropriations Act, 2019 (P.L. 116-6) Congress provided another $550 million for ReConnect; and in the Coronavirus Aid, Relief, and Economic Security Act (CARES Act, P.L. 116-136, Division B, Title I, §11004) Congress provided an additional $100 million for ReConnect grants.

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Introduction

The internet became publicly available in the 1990s and has become essential for accessing and carrying an increasing volume of digital information critical to everyday life (e.g., job applications and government forms). Broadband is high-speed internet access that is faster than traditional dial-up access, always on, and relies on high-speed transmission technologies, such as

- Digital Subscriber Line (DSL),
- Cable modem,
- Fiber optic cable,
- Wireless,
- Satellite, and
- Broadband over Powerlines (BPL).[1]

Broadband is currently deployed throughout the United States, primarily by the private sector. While the number of new broadband subscribers continues to grow, studies and data indicate that the rate of broadband deployment in urban/suburban and high-income areas is outpacing deployment in rural and low-income areas.[2]

The term "digital divide" is used to describe the gap between those who have adequate broadband internet access and those who do not.[3] The Telecommunications Act of 1996 (P.L. 104-104) acknowledged the digital divide, with Section 706(a) directing the Federal Communications Commission (FCC) to encourage the deployment on a reasonable and timely basis of advanced telecommunications services to all Americans. Additionally, Section 254 of the act provided for universal service support to further improve access to these services.

This report discusses the concept of the digital divide, the status of broadband availability in the United States, and the federal programs that provide funding to support broadband infrastructure deployment and adoption—the Universal Service Fund (USF) programs under the FCC, the broadband and telecommunications programs at the Rural Utilities Service (RUS) of the U.S. Department of Agriculture, and the National Telecommunications and Information Administration (NTIA) within the Department of Commerce (DOC).

Status of Broadband in the United States

Prior to the late 1990s, Americans at home accessed the internet at maximum speeds of 56 kilobits per second by using a dial-up method to reach an Internet Service Provider over the same copper telephone lines used for traditional voice service. A relatively small number of businesses

[1] 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 power lines to deliver broadband to consumers. For further information, see FCC, "Types of Broadband Connections," June 23, 2014, https://www.fcc.gov/general/types-broadband-connections.

[2] The Office of Management and Budget (OMB) defines nonmetropolitan (rural) areas as areas with a population of fewer than 50,000 persons, and not economically tied to a metropolitan area. See https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural/.

[3] The term "digital divide" can also refer to international disparities in access to communications and information technology. This report focuses on domestic issues only.

and institutions used broadband or high-speed[4] connections through the installation of special "dedicated lines," typically provided by their local telephone company. Starting in the 1990s, cable television companies began offering cable modem broadband service to homes and businesses, while telephone companies were offering DSL service. Growth in broadband service has been steep, rising from 2.8 million high-speed lines reported as of December 1999 to 441 million connections as of December 2018.[5]

The FCC has set a current speed benchmark of 25 megabits per second (Mbps) (download speed)/3 Mbps (upload speed) as the measure by which it determines whether a fixed service provides advanced telecommunications capability. **Table 1** depicts advanced telecommunications capability by types of broadband technologies.

Table 1. Percentage of Broadband Technologies That Offer Advanced Telecommunications Capability

Speed Measured in Megabits per second (Mbps)

	Fixed connections at least 25/3 Mbps	Residential fixed connections at least 25/3 Mbps
Cable modem	75.8%	75.9%
DSL	5.8%	5.9%
Fiber	16.6%	16.5%
All other	1.8%	1.6%

Source: Federal Communications Commission, *Internet Access Services: Status as of December 31, 2018*, released September 2020, pp. 19-22, available at https://docs.fcc.gov/public/attachments/DOC-366980A1.pdf.

Notes: 25/3 means 25 Mbps download/3 Mbps upload. Totals may not sum due to rounding. Fixed means non-mobile and delivered through a stationary connection. Connections include both residential and business connections.

Fixed Broadband Availability

FCC data indicate where fixed broadband service is and is not being deployed.[6] **Table 2** shows percentages of Americans in urban, rural, and tribal areas with access to terrestrial fixed broadband at speeds of 25 Mbps/3Mbps, as presented in the FCC's *2020 Broadband Deployment Report*.[7] According to the most recent FCC deployment data, as of December 2018, 94.4% of the overall population had access to fixed terrestrial broadband at speeds of at least 25 Mbps/3 Mbps. **Table 3** shows the percentage of Americans as of December 2018 with access to fixed 25 Mbps/3Mbps terrestrial broadband by state.

[4] Dial-up internet is the only connection that is not considered high speed.

[5] Federal Communications Commission, *Internet Access Services: Status as of December 31, 2018*, released September 2020, p. 2, available at https://docs.fcc.gov/public/attachments/DOC-366980A1.pdf.

[6] See Federal Communications Commission, *Fixed Broadband Deployment*, available at https://broadbandmap.fcc.gov/ .

[7] Federal Communications Commission, *2020 Broadband Deployment Report*, June 8, 2020, pp. 1, 186, available at https://docs.fcc.gov/public/attachments/FCC-20-50A2.pdf.

Table 2. Percentage of Americans with Access to Fixed Terrestrial Broadband at Minimum Speed of 25 Mbps/3 Mbps

	2013	2014	2015	2016	2017	2018
All U.S.	83.6%	89.4%	89.9%	91.9%	93.5%	94.4%
Urban	92.3%	96.4%	96.7%	97.7%	98.3%	98.5%
Rural	47.6%	60.4%	61.5%	67.8%	73.6%	77.7%
Tribal	37.1%	57.2%	57.8%	63.1%	67.9%	72.3%

Source: Federal Communications Commission, *2020 Broadband Deployment Report Appendix*, April 24, 2020, pp. 1, 186, available at https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf.

Table 3. Percentage of Americans with Access to Fixed Terrestrial Broadband by State

(December 2018 data, minimum speed of 25 Mbps/3 Mbps)

	% of population with access, all areas	% of population with access, rural areas	% of population with access, urban areas
United States	**94.4%**	**77.7%**	**98.5%**
Alabama	87.3	72.2	97.9
Alaska	83.8	59.8	98.3
Arizona	88.7	46.9	94.6
Arkansas	78.7	59.1	94.4
California	98.1	79.5	99.3
Colorado	94.9	76.3	98.4
Connecticut	99.2	99.5	99.1
Delaware	97.8	95.7	99.1
District of Columbia	98.1	N/A	98.1
Florida	96.6	80.3	98.3
Georgia	93.6	80.3	97.9
Hawaii	96.6	76.6	98.6
Idaho	84.9	58.1	97.1
Illinois	95.3	67.6	98.9
Indiana	94.1	80.3	99.4
Iowa	93.2	84.2	98.3
Kansas	92.5	77.0	97.8
Kentucky	93.3	84.9	99.2
Louisiana	87.0	62.1	96.1
Maine	95.4	92.8	99.5
Maryland	97.4	92.9	98.1
Massachusetts	97.9	92.5	98.4
Michigan	94.7	82.2	99.0

