



July 2021

# BROADBAND

## FCC Should Analyze Small Business Speed Needs

Accessible Version



A Century of Non-Partisan Fact-Based Work

# GAO Highlights

Highlights of [GAO-21-494](#), a report to congressional addressees

## Why GAO Did This Study

Small businesses are essential to economic growth by creating jobs and promoting economic opportunity. Broadband is a critical tool for small businesses, with increasing importance due to the COVID-19 pandemic. The Telecommunications Act of 1996 requires FCC to encourage and support broadband access through funding and other actions.

This report responds to a provision in the John S. McCain National Defense Authorization Act for Fiscal Year 2019 as well as a request for GAO to examine broadband for small businesses. Among other objectives, this report examines (1) small business access to broadband and how federal broadband funding programs may serve small businesses; and (2) the extent to which FCC's broadband speed benchmark meets the needs of small businesses. GAO reviewed pertinent literature, documentation on federal broadband funding and relevant FCC statutory requirements to promote broadband deployment. GAO also conducted interviews with small businesses, broadband providers, industry associations, researchers, and state and federal officials.

## What GAO Recommends

GAO is making one recommendation to FCC to solicit stakeholder input and analyze small business broadband speed needs and incorporate the results of this analysis into the benchmark for broadband. FCC agreed with this recommendation.

View [GAO-21-494](#). For more information, contact Andrew Von Ah at (202) 512-2834 or [vonaha@gao.gov](mailto:vonaha@gao.gov).

July 2021

## BROADBAND

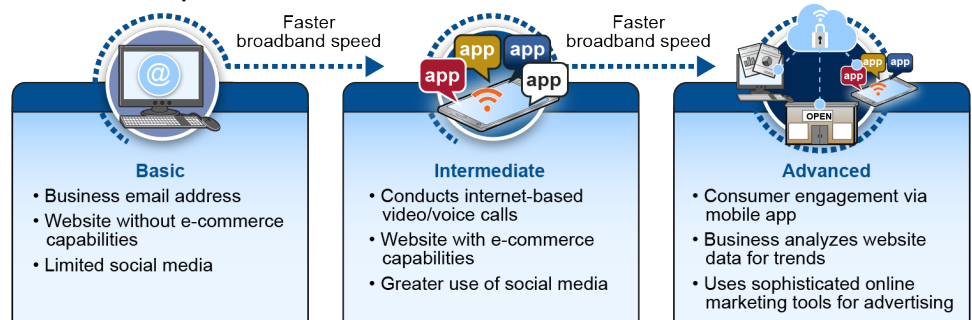
### FCC Should Analyze Small Business Speed Needs

## What GAO Found

While most small businesses have access to broadband, millions of small businesses continue to lack sufficient access to meet their needs. According to two recent surveys by the National Federation of Independent Business and Google, around 8 percent or about 2-3 million U.S. small business lack access to broadband. Small businesses likely benefit from the Federal Communications Commission's (FCC) and the Department of Agriculture's (USDA) funding to expand broadband deployment. For example, FCC estimated that approximately \$9.2 billion allocated for broadband infrastructure in 2020 will serve over 5.2 million residences and businesses.

Much of the literature GAO reviewed suggests that FCC's current broadband minimum benchmark speeds—25 megabits per second (Mbps) for downloading and 3 Mbps for uploading—are likely too slow to meet many small business speed needs. The figure below illustrates the various kinds of business broadband use and the associated relative speed requirements.

#### Illustrative Examples of Different Kinds of Business Broadband Use



Source: GAO Review of Industry Sources. | GAO-21-494

#### Accessible Data for Illustrative Examples of Different Kinds of Business Broadband Use

Basic	Intermediate	Advanced
<ul style="list-style-type: none"><li>Business email address</li><li>Website without e-commerce capabilities</li><li>Limited social media</li></ul>	<ul style="list-style-type: none"><li>Conducts internet-based video/voice calls</li><li>Website with e-commerce capabilities</li><li>Greater use of social media</li></ul>	<ul style="list-style-type: none"><li>Consumer engagement via mobile app</li><li>Business analyzes website data for trends</li><li>Uses sophisticated online marketing tools for advertising</li></ul>

Sources vary in terms of the specific speeds they recommend for small businesses. For example, in 2017, BroadbandUSA—a National Telecommunications and Information Administration program—published a fact sheet stating that small businesses need a minimum of 50 Mbps speeds in order

to conduct tasks such as managing inventory, operating point-of-sale terminals, and coordinating shipping. A 2019 USDA report on rural broadband and agriculture stated that, as technology advances and volumes of data needed to manage agriculture production grow, speeds in excess of 25/3 Mbps with more equal download and upload speeds will likely be necessary.

