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Bridging the Digital Divide: Broadband Workforce Considerations for the 118th Congress

As classrooms, workplaces, and social activities migrated online during the Coronavirus Disease 2019 (COVID-19) pandemic, the digital divide—the gap between those who have access to broadband (i.e., high-speed internet) and those who do not—highlighted the importance of broadband availability. The Federal Communications Commission's (FCC's) *Fourteenth Broadband Deployment Report* released in January 2021 estimates that 14.5 million Americans lack access to broadband—which the FCC defines as a connection that provides speeds of at least 25/3 megabits per second (Mbps). Since March 2020, Congress has provided $78 billion to address the digital divide and broadband availability. More specifically, Congress passed

The Coronavirus Aid, Relief, and Economic Security Act (CARES Act; P.L. 116-136), which provides $100 million for broadband programs at the U.S. Department of Agriculture (USDA);

The Consolidated Appropriations Act, 2021 (CAA, 2021; P.L. 116-260), which provides $6.2 billion for broadband programs at the FCC, National Telecommunications and Information Administration (NTIA), and USDA;

The American Rescue Plan Act of 2021 (ARPA; P.L. 117-2), which provides $7.2 billion for broadband programs at the FCC; and

The Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58), which provides $64.4 billion for broadband programs at the FCC, NTIA, and USDA.

There may be workforce challenges associated with the broadband deployment projects funded under the laws above—particularly with the $64.4 billion provided in the IIJA. Identifying current and future broadband workforce needs may be a consideration for the 118th Congress.

This In Focus describes the broadband workforce and potential challenges, including varying stakeholder perspectives on the sufficiency of the existing workforce; summarizes selected broadband workforce legislation enacted by the 117th Congress; and provides further considerations for Congress.

Broadband Workforce and Potential Challenges

Broadband Deployment Geographical Constraints
Many unserved areas without access to broadband have geographic features (e.g., mountain range) that make serving them challenging. Achieving broadband coverage nationwide will require workers with the skills to install

networks across many types of terrain. Broadband workforce training may require a focus on adaptability and scalability for different deployment areas and technologies. Broadband service is most commonly delivered to end-users at a particular location (e.g., household) at a fixed point—known as fixed broadband—through cable and fiber technologies, rather than mobile broadband delivered to devices often through a cellular network. According to the FCC's *2020 Communications Marketplace Report*, cable broadband can reach 88.8% and fiber 40.7% of U.S. households. To deploy fiber or cable, technicians lay conduit underground or between poles, splice and join the conduit, and connect the conduit to network equipment such as routers and end-use modems.

Broadband Workforce Training
Broadband workforce training is typically conducted on-the-job or through apprenticeship programs that combine on-the-job training and coursework. The federal government has supported broadband workforce training. For example, the Telecommunications Industry Registered Apprenticeship Program (TIRAP)—which focuses on developing apprenticeship programs for training and career development of the telecommunications workforce—was created by telecommunications employers and is recognized by the Department of Labor.

States also play a role in broadband workforce development by establishing job training programs. For example, in September 2021, the Ohio Lieutenant Governor announced a new program to train students as fiber optic technicians as part of a state effort to "…outline[s] a plan for increasing broadband industry career awareness and creating more training and education programs in the state."

The federal government and states could consider working together on broadband workforce training. A February 2022 report prepared by the U.S. Department of Commerce and U.S. Department of Homeland Security on *Assessment of the Critical Supply Chains Supporting the U.S. Information and Communications Technology Industry* recommended that states "develop and fund" programs to attract and train the broadband workforce through their allocation of the $42.5 billion Broadband Equity, Access, and Deployment (BEAD) program funded in the IIJA.

Varying Stakeholder Perspectives on the Existing Broadband Workforce
There are differing perspectives on whether broadband workforce shortages will pose a challenge to closing the digital divide. Some stakeholders contend shortages may hinder broadband deployment. For example, the Broadband Deployment Advisory Committee—a (no longer active)

FCC working group—stated in an October 2020 report, "considerable doubt has arisen among broadband infrastructure industry stakeholders as to whether they can meet build-out projections due to current workforce challenges." In a January 2021 joint letter to the White House and Congress, a coalition of organizations representing the telecommunications industry urged support for broadband-related job skills development, stating as follows: "The U.S. currently faces a shortfall of skilled workers needed to deploy broadband across the country, to win the race to 5G, and to ensure robust fiber, mobile, and fixed wireless networks."