	% of population with access, all areas	% of population with access, rural areas	% of population with access, urban areas
Minnesota	96.2	88.1	99.1
Mississippi	78.8	61.1	97.0
Missouri	90.2	69.8	99.0
Montana	87.1	74.1	98.1
Nebraska	89.5	65.2	98.4
Nevada	94.0	49.4	97.4
New Hampshire	96.0	92.1	98.6
New Jersey	99.2	98.2	99.3
New Mexico	84.8	50.1	95.9
New York	98.8	90.7	100.0
North Carolina	95.5	86.8	99.8
North Dakota	94.0	89.5	97.7
Ohio	95.3	81.2	99.4
Oklahoma	83.8	61.0	95.8
Oregon	93.7	74.5	98.7
Pennsylvania	95.4	84.8	98.2
Rhode Island	98.5	97.6	98.6
South Carolina	89.7	75.0	97.2
South Dakota	91.6	82.3	99.3
Tennessee	92.2	79.7	98.6
Texas	94.1	75.3	97.9
Utah	94.8	67.9	98.7
Vermont	92.2	88.1	98.7
Virginia	92.5	75.9	97.9
Washington	95.4	79.3	98.8
West Virginia	82.4	70.3	95.1
Wisconsin	92.9	77.3	99.7
Wyoming	86.8	65.9	99.5

Source: Federal Communications Commission, *2020 Broadband Deployment Report*, April 24, 2020, Appendix 1, available at https://docs.fcc.gov/public/attachments/FCC-20-50A2.pdf.

Another broadband availability metric is the extent to which there are multiple broadband providers offering competition and consumer choice. Typically, multiple providers are more prevalent in urban than in rural areas or tribal areas (see **Table 4**). Percentages may be overstated because broadband providers report data at the census block level, and may not offer service to every home in every block in which they report service.

Table 4. Percentage of Americans with Multiple Options for Fixed Terrestrial Broadband (25/3 Mbps)

	No provider	1 provider	2 providers	3 or more
Nationwide	0.04%	0.16%	5.62%	94.18%
Urban	0.02%	0.15%	1.94%	97.89%
Rural	0.12%	0.20%	20.75%	78.92%
Tribal	1.46%	0.58%	23.70%	74.25%

Source: CRS, derived from Federal Communications Commission Fixed Broadband Deployment Map, data as of June 2019 (https://broadbandmap.fcc.gov/).

Notes: Broadband providers report data at the census block level, and may not offer service to every home in every block in which they report service. The calculations used treat every location as having service, and may therefore overestimate broadband coverage, particularly in areas with large census blocks.

Fixed Broadband Adoption

In contrast to broadband *availability*, which refers to whether or not broadband service is offered, broadband *adoption* refers to the extent to which an individual uses fixed broadband.[8] Pew Research Center reports that 10% of adults did not use the internet in 2019, down from 48% in 2000.[9] The most recent survey data from the Pew Research Center show that populations continuing to have lower rates of internet use include people with low incomes, seniors, the less-educated, and households in rural areas (see **Table 5**).[10]

Table 5. Percentage of U.S. Adults Who Did Not Use the Internet in 2019

U.S. Adults	10%
Men	10%
Women	9%
White	8%
Black	15%
Hispanic	14%
18-29 age	0%
30-49	3%
50-64	12%
65+	27%
Less than $30K income	18%
$30K-$50K	7%
$50K-$75K	3%
$75K+	2%

[8] For more information, please see CRS Report R46108, *Demand for Broadband in Rural Areas: Implications for Universal Access*, by Brian E. Humphreys.

[9] Pew Research Center, *10% of Americans Don't Use the Internet. Who Are They?*, April 22, 2019, survey conducted January 8-February 7, 2019, available at https://www.pewresearch.org/fact-tank/2019/04/22/some-americans-dont-use-the-internet-who-are-they/.

[10] Ibid.

Less than high school	29%
High school	16%
Some college	5%
College or higher	2%
Urban	9%
Suburban	6%
Rural	15%

Source: Pew Research Center, *10% of Americans Don't Use the Internet. Who Are They?*, April 22, 2019, survey conducted January 8–February 7, 2019, available at https://www.pewresearch.org/fact-tank/2019/04/22/some-americans-dont-use-the-internet-who-are-they/.

Fixed Broadband in Rural and Tribal Areas[11]

While the number of new broadband subscribers continues to grow, the rate of broadband deployment in urban areas has outpaced deployment in rural and tribal areas. In general, rural areas—and tribal areas in particular—tend to lag behind urban and suburban areas in broadband deployment and the speed of service offered.

For example

- According to the FCC's *2020 Broadband Deployment Report*, "We find that Tribal lands continue to face significant obstacles to broadband deployment. As reflected in both the 2018 Report and 2019 Report, deployment of advanced telecommunications capability on certain Tribal lands, particularly rural Tribal lands, lags behind deployment in other, non-Tribal areas."[12]
- According to the FCC's *2020 Broadband Deployment Report*, "Section 706(a) mandates that we continue to promote deployment of advanced telecommunications capability to all Americans, and even though 'remarkable progress has been made[,]' it remains the case that 'many people, particularly rural and Tribal areas, do not enjoy the fastest possible broadband speeds or even access to advanced telecommunications services.'"[13]

The comparatively lower population density and more difficult topography of rural and tribal areas contributes to the relative lack of broadband deployment in contrast to more highly populated urban and suburban areas. Particularly for wireline broadband technologies—such as cable modem and fiber—greater geographical distance between customers results in the inability to spread costs over a larger subscriber base. Thus, there is often less incentive for companies to invest in broadband in rural areas than in urban areas. An additional added cost for remote areas can be the expense of "backhaul" (e.g., the "middle mile"). Backhaul refers to the installation of a dedicated line that transmits a signal to and from an internet backbone, which is typically located in or near an urban area.

[11] For more information on rural broadband and broadband programs at the Rural Utilities Service, see CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*, by Lennard G. Kruger and Alyssa R. Casey.

[12] Federal Communications Commission, *2020 Broadband Deployment Report*, April 24, 2020, p. 11, available at https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf.

[13] Ibid., pp. 4-5.

COVID-19 and the Digital Divide

The Coronavirus Disease 2019 (COVID-19) pandemic compelled many federal, local, and state governments, in addition to large and small businesses, to implement policies for remote working or distance learning options to help mitigate the spread of the virus. While some portion of the population had the option and the capability to shift activities online, others did not, further revealing discrepancies in broadband access.

As an example, in spring 2020 the COVID-19 pandemic drove nearly 125,000 schools in the United States to close their doors—tasking 55 million teachers and students with quickly adapting to distance learning in the final weeks of the school year.[14] According to the Pew Research Center's April 7-12, 2020, survey of U.S. adults, some parents reported worries about how their children would be able to complete their schoolwork from home. One in five of the surveyed parents said it was at least somewhat likely their children would not be able to complete their schoolwork because they did not have access to a computer at home (21%) or would have to use public Wi-Fi to finish their schoolwork because there was not a reliable internet connection at home (22%).[15]

The divide between students that have access to adequate broadband at home and those that do not is known as the Homework Gap. As many schools shifted classes to online instruction at home, some have experienced challenges due in part to the varying levels of access to broadband. For instance, as instruction moved online in the Saranac Central, NY, school district, some teachers and students did not have adequate internet access at home in the mountainous Adirondack region. As a result, some teachers and students accessed wireless networks from public library parking lots.[16] Additionally, some schools may have the resources to lend devices, such as laptops or tablets, along with hotspots, to provide broadband to students; but others may not—which is likely to place those students at a disadvantage to their peers who have connectivity.