To fulfill a statutory requirement to determine annually whether advanced telecommunications capability is being deployed on a reasonable and timely basis to all Americans, FCC sets a minimum broadband speed benchmark. In its 2021 Broadband Deployment Report, FCC stated that the current benchmark, last set in 2015, continues to meet that requirement. However, FCC officials said they are not aware of any small business requirements that have been taken into consideration in determining the minimum speed benchmark. Analyzing small business speed requirements could help inform FCC's determination of the benchmark speed for broadband.

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## Abbreviations

1996 Act	Telecommunications Act of 1996
Advocacy	Office of Advocacy
CAF	Connect America Fund
COVID-19	Coronavirus Disease 2019
C_TEC	Chamber Technology Engagement Center (of the US Chamber of Commerce)
FCC	Federal Communications Commission
NTIA	National Telecommunications and Information Administration
RDOF	Rural Digital Opportunity Fund
ReConnect	Rural eConnectivity Pilot Program
RUS	Rural Utilities Service
SBA	Small Business Administration
SBDC	Small Business Development Center
USDA	U.S. Department of Agriculture

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July 8, 2021

Congressional Addressees

Small businesses are essential to U.S. economic growth by creating jobs and goods, as well as promoting economic opportunity. Broadband—a fast and always “on” internet connection—is critical for many small businesses.<sup>1</sup> According to the Small Business Administration (SBA), small businesses span every industry and employ over 60 million people.<sup>2</sup> The use of broadband continues to grow as businesses reinvent or expand operations, engage more with customers and suppliers, and create new products and services specific to the internet. Despite the growing importance of broadband, locations within urban and rural areas of the country continue to lack access to broadband, or affordable broadband, which can significantly hamper certain operations for small business.<sup>3</sup> This lack of access for some has also become more evident during the Coronavirus Disease 2019 (COVID-19) pandemic, as small businesses and their customers conduct more transactions online.

Although progress has been made to increase broadband access, we and others have found that the high cost of building infrastructure and the low population density in rural communities have continued to hamper the deployment of broadband in those areas.<sup>4</sup> Further, access to broadband

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<sup>1</sup>Broadband commonly refers to internet service with speeds generally faster than dial-up connections. The Federal Communications Commission’s (FCC) fixed speed benchmark for determining advanced telecommunications capability (i.e., broadband) is 25 megabits per second (Mbps) download and 3 Mbps upload. See *In re Inquiry Concerning Deployment of Advanced Telecommunications Capability to all Americans in a Reasonable and Timely Fashion*, FCC 21-18 (Jan. 19, 2021) (2021 Broadband Deployment Report).

<sup>2</sup>Office of Advocacy, U.S. Small Business Administration, 2020 Small Business Profile.

<sup>3</sup>See: Broadband Deployment Advisory Council, FCC, *Increasing Broadband Investment in Low-Income Communities Working Group* (December 2020) and *How Fast Should My Business Internet Be?* Business.org (Mar. 19, 2020).

<sup>4</sup>GAO, *Broadband: Observations on Past and Ongoing Efforts to Expand Access and Improve Mapping Data*, [GAO-20-535](#) (Washington, D.C.: June 25, 2020). For examples of other research see: Sanchez, Alvaro, *Toward Digital Inclusion: Broadband Access in the Third Federal Reserve District*, Federal Reserve Bank of Philadelphia Cascade Focus, March 2020, and Sallet, Jonathan. *Broadband for America’s Future: A Vision for the 2020s*. Benton Institute for Broadband & Society. Evanston, IL: October 2019.

is also uneven in urban areas, with recent research indicating that upgrades of broadband infrastructure are less likely in low-income communities and communities of color.<sup>5</sup> Additionally, even when broadband is available, adoption of broadband by individuals and small businesses is not universal. The cost of service and knowledge of how to use it can be barriers to subscribing to broadband.

