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Broadband Deployment: Status and Federal Programs

Broadband—whether delivered via fiber, cable modem, mobile or fixed wireless, copper wire, or satellite—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 broadband 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 e-commerce, telemedicine, distance education, telework, entertainment, 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. According to the latest FCC data (as of Dec. 2017), 94% of Americans have access to terrestrial broadband (e.g., fiber and cable modem connections) at minimum speeds of 25 Mbps (download speed)/3 Mbps (upload speed). The breakdown is 98.5% urban, 75.7% rural, and 68% tribal. **Table 1** shows the broadband availability gap in recent years. **Table 2** shows percentages of Americans with access to multiple providers.

Table 1. Percentage of Americans with Access to Fixed Terrestrial Broadband (25/3 Mbps)

	2014	2015	2016	2017
United States	89.4%	89.9%	91.9%	94.0%
Rural Areas	60.4%	61.5%	67.8%	75.7%
Urban Areas	96.4%	96.7%	97.7%	98.5%
Tribal Lands	57.2%	57.8%	63.1%	68.0%

Source: FCC, *Communications Marketplace Report,* released December 26. 2018, p. 132, available at: https://docs.fcc.gov/public/attachments/FCC-18-181A1.pdf

Table 2. Percentage of Americans With Multiple Options for Fixed Terrestrial Broadband (25/3 Mbps)

	No provider	1 provider	2 providers	3 or more
Nationwide	6.0%	23.7%	42.4%	28.0%
Urban	1.5%	20.1%	45.8%	32.5%
Rural	24.3%	38.4%	28.0%	9.3%
Tribal	32.0%	36.1%	21.1%	10.8%

Source: FCC, *Communications Marketplace Report,* pp. 97-98. Data as of December 31, 2017.

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 *2018 Broadband Deployment Report*, the FCC concluded that broadband is being deployed to all Americans in a reasonable and timely fashion, asserting that FCC policies are now encouraging reasonable and timely deployment by removing barriers to infrastructure investment and promoting competition in the telecommunications market.

The FCC determined that the current speed benchmark of 25 Mbps/3 Mbps remains an appropriate measure by which to assess whether a fixed service provides advanced telecommunications capability. Regarding mobile broadband, the FCC found that adoption of a single mobile benchmark is currently unworkable, given available data and the inherent variability of actual mobile speeds. The FCC concluded that mobile broadband service is not a full substitute for fixed service at this time.

Adoption

The National Broadband Plan also identified broadband adoption as a problem, with a significant number of Americans having broadband available, but choosing not to subscribe. According to a November 2017 Census Bureau survey compiled and reported by the National Telecommunications and Information Administration (NTIA), 85.9% of American households use wired broadband at home. **Table 3** shows that populations continuing to lag behind in broadband adoption include people with low incomes, certain minority populations, the less-educated, the unemployed, the disabled, and households in rural areas. According to the Pew Research Center, in its broadband adoption survey *Home Broadband 2015*, the cost of monthly subscriptions is the leading reason people do not have broadband connections.

Table 3. Percentage of Households with Home Internet Use Having Wired Broadband Service

Total U.S.	85.9%
Native American	75.0%
African American	80.7%
Hispanic	81.5%
White	87.3%
Unemployed	80.9%
Employed	87.1%
Disabled	80.7%
Not disabled	86.6%
<$25K family income	75.3%
$25K-$49K	82.0%
$50K-$74K	88.1%
$75K-$99K	90.4%
$100K or more	92.7%
No diploma	70.6%
High-school graduate	79.3%
Some college	86.4%
College graduate	92.1%
Rural	75.6%
Urban	87.5%

Source: NTIA, *Digital Nation Data Explorer*, November 2017 data. (https://www.ntia.doc.gov/data/digital-nation-data-explorer)

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 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.
- **ReConnect Program.** Offers grants, loans, and loan/grant combinations for new or upgraded broadband service in areas where at least 90% of households do not have adequate broadband.
- **Telecommunications Infrastructure Loans and Loan Guarantees.** 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 and broadband facilities to help rural communities use telecommunications to link teachers and medical service providers in one area to students and patients in another.

The 2018 farm bill (P.L. 115-334) included provisions authorizing a grant component in combination with the broadband loan program; increasing the annual authorization level from $25 million to $350 million; and authorizing grants, loans, and loan guarantees for middle mile infrastructure.

Meanwhile, the Consolidated Appropriations Act, 2018 (P.L. 115-141) established the $600 million ReConnect Program at RUS, appropriated $7.5 million to NTIA to update the national broadband availability map in coordination with the FCC, facilitated deployment of broadband infrastructure on federal property, and made more spectrum available for wireless broadband.

Another notable federal broadband program is BroadbandUSA at NTIA, which while not providing funding, offers resources and one-to-one technical assistance and advice to communities seeking to plan and implement broadband initiatives.

For More Information

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

CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*.

CRS Report R45039, *Defining Broadband: Minimum Threshold Speeds and Broadband Policy*.

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