Congress enacted the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) (P.L. 116-136) to provide additional funding to help address concerns that arose from the pandemic. Included among the provisions in the CARES Act are those that attempted to address discrepancies in broadband access that were magnified by social distancing requirements enacted due to the pandemic. For example, the RUS was given $25 million for the Distance Learning and Telemedicine (DLT) Program and $100 million for grants under the ReConnect broadband pilot program.[17]

The FCC has taken a number of actions to help meet the broadband and telecommunications connectivity needs exacerbated by the COVID-19 pandemic. The FCC has, to a large extent, turned to its four Universal Service Fund programs to address the nation's growing connectivity

[14] NCTA—The Internet and Television Association, "U.S. Cable Industry Announces New 'K-12 Bridge to Broadband' Initiative to Help Connect Students to Broadband for Remote and Hybrid Learning," press release, September 10, 2020, available at https://www.ncta.com/media/media-room/k12bridgetobroadband.

[15] 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, available at 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/.

[16] Elaine S. Povich, *Virtual Learning Means Unequal Learning*, Pew Charitable Trusts, July 29, 2020, available at https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/07/29/virtual-learning-means-unequal-learning.

[17] See CRS Insight IN11391, *USDA Rural Development and COVID-19: Supplemental Funding and Agency Actions*, by Alyssa R. Casey.

needs.[18] Initiatives taken include increasing program funding levels, temporarily lifting or suspending program recertification and reverification rules, waving gift rules, and enacting temporary licensing waivers, among others.[19]

Broadband Access and the Federal Role

Section 706 of the Telecommunications Act of 1996

Section 706(a) of the Telecommunications Act of 1996 (P.L. 104-104) directs the FCC to encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.[20] Section 706(b) is the follow-up to that directive and requires the FCC to regularly initiate an inquiry assessing the availability of broadband to all Americans and to determine whether broadband "is being deployed to all Americans in a reasonable and timely fashion." If the determination is negative, the act directs the FCC to "take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market."

Since 1999, the FCC has issued 13 reports on Section 706, each providing a snapshot and assessment of broadband deployment.[21] To help establish whether broadband is being deployed in "a reasonable and timely fashion," the FCC has set a minimum broadband speed that essentially serves as the benchmark the FCC uses to define what it considers broadband service for the purposes of its Section 706 determination. In 2015 the FCC, citing changing broadband usage patterns and multiple devices using broadband within single households, raised its minimum fixed broadband benchmark speed from 4 Mbps (download)/1 Mbps (upload) to 25 Mbps/3 Mbps. The designation of minimum benchmark speeds for fixed broadband, and how mobile broadband speeds should be benchmarked and factored into an overall determination of broadband deployment, has proven controversial.[22]

On April 20, 2020, the FCC adopted and released its latest 706 report, the 2020 Broadband Deployment Report.[23] In the 2020 report, the FCC concluded that the speed benchmark of 25/3 Mbps continued to be the appropriate measure to assess whether fixed services provide advanced telecommunications capability. Moreover, for a third consecutive year, the FCC concluded that advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion. This determination was based on evaluating progress—comparing deployment in

[18] See the section entitled "The Universal Service Fund Programs" below for a discussion of the four USF programs.

[19] For additional information on actions taken by the FCC, including those under the USF programs, see Universal Service Administrative Company, *COVID-19 Response*, https://www.usac.org/about/usacs-covid-19-response/; Federal Communications Commission, *Keep Americans Connected*, https://www.fcc.gov/keep-americans-connected; and CRS In Focus IF11520, *The Universal Service Fund and COVID-19: The FCC and Industry Response*, by Angele A. Gilroy.

[20] Section 706(d)(1) defines "advanced telecommunications capability" as "high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology."

[21] An archive of notices of inquiry and released broadband progress reports is available at https://www.fcc.gov/general/archive-released-broadband-progress-notices-inquiry.

[22] See CRS Report R45039, *Defining Broadband: Minimum Threshold Speeds and Broadband Policy*, by Lennard G. Kruger.

[23] Federal Communications Commission, *2020 Broadband Deployment Report*, April 20, 2020, available at https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf.

the present year to deployment in previous years. According to the 2020 report, as the Commission has previously found

> [A]nalyzing progress to determine whether deployment is occurring in a reasonable and timely fashion is the approach that is most consistent with the language of section 706, as the analysis of such progress enables the Commission to determine whether advanced telecommunications capability "is being deployed" in the manner that section 706 requires. The use of the present progressive tense—"is being deployed"—as well as the language requiring an evaluation of whether that deployment is "reasonable and timely" indicates that Congress intended that the Commission evaluate the current state of deployment to all Americans, not a rigid requirement that each and every American be served at this moment.[24]

The latest 706 determination was approved by the three Republican FCC commissioners, with the remaining two Democratic commissioners dissenting. According to FCC Commissioner Rosenworcel's dissent

> This report is baffling. We are in the middle of a pandemic. So much of modern life has migrated online. As a result, it has become painfully clear there are too many people in the United States who lack access to broadband. In fact, if this crisis has revealed anything, it is the hard truth that the digital divide is very real and very big. But you'll find no evidence acknowledging that in today's Broadband Progress Report from the Federal Communications Commission. Instead, you'll find a glowing assessment that all is well. According to this rosy report the nation's broadband efforts are all good. They are proceeding in a reasonable and timely fashion and they are reaching all Americans. This is just not right.[25]

On August 19, 2020, the Commission released the Sixteenth Broadband Deployment Report Notice of Inquiry (Notice), inviting all interested parties to submit comments and information to guide the FCC's analysis in the 2021 Broadband Deployment Report.[26] The comment and reply periods are closed.

Broadband Access Data and Mapping

Improving the quality of broadband deployment data has become an issue of congressional interest, as policymakers recognize that more accurate broadband availability maps could help ensure that federal broadband programs target unserved areas of the country that are most in need of assistance. Since the initial deployment of broadband in the late 1990s, two federal agencies have implemented broadband availability data collection and mapping initiatives: NTIA and the FCC.

National Telecommunications and Information Administration

In 2008, the Broadband Data Improvement Act (P.L. 110-385) directed the Department of Commerce to establish a state broadband data and development grant program, and to use the data gathered by the states to create a broadband inventory map. The NTIA's State Broadband Initiative (SBI),[27] which was funded by the American Recovery and Reinvestment Act of 2009

[24] Ibid., p. 4.

[25] Ibid., p. 52.

[26] Federal Communications Commission, *Sixteenth Broadband Deployment Report Notice of Inquiry*, August 19, 2020, available at https://docs.fcc.gov/public/attachments/FCC-20-112A1.pdf.

[27] P.L. 110-385, §106.

(ARRA, P.L. 111-5), was used to develop the first National Broadband Map, which was launched in 2011. In 2015, the SBI program ended, collecting its last data as of June 30, 2014. The National Broadband Map was decommissioned on December 21, 2018, due to the age of the data. Mapping responsibility shifted to the FCC.[28]

The Consolidated Appropriations Act, 2018 (P.L. 115-141) appropriated $7.5 million to NTIA to develop a National Broadband Availability Map (NBAM) to determine which parts of the country remain unconnected. The Consolidated Appropriations Act, 2019 (P.L. 116-6), provided an additional $7.5 million to NTIA to maintain the NBAM. In October 2019, NTIA released a pilot version of the NBAM. The map is made available exclusively to state and federal partners, as it includes non-public data that may be business sensitive or have licensing restrictions.[29]

Federal Communications Commission

The FCC requires fixed broadband providers to submit data twice a year on where they provide broadband service. The FCC uses that data to populate and update the current Fixed Deployment Broadband Map.[30] One of the major criticisms of the FCC's Fixed Deployment Broadband Map is that broadband availability can be overstated because fixed broadband deployment data are collected at the census block level.[31] A census block is considered served if there is broadband service (or the strong potential of broadband service) to at least one location within the block. This may be especially problematic in rural areas, which have large census blocks and may be considered served if, for example, a single neighborhood in that large census block has broadband service.