Multiple federal agencies promote and expand broadband in the United States by funding broadband infrastructure. For example, the Federal Communications Commission (FCC) is charged with encouraging the deployment on a reasonable and timely basis of advanced telecommunication capability to all Americans under the Telecommunications Act of 1996 (1996 Act).<sup>6</sup> To define what constitutes “advanced telecommunications capability” FCC sets a minimum benchmark speed for broadband.<sup>7</sup> FCC also provides federal funding for broadband infrastructure and regulates the telecommunications industry. The U.S. Department of Agriculture’s (USDA) Rural Utilities Service (RUS) also promotes broadband through infrastructure funding in underserved rural communities.<sup>8</sup> Finally, SBA supports small business growth and development, including offering technical assistance to small business owners, which can improve adoption and use of broadband.

Our report responds to a provision in the John S. McCain National Defense Authorization Act for Fiscal Year 2019 and a request to review broadband accessibility for and challenges faced by small businesses.<sup>9</sup> This report examines:

- small business access to broadband and how FCC and RUS broadband funding programs may serve small businesses;
- the extent to which FCC’s broadband speed benchmark meets the needs of small businesses; and

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<sup>5</sup>Hernan Galperin, Thai Le, and Kurt Daum. *Who Gets Access to Fast Broadband? Evidence from Los Angeles County 2014-2017*. USC Anneberg Research Network on International Communication. (Sept. 2019).

<sup>6</sup>Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (codified, as amended, at 47 U.S.C. § 1302(a)).

<sup>7</sup>The benchmark is for purposes of section 706 of the 1996 Act. 47 U.S.C. § 1302.

<sup>8</sup>USDA has authority to set broadband speed minimums for its programs.

<sup>9</sup>Pub. L. No. 115-232, § 856, 132 Stat. 1636, 1891 (2018).

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- support provided by SBA related to small business access or use of broadband.

For the purposes of this report, we focus on small businesses' access to and use of fixed broadband service, which is broadband that serves a fixed location such as a home or business. Fixed broadband service includes wired service, fixed wireless service, and satellite service but does not include mobile services. While most small businesses likely use a mobile device—i.e., a cell phone—with internet connectivity to support their business activities, they also likely need faster and more reliable fixed broadband access for day-to-day business operations, such as managing their websites and cloud-based software. FCC distinguishes between fixed and mobile access by evaluating deployment of advanced telecommunications capability for mobile services using multiple metrics and the fixed access speed benchmark is faster than the speeds FCC analyzes for mobile service.<sup>10</sup>

To address all three objectives, we reviewed documents, including strategic plans, annual reports, and documentation related to broadband efforts, and interviewed agency officials from four federal agencies: FCC, USDA's RUS, SBA, and U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA).<sup>11</sup> We also interviewed 38 nonfederal stakeholders, including 12 small businesses, five broadband providers, seven trade organizations that represent small businesses or broadband providers, researchers from six organizations who study broadband policy, as well as officials from eight state broadband offices. During these interviews, we asked about how small businesses use broadband, any challenges faced in accessing or providing access to broadband, and federal broadband programs. We selected interviewees to represent a range of geographic locations, industry segments, and size, as appropriate to our study's focus on small businesses. More information about the specific states and businesses we interviewed is discussed below.

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<sup>10</sup>As discussed previously, FCC's fixed access speed benchmark is set to 25 Mbps (download) / 3 Mbps (upload). See 2021 Broadband Deployment Report, para. 14. For mobile service, FCC evaluates speed metrics of both 5/1 Mbps and 10/3 Mbps.

<sup>11</sup>We spoke with NTIA because it plays a leadership role in the American Broadband Initiative—an interagency effort of more than 25 federal agencies that promote broadband. NTIA publishes a funding guide covering more than 50 federal programs that may support broadband access. Where relevant, we included information published by NTIA about broadband for small business. However, NTIA does not have a small business broadband focus, and we did not evaluate the American Broadband Initiative for our review.



To determine small businesses' access to broadband and needs that small businesses have related to broadband we reviewed literature including surveys and studies published in 2015 through 2020 by academic, industry, policy, and government sources. For a list of the surveys and studies we reviewed, see appendix I. We also reviewed broadband plans and initiatives for eight states: California, Colorado, Georgia, Minnesota, New York, Texas, Vermont, and Virginia. We selected these states based on several factors: the presence of a state broadband office, receipt of federal funding or technical assistance within the last 5 years, and geographic diversity.

