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Broadband Deployment: Status and Federal Programs

Broadband—whether delivered via fiber, cable modem, copper wire, satellite, or wirelessly—is increasingly the technology underlying telecommunications services such as voice, video, and data. Since the initial deployment of high-speed Internet in the late 1990s, broadband technologies have been deployed throughout the United States primarily by the private sector. These providers include telephone, cable, wireless, and satellite companies as well as other entities that provide commercial telecommunications services to residential, business, and institutional customers.

The Federal Communications Commission's (FCC's) 2010 National Broadband Plan identified broadband as a basic infrastructure necessary for improving economic growth, job creation, civic engagement, global competitiveness, and a better quality of life. Broadband enables or enhances applications such as entertainment, telemedicine, distance education, telework, e-commerce, public safety, and energy conservation. Increasingly viewing broadband as a basic infrastructure, Congress and successive Administrations have focused on addressing gaps specifically related to broadband availability and adoption. Broadband availability refers to whether or not broadband service is offered, while broadband adoption refers to the extent to which American households actually subscribe to and use broadband.

Availability

The lack of adequate broadband is most pressing in rural America (especially tribal lands), where the costs of serving large geographical areas, coupled with low population densities, often reduce economic incentives for telecommunications providers to invest in and maintain broadband infrastructure and service. The broadband availability gap between rural, urban, and tribal areas is shown in **Table 1**.

Table 1. Percentage of Americans Lacking Access to Fixed Broadband (25 Mbps/3 Mbps) in 2016

United States	7.19%
Rural Areas	28.01%
Urban Areas	2.23%
Tribal Lands	28.84%

Source: FCC, Fixed Broadband Deployment Data as of June 2016.

Another important broadband availability issue is the extent to which there are multiple broadband providers offering competition and consumer choice. As **Table 2** indicates, multiple providers are more prevalent in urban than in rural areas.

Table 2. Estimated Percentage of Americans With Multiple Options for Fixed Broadband in 2014

	No Provider	One Provider	More Than One Provider
United States	10%	51%	38%
Rural	39%	48%	13%
Urban	4%	52%	44%

Source: FCC, *2016 Broadband Progress Report*, p. 39.

Section 706 of the Telecommunications Act of 1996 (P.L. 104-104) requires the FCC to regularly initiate an inquiry and release a report (commonly called the "706 report") assessing the status of broadband deployment to all Americans. In its *2016 Broadband Progress Report*, the FCC determined that broadband was not being deployed to all Americans in a reasonable and timely fashion. This determination rests in part on how broadband is defined. Since 2015 the FCC has defined fixed broadband as a minimum of 25 megabits per second (Mbps) (download speed) / 3 Mbps (upload speed).

On August 8, 2017, the FCC adopted a *Notice of Inquiry* to collect data and recommendations that will be used to develop the next 706 report, likely to be released in 2018. As part of its inquiry, the FCC is considering how to define and collect data on fixed and mobile services for the purposes of determining whether broadband is being deployed to all Americans in a reasonable and timely fashion.

Adoption

The National Broadband Plan also identified broadband adoption as a problem, whereby about one in three Americans have broadband available, but choose not to subscribe. Data from the Pew Research Center (**Table 3**) show that populations continuing to lag behind in broadband adoption include people with low incomes, seniors, minorities, the less-educated, and households in rural areas. According to Pew, home broadband adoption rates decreased slightly between 2013 and 2015, a drop-off mirrored by the increase in "smartphone-only" users. In its broadband adoption survey, *Home Broadband 2015*, Pew reported that the cost of monthly subscriptions is the main reason some people do not have broadband connections.

Another set of broadband adoption data are available from the National Telecommunications and Information Administration (NTIA) at the Department of Commerce. NTIA's 2015 data found that 73% of American households use the Internet (slightly down from 74% in 2013), with a continuing shift toward mobile devices.

Table 3. Percentage of U.S. Adults Who Are Home Broadband Users

	2016
All	73%
White	78%
African American	65%
Hispanic	58%
18-29 (age)	77%
30-49	81%
50-64	75%
65+	51%
<$30K household income	53%
$30K-$50K	71%
$50K-$75K	83%
$75K-$100K	90%
$100K-$150K	94%
Less than high school	34%
High school diploma	62%
Some college	80%
College degree +	91%
Rural	63%
Urban	73%
Suburban	76%

Source: Pew Research Center, *Digital Divides—Feeding America*, February 9, 2017, http://www.pewinternet.org/2017/02/09/digital-divides-feeding-america/.

Federal Programs

Federal programs exist that can provide support for broadband availability and adoption to unserved and underserved communities and populations. NTIA has published a *Guide to Federal Funding of Broadband Projects*, which provides an overview of funding sources across the federal government. Major broadband funding streams are centered in two federal entities: the FCC and the Rural Utilities Service (RUS) at the U.S. Department of Agriculture. Programs at the FCC include the following:

- **Connect America Fund (High-Cost Fund).** Subsidizes the cost of operating and extending broadband infrastructure to serve consumers and small businesses in rural, high-cost areas.
- **E-Rate (Schools and Libraries) Program.** Provides discounts of up to 90% for broadband to and within elementary and secondary schools (public and private), and public libraries in rural and nonrural areas.
- **Rural Health Care Program.** Subsidizes broadband connectivity for public and nonprofit health care providers, with a focus on rural areas.
- **Lifeline Program.** Subsidizes eligible subscribers to cover the recurring monthly service charges associated with broadband subscribership; support is not given directly to the subscriber but to the designated service provider.

Programs at the RUS include the following:

- **Farm Bill Broadband Loans.** Funds the costs of construction, improvement, or acquisition of facilities and equipment needed to provide service in eligible rural areas.
- **Telecommunications Infrastructure Loans.** Funds the construction, maintenance, improvement, and expansion of telephone service and broadband in extremely rural areas with a population of 5,000 or fewer.
- **Community Connect Grants.** Funds broadband deployment in rural communities where it is not yet economically viable for private-sector providers to deliver service.
- **Distance Learning and Telemedicine Grants.** 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.

Other federal broadband programs include the Telecommunications and Technology Program at the Appalachian Regional Commission, and Broadband USA at NTIA, which, while providing no funding for deployment, offers technical assistance to communities.

Another way the federal government can help facilitate broadband deployment is by taking steps to lower or remove regulatory barriers to broadband deployment facing private-sector providers. On January 31, 2017, FCC Chairman Ajit Pai announced the formation of a new federal advisory committee, the Broadband Deployment Advisory Committee (BDAC), which will provide advice and recommendations for the FCC on how to accelerate the deployment of broadband by reducing and/or removing regulatory barriers to infrastructure investment. The FCC has also initiated proceedings addressing the issue of reducing regulatory barriers for the deployment of wireless and wireline broadband.

Meanwhile, on June 21, 2017, President Trump announced that the Administration's $1 trillion infrastructure proposal will "promote and foster enhanced broadband access for rural America." To date, no details on the Administration's infrastructure package have been released.

For More Information

CRS Report RL30719, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*.

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