Some Members of the 116th Congress have questioned the accuracy and completeness of the data used by the FCC to develop the Fixed Deployment Broadband Map and called for the FCC to improve its broadband data collection and reporting initiative.[32] On August 1, 2019, the FCC adopted a Report and Order introducing a new process, called the Digital Opportunity Data Collection (DODC), for collecting fixed broadband data.[33]

Broadband Deployment Accuracy and Technology Availability Act

On March 23, 2020, the Broadband Deployment Accuracy and Technological Availability Act (Broadband DATA Act) was signed into law (P.L. 116-130). This law requires the FCC to change the way it collects, verifies, and reports broadband data. Specifically, it directs the FCC to

[28] Rich Mansfield, "Decommissioning of the National Broadband Map and Its APIs," FCC, December 7, 2018, https://www.fcc.gov/news-events/blog/2018/12/07/decommissioning-national-broadband-map-and-its-apis.

[29] Andy Spurgeon, "NTIA Releases New Broadband Availability Map Pilot for Policymakers," National Telecommunications and Information Administration, October 2, 2019, https://www.ntia.doc.gov/blog/2019/ntia-releases-new-broadband-availability-map-pilot-policymakers.

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

[31] Next Century Cities, "Discussion Guidelines—Broadband Mapping," February 28, 2019, available at https://nextcenturycities.org/discussion-guidelines-broadband-mapping/.

[32] Letter from Senators Shelley Moore Capito, Jerry Moran, Brian Schatz, and Jon Tester, to The Honorable Ajit Pai, Federal Communications Commission Chairman, July 11, 2019, https://www.tester.senate.gov/files/Letters/071019_Letter%20to%20FCC%20on%20Broadband%20Mapping%20and%20Shapefiles.pdf.

[33] Federal Communications Commission, *In the Matter of Establishing the Digital Opportunity Data Collection*, Report and Order and Second Further Notice of Proposed Rulemaking, August 1, 2019, https://docs.fcc.gov/public/attachments/FCC-19-79A1.pdf.

- Collect and disseminate granular broadband service availability data from wired, fixed-wireless, satellite, and mobile broadband providers. To do this, 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) as the vehicle for reporting broadband service availability data.
- Put forth specified requirements for service availability data collected from broadband providers, and create a challenge process to enable the submission of independent data challenging the accuracy of FCC broadband maps.
- Conduct regular audits of information submitted by telecommunications providers, and develop a process whereby entities or individuals may submit information about the deployment and availability of broadband service to verify and supplement information submitted by providers.
- Provide data collection and submission assistance to Indian tribes; small service providers; consumers; and state, local, and tribal governments.

To implement the provisions of the Broadband DATA Act, the FCC has asked that Congress appropriate funding specifically for that purpose. In testimony before a June 24, 2020, hearing in the Senate Committee on Commerce, Science, and Transportation on FCC oversight, FCC Chairman Ajit Pai stated that the Broadband DATA Act prohibits the FCC from tapping the Universal Service Administrative Company[34] for the new mapping effort, and the FCC lacks the $65 million it will need to implement the act's requirements.[35] The House passed the following bills that would provide funding to implement the Broadband DATA Act:

- Division G Title I of the Moving Forward Act (H.R. 2), introduced on June 11, 2020, included $24,000,000;
- Division D Titles V and IX of Defense, Commerce, Justice, Science, Energy and Water Development, Financial Services and General Government, Labor, Health and Human Services, Education, Transportation, Housing, and Urban Development Appropriations Act, 2021 (H.R. 7617), introduced on July 16, 2020, included $73,000,000; and
- Division A Title V of The Heroes Act (H.R. 8406), introduced on September 29, 2020, included $24,000,000.

Federal Broadband Programs

Federal support for broadband deployment occurs primarily through the USF programs administered by the FCC, and the broadband and telecommunications programs of the RUS. Historically, the NTIA provided funding for broadband deployment under the American Recovery and Reinvestment Act of 2009 (P.L. 111-5).

A number of other federal programs also provide subsidies to expand broadband. On January 21, 2020, NTIA released an updated guide that provides summary and contact information for a

[34] The Universal Service Administrative Company was established in 1997 by the FCC to administer the Universal Service Fund programs. See "The Universal Service Fund Programs."

[35] John Eggerton, *Pai to Hill: FCC Will Vote on Broadband Mapping Item in July*, Multichannel News, June 24, 2020, available at https://www.multichannel.com/news/pai-to-hill-fcc-will-vote-on-broadband-mapping-item-in-july.

variety of federal programs that may fund projects involving broadband infrastructure, adoption, access, planning, or research.[36]

The Universal Service Concept and the FCC

Since its creation in 1934, the FCC has been tasked with "mak[ing] available, so far as possible, to all the people of the United States ... a rapid, efficient, Nation-wide, and world-wide wire and radio communications service with adequate facilities at reasonable charges."[37] This mandate led to the development of what has come to be known as the universal service concept.

The universal service concept, as originally designed in the Communications Act of 1934, called for the establishment of policies to ensure that telecommunications services are available to all Americans, including those in rural, insular, and high cost areas, by ensuring that rates remain affordable. Over the years this concept has evolved and expanded, fostering the development of various FCC policies and programs that target both providers of and subscribers to telecommunications and, more recently, broadband services. The Telecommunications Act of 1996 (P.L. 104-104) codified the long-standing commitment by U.S. policymakers to ensure universal service in the provision of telecommunications services, and directed the FCC to establish a federal USF to meet the expanded objectives and principles contained in the act. Established in 1997, the USF is administered by the Universal Service Administrative Company (USAC), an independent not-for-profit organization, under the direction of the FCC.

Funding for the USF comes from mandatory fees assessed on telecommunications carriers that provide interstate service and certain other providers of telecommunications services. The fees are based on a percentage of the carriers' end-user interstate and international telecommunications revenues; the USF receives no federal revenues. Carriers may, but are not required to, pass these charges directly to their subscribers. The USAC disbursed approximately $8.3 billion from the USF in 2019, with all 50 states, the District of Columbia, and all territories receiving some benefit.[38]

Universal Service and Broadband

One of the major policy debates surrounding universal service in the last decade was whether access to advanced telecommunications services (i.e., broadband) should be incorporated into universal service objectives. The 1996 Telecommunications Act authorized the federal-state Joint Board[39] and tasked it with defining the services that should be included in the definition of services to be eligible for universal service support. The Joint Board's recommendation, which was adopted by the FCC in May 1997, largely limited the definition to voice telecommunications services. Some policymakers expressed concern that the FCC-adopted definition was too limited and did not take into account the importance and growing acceptance of advanced services such

[36] National Telecommunications and Information Administration, BroadbandUSA, *Broadband Funding Guide*, January 21, 2020, available at https://broadbandusa.ntia.doc.gov/sites/default/files/bbusa_federalfunding_all_200511.pdf. NTIA also provides an online broadband federal funding search tool, available at https://broadbandusa.ntia.doc.gov/new-fund-search.