To determine how small businesses may benefit from federal funding to increase access to broadband, we analyzed portions of FCC's Universal Service Fund high-cost program (high-cost program) and RUS's Rural eConnectivity Pilot Program (ReConnect). While no federal broadband-funding program is geared toward small businesses access specifically, we included the high-cost program because, among FCC, RUS, and NTIA programs, it is the largest program for broadband deployment and awards support to serve locations that include small businesses. Within the high-cost program, we focused on the Connect America Fund (CAF) and the Rural Digital Opportunity Fund (RDOF) in this report because both programs are offered to support universal access. In addition, although these funds are not focused on small businesses, FCC includes small businesses in the expected locations to be served. We included the ReConnect program because it provides broadband funding to service rural locations that include small businesses.

For each program, we reviewed program guidance and information about funding awards to determine how small businesses may benefit from this funding. To the extent possible, we also reviewed information about the number of businesses served by the funding. In addition, for ReConnect, we requested and reviewed application documentation for grant and grant/loan applications that were awarded funding through July 2020.<sup>12</sup> This documentation included non-generalizable information from RUS forms filled out by farms and small businesses about their current and desired broadband download speeds. We analyzed these forms to determine the proportion of farms and businesses that lacked minimum download speeds, and the speeds they desired. We also used these forms, along with recommendations by state officials we interviewed to

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<sup>12</sup>ReConnect also offers loans, but loan applications are not evaluated in the same manner, and do not include information from farms and small businesses. Therefore, we did not review documentation for loan only awards.

identify and contact small businesses. We interviewed 12 small businesses in different industries located across the country about their experiences with broadband. While not representative of small businesses generally, these 12 interviews provided key contextual and illustrative examples of how broadband access, or the lack thereof, affects their business.

To determine the extent to which small business broadband needs align with the FCC benchmark for broadband speed, we reviewed relevant statutory requirements for FCC to promote universal access to advanced telecommunications services as required by the 1996 Act. We also reviewed reports that FCC prepares in an effort to meet this mandate. In particular, we reviewed FCC's benchmark for what constitutes an advanced telecommunications services and the process and information used to determine the broadband speed benchmarks. We reviewed the minimum speed requirements for FCC's high-cost program and RUS's ReConnect program. We also reviewed documents from a recent FCC rulemaking proceeding regarding business data services, a dedicated broadband service typically used by businesses.<sup>13</sup>

Finally, we analyzed relevant data from two sources: 1) small business data from the United States Census Bureau including Census' Statistics of U.S. Business and Nonemployer Statistics from 2017 for both data sets because it was the most recent year available for Statistics of U.S. Business at the time of analysis; and 2) FCC's broadband deployment data for 2019, published in 2021. For each source, we assessed the reliability of the data. In reviewing the Census data, we assessed selected data and the associated methodology and determined that the data set met the standards and guidelines for statistical surveys, and were therefore reliable for our purposes of reporting high level small business trends. Regarding the FCC data, we have previously cited issues of these data potentially over-representing broadband access, as we discuss in this report.<sup>14</sup> Accordingly, while we determined that the data were sufficiently reliable for presenting selected high-level trend information, we included appropriate caveats regarding their shortcomings.

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<sup>13</sup>*In re Business Data Services in an Internet Protocol Environment, Report and Order*, FCC-17-43, para. 6 (April 28, 2017) ("BDS Order"), *remanded in part sub nom on other grounds, Citizens Telecomms. Co. of Minn., LLC v. FCC*, 901 F.3d 991 (2018).

<sup>14</sup>GAO, *Broadband Internet: FCC's Data Overstate Access on Tribal Lands*, [GAO-18-630](#) (Washington, D.C.: Sept. 7, 2018).