Other industry stakeholders appear to disagree that a broadband workforce shortage exists. An October 2020 report by the Economic Policy Institute, *Decades of Slow Wage Growth for Telecommunications Workers*, concluded that "wage patterns in telecommunications show none of the standard signs of a labor shortage." Further, skilled technicians might be readily available, but may be under-utilized due to union affiliations. According to the labor union Communications Workers of America (CWA), telecommunications companies have been cutting thousands of jobs since 2017. In February 2021 testimony before the House Energy and Commerce Committee, CWA President Christopher Shelton stated,

> I know many of you have heard about alleged worker shortages in the telecommunications industry in recent months. I urge you to be skeptical of these claims. AT&T and other telecom companies have laid off tens of thousands of workers in the past few years, including thousands of well-trained construction technicians, while non-union contractor companies claim they cannot find qualified workers…. When wireless infrastructure companies and their lobbyists start talking about workforce shortages, ask them for proof.

Broadband Workforce Availability for Certain Regions

Geographic variability may affect broadband workforce availability. For example, there may be a sufficient broadband workforce in large metropolitan areas where there is less demand for broadband deployment due to the existing infrastructure. Tribal and rural areas are less likely to have broadband than urban and suburban areas. While the FCC's *Fourteenth Broadband Deployment Report* reported 98.8% of urban areas in the United States as served with fixed broadband at speeds of 25/3 Mbps, that figure is lower in rural areas—82.7%—and on tribal lands—79.1%. Tribal and rural areas could have a potentially smaller trained broadband workforce.

Legislation in the 117th Congress

In the 117th Congress, multiple bills were introduced related to the telecommunications workforce in some capacity—with one bill enacted, the Telecommunications Skilled Workforce Act (TSWA) contained in the IIJA. Specifically, the act requires the FCC to establish an interagency working group to draft and submit a report to Congress on recommendations to address the workforce needs of the telecommunications industry by January 14, 2023. The act

also required the Government Accountability Office (GAO) to submit a report to Congress, which "estimates the number of skilled telecommunications workers required to build and maintain broadband infrastructure in rural areas—including estimates based on current and projected need." The report, published December 15, 2022, "found that thousands more skilled workers will be needed to deploy broadband and 5G funded by recent federal programs." Additionally, the Secretary of Labor was to "issue guidance on how states can address workforce needs and safety of the telecommunications industry." The guidance, issued December 6, 2022, highlights four strategic areas: high-quality jobs, partnering with State Workforce Development Boards, improving recruitment, and ensuring worker safety.

Other bills introduced in the 117th Congress included grants to develop a skilled workforce for deployment of high-speed broadband (S. 2071), grants to prepare minority students to participate in the telecommunications workforce (S. 996), telecommunications workforce development for women and minorities (H.R. 4413), and promotion of workforce development programs tailored to the telecommunications industry (S. 3288).

Considerations for Congress

The 118th Congress has a variety of considerations should it choose to further support the broadband workforce. For example, Congress may consider whether to direct federal agencies to collect additional data on the broadband workforce to help determine whether a workforce shortage exists, and, if so, how the workforce shortage impacts efforts to close the digital divide. If it is determined that a workforce shortage exists, Congress may want to know the reason for the shortage, which might include a lack of career path awareness, a lack of federal programs, or a lack of nationwide standardized training programs, among other things. Additionally, Congress may direct FCC, NTIA, and USDA to collect information from grant recipients on any difficulty experienced in securing skilled technicians for deployment projects, as part of reporting requirements.

Congress may wish to consider legislation based on recommendations that come out of the agency reports and guidance pursuant to the TSWA in the IIJA. One option could be a study, perhaps by an independent organization, to measure performance metrics to gauge the effectiveness of existing training programs. Other options may include establishing a new program or amending an existing broadband program to include requirements for broadband workforce training and development. Congress also might consider whether potential broadband workforce resources and federal training programs should target tribal and rural areas. Congress may also choose not to pursue any of these efforts and maintain the status quo.

Additional CRS Resource

CRS Report R46613, *The Digital Divide: What Is It, Where Is It, and Federal Assistance Programs*

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