[37] Communications Act of 1934, as amended, Title I §1 (47 U.S.C. 151).

[38] Universal Service Administrative Company, *2019 Annual Report*, p. 8. Total funding approved for disbursement for the months of January-December 2019, available at https://www.usac.org/about/reports-orders/annual-report/.

[39] In compliance with the 1996 Telecommunications Act (Section 254(a)(1)), the FCC, in March 1996, established a Federal-State Joint Board on Universal Service to make recommendations to implement the universal service provisions of the act. This Joint Board is composed of three FCC Commissioners, four State Utility Commissioners, and a consumer advocate representative.

as broadband and internet access. They pointed to a number of provisions contained in the universal service principles of the 1996 act to support their claim. Specifically, the universal service principle contained in Section 254(b)(2) states, "Access to advanced telecommunications services should be provided to all regions of the Nation." The subsequent principle (b)(3) calls for consumers in all regions of the nation, including "low-income" and those in "rural, insular, and high cost areas," to have access to telecommunications and information services including "advanced services" at a comparable level and a comparable rate charged for similar services in urban areas. Such provisions, they state, dictate that the FCC expand its universal service definition.

The 1996 act does take into consideration the changing nature of the telecommunications sector and allows, if future conditions warrant, for the modification of the universal service definition. Section 254(c) of the act states that "universal service is an evolving level of telecommunications services" and that the FCC is tasked with "periodically" reevaluating this definition, "taking into account advances in telecommunications and information technologies and services." Furthermore, the Joint Board is specifically authorized to recommend "from time to time" to the FCC modifications in the definition of the services to be included for federal universal service support. In November 2007, the Joint Board concluded such an inquiry and recommended that the FCC change the mix of services eligible for universal support. The Joint Board recommended, among other things, that "the universal availability of broadband Internet services" be included in the nation's communications goals and hence be supported by federal universal service funds.[40]

The ARRA called for the FCC to develop, and submit to Congress, a national broadband plan to ensure that every American has "access to broadband capability."[41] In its national broadband plan, *Connecting America: the National Broadband Plan*, the FCC recommended that access to and adoption of broadband be a national goal.[42] Furthermore, the national broadband plan proposed that the USF be restructured to become a vehicle to help reach this goal. In an October 2011 decision, the FCC adopted an Order that calls for the USF to be transformed, in stages, over a multiyear period, from a mechanism to support voice telephone service to one that supports the deployment, adoption, and utilization of both fixed and mobile broadband. This transformation includes the phase-out of the USF's legacy High Cost Program and the creation of a new fund, the Connect America Fund, to replace it, as well as an expansion and modification of the Schools and Libraries, Rural Health Care, and Low Income programs.[43]

The Universal Service Fund Programs

As currently designed, the USF consists of four programs: the High Cost/Connect America Fund Program; the Schools and Libraries Program; the Rural Health Care Program; and the Low Income (Lifeline) Program. While the overall purpose of each program is to help ensure the

[40] The Joint Board recommended: (1) that the FCC expand the definition of those services that qualify for universal service support and (2) the nation's communications goals include the universal availability of mobility services (i.e., wireless), broadband internet services, and voice services at affordable and comparable rates for all rural and nonrural areas. The recommendation is available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07j-4A1.pdf.

[41] American Recovery and Reinvestment Act of 2009, P.L. 111-5, Section 6001 (k)(2)(D).

[42] Federal Communications Commission, *Connecting America: The National Broadband Plan*, March 16, 2010, available at https://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf. For additional information on the National Broadband Plan, see "The National Broadband Plan" below.

[43] For a detailed discussion of this Order and USF transition, see *In the Matter of the Connect America Fund, et al.*, WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161, adopted October 27, 2011, and released November 18, 2011, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-161A1.pdf.

universal availability of telecommunications and broadband services, each program addresses specific aspects of that goal to fulfill the universal service mandate and help to close the digital divide.

The High Cost/Connect America Fund Program

Historically the High Cost Program provided support for eligible telecommunications carriers to help offset the higher-than-average costs of providing voice telephone service in rural, insular, or other high cost areas. This mechanism has been the largest USF program based on disbursements and has been particularly important to rural areas due to the lack of subscriber density often combined with higher costs. The High Cost Program is undergoing a transition from one that primarily supports voice communications to one that supports a broadband platform that enables multiple applications, including voice. The High Cost Program is being phased out in stages and replaced by the Connect America Fund (CAF), which will support the provision of affordable voice and broadband services, both fixed and mobile, in high cost areas. The CAF is designed to eventually replace all of the existing support mechanisms in the High Cost Program. According to data released by USAC, approximately $5.1 billion in funding was disbursed under the High Cost Program in 2019.[44]

Two new programs, the Rural Digital Opportunity Fund (RDOF) and the 5G Fund, have been established as part of the CAF. The FCC, on January 30, 2020, adopted the Report and Order establishing RDOF, a $20.4 billion fund to help subsidize broadband service to high-cost rural areas lacking fixed broadband. Through it, the FCC plans to commit to bringing high-speed fixed broadband service to rural homes and small businesses in two phases. The RDOF Phase I Auction (Auction 904) is a reverse auction[45] in which bidders will compete for up to $16 billion in support, over 10 years, to provide fixed broadband service to unserved high cost rural areas. The Phase I Auction commenced on October 29, 2020. The Phase II Auction is estimated to provide $4.4 billion in subsidies, plus unallocated funds from Phase I. This Phase II Auction will target partially served areas and areas not awarded in the Phase I auction.[46] The FCC has not announced a timeline for the Phase II auction.

The FCC adopted, on October 27, 2020, a report and order (RO) establishing a 5G Fund to support the deployment of 5G mobile wireless services for rural America. The RO is to distribute up to $9 billion over 10 years, through a two-phase reverse auction, to support the deployment of 5G wireless broadband connectivity in rural America.[47] Eligible areas are to be determined based upon data gathered through the FCC's Digital Opportunity Data Collection Proceeding (see "Federal Communications Commission" section above). The 5G Fund builds upon an earlier fund, the Mobility Fund. The Mobility Fund Phase I Auction (Auction 901), held September 27, 2012, distributed $300 million through a reverse auction, to support the provision of 3G or better mobile voice and broadband service to areas lacking such service.[48] The Tribal Mobility Fund

[44] For additional information and data on this program, see Universal Service Administrative Company, *2019 Annual Report*, pp. 8 and 11, available at https://www.usac.org/about/reports-orders/annual-report/ and https:/www.usac.org/high-cost/.

[45] In a reverse auction, the lowest bid, all things being equal, wins the bid.

[46] For additional information on the Rural Digital Opportunity Fund, see https:/www.fcc.gov/auction/904 and CRS Report R46501, *Rural Digital Opportunity Fund: Requirements and Selected Policy Issues*, by Colby Leigh Rachfal.

[47] For additional information on the 5G Fund, see Federal Communications Commission, "FCC Establishes a 5G Fund for Rural America," available at https://www.fcc.gov/document/fcc-establishes-5g-fund-rural-america.