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To describe the support that SBA offers small businesses regarding access to or use of broadband, we reviewed SBA documents and information on the broadband assistance it offers to small businesses. This review included efforts by SBA's Office of Rural Affairs, Office of Entrepreneurial Development, and the Office of Advocacy. We also received information from SBA partner organizations that offer broadband related technical assistance, including information from representatives of four Small Business Development Centers (SBDC) in states where we had also spoken with broadband offices, and the Chief Executive Officer of SCORE.<sup>15</sup>

We conducted this performance audit from December 2019 to June 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

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### Federal Agencies

Several federal agencies play a role in facilitating small businesses' access to and use of broadband services. In particular, FCC and USDA's RUS have significant roles in funding broadband, while SBA helps small businesses start, grow, and compete in global markets, which includes supporting broadband access.

FCC is charged with encouraging deployment of advanced telecommunications capability—which includes broadband—to all Americans on a reasonable and timely basis.<sup>16</sup> FCC has several efforts that can affect small businesses' broadband access and use:

- Broadband benchmark. To determine whether broadband is being deployed, FCC sets a minimum speed that serves as the benchmark

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<sup>15</sup>SCORE is an acronym derived from the organization's former name, Service Corps of Retired Executives.

<sup>16</sup>47 U.S.C. § 1302(a).

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for defining broadband. Since 2015, FCC's speed benchmark for fixed broadband has been 25 megabits per second when downloading and 3 megabits per second when uploading, referred to as 25/3 Mbps.<sup>17</sup> In the 2021 Broadband Deployment Report, FCC stated that this definition continues to remain an appropriate measure to assess advanced telecommunications capability and reflects significant support from comments within the rulemaking record.<sup>18</sup>

- **High-Cost Program.** FCC administers the Universal Service Fund high-cost program, which provides financial support to voice and broadband providers to maintain, build or upgrade infrastructure to homes and small businesses in areas that are unserved or underserved. This program requires that broadband access be extended to residence and small business locations.
- **Rulemakings.** FCC makes rules and issues regulations to promote broadband infrastructure expansion and competition.<sup>19</sup> In particular, FCC has recently conducted a rulemaking related to business data services, a broadband service that offers a dedicated point-to-point connection with guaranteed service levels and symmetrical upload and download speeds.<sup>20</sup> This is in contrast to "mass-market" broadband service available to consumers and businesses that can include a shared connection with speed levels that are not guaranteed. Business data services can be used by businesses, non-profits, and government institutions to ensure secure and reliable data transfers via the internet. According to FCC officials, business data services are usually offered at a price higher than residential broadband service. According to a SBA Office of Advocacy filing, business data services are an important input for many small businesses.

Within USDA, RUS's role is to provide funding for infrastructure in rural communities, including water and waste treatment, electric power, and

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<sup>17</sup>FCC considers whether Americans have access to fixed broadband service and mobile service. See 2021 Broadband Deployment Report, FCC 21-18, para.10. FCC notes that although both services are capable of providing advanced telecommunications capabilities, they are not full substitutes.

<sup>18</sup>See 2021 Broadband Deployment Report, para.12.

<sup>19</sup>Rulemaking is the process by which executive and independent agencies develop, create, and implement regulations. Administrative Procedure Act, 5 U.S.C. §§ 551-59. An agency may also need to comply with its own processes and requirements related to rulemaking imposed by other statutes.

<sup>20</sup>BDS Order, para. 6.

telecommunications services. Since 2018, RUS has managed the ReConnect program, which provides grants, loans, and grant-loan combination funding to expand broadband infrastructure to serve residences, small businesses, farms, and others in eligible rural areas.

SBA's mission is to maintain and strengthen the nation's economy by enabling the establishment and vitality of small businesses. SBA offers technical assistance to increase effective use of broadband through a nationwide network of partner organizations. Within, but independent of SBA is the Office of Advocacy (Advocacy).<sup>21</sup> Advocacy officials conduct research and advocate on behalf of small businesses on issues including broadband to other agencies including FCC.

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## Broadband Deployment

Recent FCC reporting shows that while most Americans have access to broadband, some—particularly those in rural areas—still lack or do not use this essential service. According to FCC's 2021 Broadband Deployment Report, as of year-end 2019, about 96 percent of the U.S. population had access to broadband at FCC's established minimum speed benchmark of 25/3 Mbps.<sup>22</sup> While the nation is moving closer to universal broadband access, the report also found that some longstanding issues persist. First, a significant gap in broadband access remains between urban and rural populations, with at least 17 percent of rural Americans lacking access to broadband at speeds of 25/3 Mbps, compared to only 1 percent of Americans in urban areas. Second, broadband has not been universally adopted where it is available. According to the report, about 31 percent of people nationwide who have access to broadband at speeds of 25/3 Mbps have not subscribed to it.<sup>23</sup> Furthermore, we have previously found that FCC's data overstate access,