[48] For additional information on Auction 901, see Federal Communications Commission, "Auction 901: Mobility Fund Phase I," available at https://www.fcc.gov/auction/901.

Phase I Auction (Auction 902), held February 25, 2014, distributed an additional $50 million to be used solely for Tribal lands.[49] The 5G Fund is to replace a planned Mobility Fund Phase II, which would have provided $4.5 billion in support over 10 years to areas lacking 4G LTE service.

The Schools and Libraries and Rural Health Care Programs

Congress, through the 1996 act, not only codified but also expanded the concept of universal service to include, among other principles, that elementary and secondary schools and classrooms, libraries, and rural health care providers should have access to telecommunications services for specific purposes at discounted rates. (See §§254(b)(6) and 254(h) of the 1996 Telecommunications Act, 47 U.S.C. 254.) Implementation of these provisions resulted in the establishment of the Schools and Libraries and Rural Health Care Programs.

The Schools and Libraries (E-Rate) Program

Under universal service provisions contained in the 1996 act, elementary and secondary schools and classrooms and libraries are designated as beneficiaries of universal service discounts. Universal service principles detailed in Section 254(b)(6) state, "Elementary and secondary schools and classrooms ... and libraries should have access to advanced telecommunications services." The act further requires in Section 254(h)(1)(B) that services within the definition of universal service be provided to elementary and secondary schools and libraries for education purposes at discounts, that is, at "rates less than the amounts charged for similar services to other parties."

The FCC established the Schools and Libraries Division within USAC to administer the Schools and Libraries or "E (education)-Rate" Program to comply with these provisions. Under this program, eligible schools and libraries[50] receive discounts ranging from 20% to 90% for telecommunications services depending on the poverty level of the school's (or school district's) population and its location in a high cost (i.e., rural) telecommunications area. Two categories of services are eligible for discounts: category one services (telecommunications, telecommunications services, and internet access), and category two services that deliver internet access within schools and libraries (internal connections, basic maintenance of internal connections, and managed internal broadband services). According to data released by USAC, approximately $2 billion in funding was disbursed under the E-Rate Program in 2019.[51]

The Rural Health Care Program

Section 254(h) of the 1996 act requires that public and nonprofit rural health care providers have access to telecommunications services necessary for the provision of health care services at rates comparable to those paid for similar services in urban areas. Subsection 254(h)(1) further specifies that "to the extent technically feasible and economically reasonable" health care providers should have access to advanced telecommunications and information services. The

[49] For additional information on Auction 902, see Federal Communications Commission, Auction 902: Tribal Mobility Fund Phase I, available at https://www.fcc.gov/auction/902.

[50] For a detailed definition of "school" and "library" for the purpose of eligibility requirements, see Universal Service Administrative Company, *School and Library Eligibility*, available at https://www.usac.org/e-rate/applicant-process/before-you-begin/school-and-library-eligibility/.

[51] For additional information and data on this program, see Universal Service Administrative Company, *2019 Annual Report*, pp. 8 and 9, available at https://www.usac.org/about/reports-orders/annual-report/ and https://ww.usac.org/e-rate/.

FCC established the Rural Health Care Division (RHCD) within USAC to administer the Rural Health Care (RHC) Program to comply with these provisions. The goal of the RHC Program is to improve the quality of health care for those living in rural areas by ensuring access to broadband and telecommunications services. Under FCC established rules, only public or nonprofit health care providers are eligible to receive funding.[52]

The RHC Program consists of two permanent subprograms—the Telecommunications Program and the Healthcare Connect Fund—and one pilot program, the Connected Care Pilot Program. The Telecommunications Program, established in 1997, provides discounts for telecommunications services to ensure that eligible rural health care providers pay no more than urban providers for telecommunications services. The primary use of the funding is to provide reduced rates for voice and other telecommunications services necessary for the provision of health care.

In December 2012, the FCC created the Healthcare Connect Fund,[53] a program to expand health care provider access to broadband, particularly in rural areas, and replace the previously established Rural Health Care Pilot Program with a permanent program.[54] The Healthcare Connect Fund program supports high-capacity broadband connectivity and encourages the development of state and regional networks. This program provides a 65% discount on eligible expenses related to broadband connectivity and is available to individual rural health care providers and consortia. Consortia can include non-rural providers, but at least 50% of providers must be located in a rural area. According to data released by USAC, approximately $251 million was disbursed under the RHC Program in 2019.[55]

The Connected Care Pilot Program is a temporary program, established in April 2020, to distribute $100 million over three years to subsidize the cost of connected care services for select pilot projects. The program is limited to public and non-profit eligible healthcare providers located in rural or non-rural areas. The program is to emphasize support for low-income Americans and veterans and to provide a subsidy of 85% of the cost of eligible services and network equipment (e.g., routers and servers). The program is not to include funding for end-user devices (e.g., tablets or laptops, cell phones, or remote patient monitoring devices) or fund medical equipment/supplies or network infrastructure deployment. The FCC adopted final rules for the program on April 2, 2020.[56] The application filing window for the program opened on November 6, 2020, and closes on December 7, 2020.[57]

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[52] The Rural Healthcare Connectivity Act of 2016, Title II (P.L. 114-182) added skilled nursing facilities to the list of health care providers eligible to receive RHC program support. This change became effective June 21, 2017.

[53] For more details on the USF rural health care support mechanism and the Healthcare Connect Fund, see *In the Matter of Rural Health Care Support Mechanism*, WC Docket No. 02-60, Federal Communications Commission, adopted December 12, 2012, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-150A1.pdf.

[54] The Rural Health Care Pilot Program was established by the FCC in 2006 to help public and nonprofit health care providers build state and region wide broadband networks dedicated to the provision of health care services. It was the precursor to the current Healthcare Connect Fund and is no longer accepting applications.

[55] For additional information and data on this program, see Universal Service Administrative Company, *2019 Annual Report*, pp. 8 and 15, available at https://www.usac.org/about/reports-orders/annual-report/ and https://www.usac.org/rural-health-care/.

[56] For additional information on the Connected Care Pilot Program, see Federal Communications Commission, "Connected Care Pilot Program," https://www.fcc.gov/wireline-competition/telecommunications-access-policy-division/connected-care-pilot-program.

[57] Federal Communications Commission, *Connected Care Pilot Program Application Window to Open on Nov. 6*, November 5, 2020, https://www.fcc.gov/document/connected-care-pilot-program-application-window-open-nov-6.

The Low Income Program

As initially designed, the Low Income Program provided a discount for voice telephony service for eligible low-income consumers. It is the sole federal program that addresses adoption versus deployment of services. The Low Income Program has two subprograms, Lifeline and Link Up,[58] with the Lifeline Program providing the vast majority of support. In March 2016, the FCC adopted an Order to expand the Lifeline Program to support mobile and fixed broadband internet access services on a stand-alone basis, or with a bundled voice service. Households must meet needs-based criteria for eligibility. The Lifeline Program provides assistance for only one line per eligible household (either wired or wireless), in the form of a monthly subsidy of, in most cases, $9.25.[59] Support is not given directly to the subscriber but to the designated service provider. According to data released by USAC, approximately $1 billion in funding was disbursed under the Low Income Program in 2019.[60]

Rural Utilities Service Programs

The U.S. Department of Agriculture, through its Rural Utilities Service, administers five programs that provide loans and grants to increase access to broadband service in rural areas. Four programs primarily fund broadband deployment, and one program funds distance learning and telemedicine software and equipment. Congress funds RUS broadband programs through annual agriculture appropriations bills. The 115th Congress reauthorized, modified, and authorized funding for RUS broadband programs as part of the 2018 farm bill (Agriculture Improvement Act of 2018, P.L. 115-334).[61] Congress also provided additional funding for the RUS in the CARES Act (P.L. 116-136).[62]

The Community Connect Program

The Community Connect Program provides grants to fund the construction, acquisition, or leasing of facilities or land used to deploy broadband service in rural areas. The program also funds the construction or improvement of community centers that provide broadband access to the public, and the cost of providing free broadband service to certain critical community facilities (such as public safety facilities or public schools) for up to two years.

[58] The Link Up program assists eligible low-income subscribers to pay the costs associated with the initiation of service and is no longer available except for on Tribal Lands.

[59] Tribal Lands Lifeline provides an additional discount of up to $25 for eligible low-income consumers living on Tribal Lands, for a total discount of up to $34.25.

[60] For additional information and data on this program, see Universal Service Administrative Company, *2019 Annual Report*, pp. 8 and 13, available at https://www.usac.org/about/reports-orders/annual-report/ and https:/www.usac.org/lifeline/.

[61] For more information on how the 2018 farm bill addressed 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.

[62] Congress included supplemental funding for, and provisions related to, rural development programs in the Coronavirus Aid, Relief, and Economic Security Act (CARES Act, P.L. 116-136). Division B of this act includes $25 million for the Distance Learning and Telemedicine Program and $100 million for grants under the ReConnect broadband pilot program. See CRS Insight IN11391, *USDA Rural Development and COVID-19: Supplemental Funding and Agency Actions*, by Alyssa R. Casey.

The ReConnect Program

The ReConnect Program is a pilot program that provides loans, grants, or loan/grant combinations to fund the construction, acquisition, or improvement of facilities and equipment that provide broadband service in rural areas.

The Rural Broadband Access Program

The Rural Broadband Access Program, also known as the Farm Bill Loan Program, provides loans to fund the construction, acquisition, or improvement of facilities and equipment that provide broadband service in rural areas. Historically, the program provided loans, but the Agriculture Improvement Act of 2018 (2018 farm bill; P.L. 115-334) authorized the program to provide grants in addition to loans. As of FY2020, Congress has not appropriated funding for Rural Broadband Access grants.

The Telecommunications Infrastructure Program

The Telecommunications Infrastructure Program provides loans to fund the construction, acquisition, or maintenance of systems or facilities that provide telephone or broadband service in rural areas. The program was first authorized in 1949 to finance rural telephone service. Since 1995, RUS has required that networks funded by this program offer broadband service as well.

The Distance Learning and Telemedicine Program

The Distance Learning and Telemedicine Program provides grants to fund software and equipment that enable people in rural areas to access distance learning and telemedicine services.

P.L. 111-5: The American Recovery and Reinvestment Act of 2009 Programs

On February 17, 2009, President Obama signed P.L. 111-5, the American Recovery and Reinvestment Act of 2009 (ARRA). Broadband provisions of the ARRA provided a total of $7.2 billion, for broadband grants, loans, and loan/grant combinations. The total consisted of $4.7 billion to NTIA/DOC for a newly established Broadband Technology Opportunities Program (BTOP; grants) and $2.5 billion to the RUS/USDA Broadband Initiatives Program (BIP; grants, loans, and grant/loan combinations).

Regarding the $2.5 billion to RUS/USDA broadband programs, the ARRA specified that at least 75% of the area to be served by a project receiving funds shall be in a rural area without sufficient access to high-speed broadband service to facilitate economic development, as determined by the Secretary of Agriculture. ARRA directed the USDA to give priority to projects that provide service to the most rural residents that do not have access to broadband services. Priority was also given to borrowers and former borrowers of rural telephone loans.

Of the $4.7 billion appropriated to NTIA

- $4.35 billion was directed to a competitive broadband grant program, of which not less than $200 million was directed at competitive grants for expanding public computer center capacity (including at community colleges and public libraries); not less than $250 million was to encourage sustainable adoption of broadband service; and $10 million was transferred to the Department of Commerce Office of Inspector General for audits and oversight; and

- $350 million was directed for funding the Broadband Data Improvement Act (P.L. 110-385) and for the purpose of developing and maintaining a broadband inventory map, to be made accessible to the public no later than two years after enactment. Funds deemed necessary and appropriate by the Secretary of Commerce were to be transferred to the FCC for the purposes of developing a national broadband plan, which was released on March 17, 2010.[63]

Final BTOP and BIP program awards were announced by September 30, 2010. With a few exceptions, all ARRA broadband projects were concluded as of September 30, 2015.[64]

BroadbandUSA

BroadbandUSA is housed at NTIA. Using the expertise gained during administration of the ARRA Broadband Technology Opportunities Program (BTOP), the BroadbandUSA program offers one-to-one technical assistance to communities seeking to plan and implement broadband initiatives. BroadbandUSA is intended to leverage knowledge of federal funding and its network of contacts to help communities identify and leverage funding opportunities; provide support to communities seeking public-private partnerships; review, analyze, and provide recommendations and guidance associated with community-level reports, studies, and procurements; and provide background information and training to organizations that need assistance navigating the broadband landscape.[65] BroadbandUSA also organizes regional events and workshops bringing together broadband stakeholders and publishes guides and tools that can serve as resources for communities seeking to launch broadband initiatives.[66]

The National Broadband Plan

As mandated by the ARRA (P.L. 111-5), on March 16, 2010, the FCC released its report *Connecting America: The National Broadband Plan*.[67] The National Broadband Plan (NBP) sought to "create a high-performance America," which the FCC defined as "a more productive, creative, efficient America in which affordable broadband is available everywhere and everyone has the means and skills to use valuable broadband applications."[68] In order to achieve this mission, the NBP recommended that the country set six goals for 2020:

- Goal 1: At least 100 million U.S. homes should have affordable access to actual download speeds of at least 100 megabits per second and actual upload speeds of at least 50 megabits per second.
- Goal 2: The United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.

[63] Federal Communications Commission, *Connecting America: The National Broadband Plan*, released March 17, 2010, available at https://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf. For more information, see "The National Broadband Plan," below.

[64] For more information on implementation of the broadband provisions of the ARRA, see CRS Report R40436, *Broadband Infrastructure Programs in the American Recovery and Reinvestment Act*, by Lennard G. Kruger. For information on the distribution and oversight of ARRA broadband grants and loans, see CRS Report R41775, *Background and Issues for Congressional Oversight of ARRA Broadband Awards*, by Lennard G. Kruger.

[65] For more information on the types of technical assistance BroadbandUSA offers, see "How We Can Help," available at https://broadbandusa.ntia.doc.gov/ntia-common-content/how-we-can-help.

[66] See BroadbandUSA, "Resources," available at https://broadbandusa.ntia.doc.gov/ntia-resources/publications.

[67] Federal Communications Commission, *Connecting America: The National Broadband Plan*, March 16, 2010, available at https://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf.

[68] Ibid., p. 9.

- Goal 3: Every American should have affordable access to robust broadband service, and the means and skills to subscribe if they so choose.
- Goal 4: Every American community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals, and government buildings.
- Goal 5: To ensure the safety of the American people, every first responder should have access to a nationwide, wireless, interoperable broadband public safety network.
- Goal 6: To ensure that America leads in the clean energy economy, every American should be able to use broadband to track and manage their real-time energy consumption.

The National Broadband Plan was categorized into three parts:

- **Part I (Innovation and Investment)**, which "discusses recommendations to maximize innovation, investment and consumer welfare, primarily through competition. It then recommends more efficient allocation and management of assets government controls or influences."[69] The recommendations address a number of issues, including spectrum policy, improved broadband data collection, broadband performance standards and disclosure, special access rates, interconnection, privacy and cybersecurity, child online safety, poles and rights-of-way, research and experimentation (R&E) tax credits, and research and development funding.
- **Part II (Inclusion)**, which "makes recommendations to promote inclusion—to ensure that all Americans have access to the opportunities broadband can provide."[70] Issues identified include reforming the Universal Service Fund, intercarrier compensation, federal assistance for broadband in tribal lands, expanding existing broadband grant and loan programs at the Rural Utilities Service, enabling greater broadband connectivity in anchor institutions, and improved broadband adoption and utilization, especially among disadvantaged and vulnerable populations.
- **Part III (National Purposes)**, which "makes recommendations to maximize the use of broadband to address national priorities. This includes reforming laws, policies and incentives to maximize the benefits of broadband in areas where government plays a significant role."[71] National purposes include health care, education, energy and the environment, government performance, civic engagement, and public safety. Issues include telehealth and health IT, online learning and modernizing educational broadband infrastructure, digital literacy and job training, smart grid and smart buildings, federal support for broadband in small businesses, telework within the federal government, cybersecurity and protection of critical broadband infrastructure, copyright of public digital media, interoperable public safety communications, next generation 911 networks, and emergency alert systems.

[69] Ibid., p. 11.

[70] Ibid., p. 11.

[71] Ibid., p. 11.

There has been some discussion in Congress[72] and within public interest groups[73] about updating the 2010 National Broadband Plan. On June 22, 2020, the National Broadband Plan for the Future Act of 2020 (S. 4022) was introduced, along with the companion bill (H.R. 7520) on July 9, 2020. The legislation would require the FCC to update the National Broadband Plan to include

- assessment of the progress in achieving the goals of the original national broadband plan,
- examination of the effects of the COVID-19 pandemic on how people learn, work, receive medical information and treatment, and participate in civic communications, and
- analysis of the change in reliance people will have on services enabled by broadband internet access service as a result of COVID-19.[74]

116th Congress

In the 116th Congress, numerous broadband bills have been either enacted or passed in the Senate or House that could potentially impact the digital divide (see the **Appendix**). For example, gathering data about where broadband is and is not has been a major challenge. Congress enacted the Broadband Deployment Accuracy and Technological Availability Act (Broadband DATA Act, P.L. 116-130) to address this issue.[75] As another example, Congress provided an additional $100 million for ReConnect grants "to prevent, prepare for, and respond to coronavirus," in the CARES Act (P.L. 116-136, Division B, Title I, §11004).[76]

Concluding Observations

The 116th Congress has a wide variety of options for oversight and legislation to address the digital divide. Congress could contemplate various approaches to providing support for broadband infrastructure deployment and adoption as COVID-19 social distancing further revealed differences in broadband availability and accessibility across the United States.

Support to address the digital divide could include subsidies, loans, loan guarantees, and grants. Additionally, a wide array of policy instruments could be considered, including tax incentives to encourage private sector deployment, broadband bonds, demand-side incentives (such as assistance to low-income families for purchasing computers), reducing regulatory barriers to broadband deployment, and spectrum policy to spur rollout of wireless broadband services.

[72] See S. 4022 and H.R. 7520.

[73] Blair Levin, *The National Broadband Plan at 10: What's Next?*, Benton Institute for Broadband and Society, March 19, 2020, available at https://www.benton.org/blog/national-broadband-plan-10-what's-next.

[74] Additionally, the FCC would be required to report annually on its progress toward achieving the goals of the updated national broadband plan.

[75] See "Broadband Access Data and Mapping" section, above.

[76] See CRS In Focus IF11262, *USDA's ReConnect Broadband Pilot Program*, by Alyssa R. Casey.

Appendix. Broadband Legislation in the 116th Congress

The following are selected broadband-related bills potentially impacting the digital divide that have either been enacted into law, passed in the Senate, or passed in the House in the 116th Congress, as of November 17, 2020.

Enacted into Law

P.L. 116-130 (Wicker), enacted on March 23, 2020, as the Broadband Deployment Accuracy and Technological Availability Act (Broadband DATA Act), requires the FCC to issue rules to collect more granular broadband coverage data, including a decision on whether to collect verified information from others, including state, local, and tribal governmental entities that are primarily responsible for mapping or tracking broadband internet access service coverage for their respective jurisdictions.

P.L. 116-136 (Courtney), enacted on March 27, 2020, as the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), provides additional appropriations for broadband grants and specifies requirements for the grants.

Passed in the Senate

S. 1289 (Klobuchar), introduced on May 2, 2019, as the Measuring the Economic Impact of Broadband Act of 2019, would require the Secretary of Commerce to conduct an assessment and analysis of the effects of broadband deployment and adoption on the economy of the United States. Passed by the Senate on June 5, 2019.

Passed in the House

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. Passed by the House on May 8, 2019.

H.R. 1644 (Doyle), introduced on March 8, 2019, as the Save the Internet Act of 2019, includes provisions that would require Government Accountability Office to prepare reports on broadband internet access service competition, ways to improve broadband infrastructure in rural areas, challenges to accurate broadband mapping, and the benefits of standalone broadband. It would require the FCC to engage with tribal communities to address broadband needs, to not release its 706 report until broadband data inaccuracies are corrected, and to submit to Congress a report containing a plan for how the FCC will evaluate and address problems with Form 477 broadband data. Passed by the House on April 10, 2019.

H.R. 6800 (Lowey), introduced on May 12, 2020, as the Health and Economic Recovery Omnibus Emergency Solutions Act (HEROES Act), would modify or expand a wide range of programs and policies, including broadband service. Passed by the House on May 15, 2020.

H.R. 2 (DeFazio), introduced on June 11, 2020, as the Moving Forward Act, would provide funds to promote competition for broadband internet infrastructure to unserved and underserved rural, suburban, and urban communities, connect children to remote learning with digital equipment and affordable broadband options, and close other gaps in broadband adoption and digital skills. Passed by the House on July 1, 2020.

H.R. 7608 (Lowey), introduced on July 13, 2020, as the State, Foreign Operations, Agriculture, Rural Development, Interior, Environment, Military Construction, and Veterans Affairs Appropriations Act, 2021, would appropriate funding for RUS broadband programs. Passed by the House on July 24, 2020.

H.R. 7617 (Visclosky), introduced on July 16, 2020, as the Defense, Commerce, Justice, Science, Energy and Water Development, Financial Services and General Government, Labor, Health and Human Services, Education, Transportation, Housing, and Urban Development Appropriations Act, 2021, would provide funding to implement the Broadband DATA Act. Passed by the House on July 31, 2020.

H.R. 8406 (Lowey), introduced on September 29, 2020, as The Heroes Act, would modify or expand a wide range of programs and policies, including broadband service. The House passed H.R. 8406 on October 1, 2020, as a House amendment to the Senate amendment to H.R. 925.

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