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<sup>21</sup>Pub. L. No. 94-305, §201, 90 Stat. 663, 668 (1976) (codified at 15 U.S.C. § 634(a)). While located within SBA, Advocacy is independent of SBA, and it has distinct statutory authorities and responsibilities, a separate statutory charter, and an appropriation account that is separate from the rest of SBA. Since Advocacy is located within SBA, but also independent, we will summarize overall SBA efforts, but when discussing specific information we will distinguish between the two.

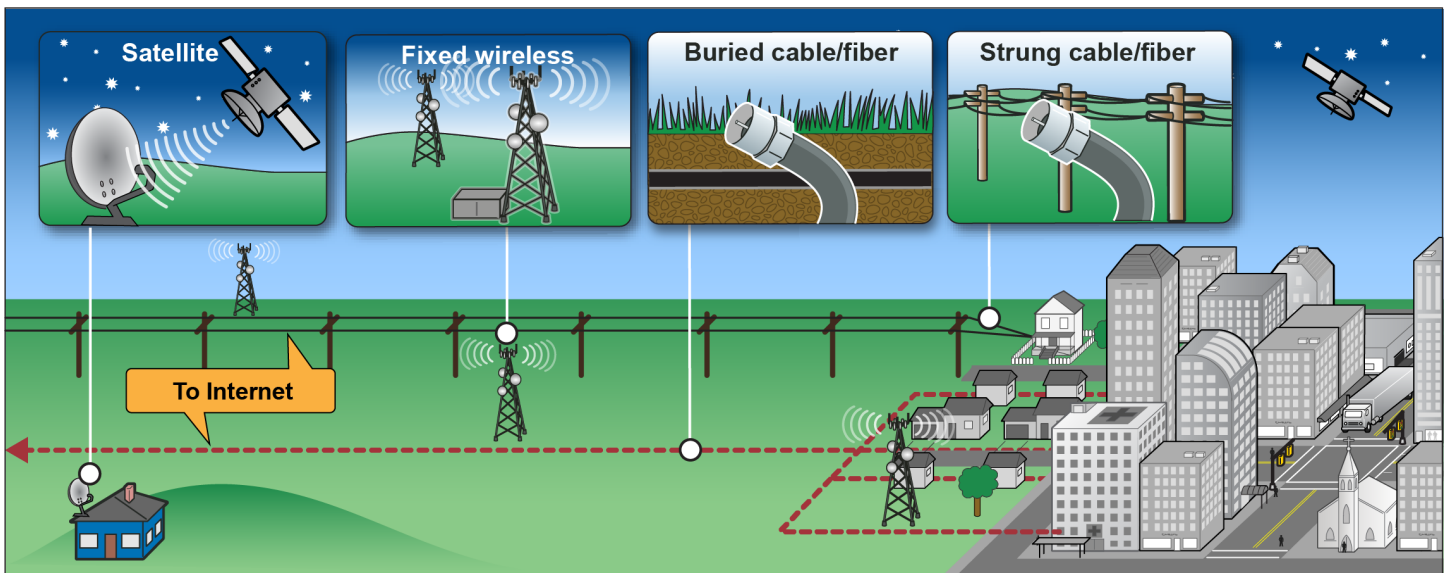
<sup>22</sup>2021 Broadband Deployment Report, para. 33.

<sup>23</sup>2021 Broadband Deployment Report, para. 46.

so the gap in access may actually be larger.<sup>24</sup> Although the 2021 Broadband Deployment Report provides insight into nationwide access and adoption rates, FCC does not collect data that would allow analyzing trends specific to small businesses.

Broadband infrastructure can be very expensive to build and maintain. Figure 1 depicts the key components of fixed broadband service. While estimates of the cost of closing the gap between current access and universal access in the United States vary depending on the technology, capabilities, and location of service, it has been estimated to cost tens of billions of dollars.<sup>25</sup>

**Figure 1: Key Components of Fixed Broadband Service**



Source: GAO. | GAO-21-494

<sup>24</sup>GAO, *Broadband Internet: FCC's Data Overstate Access on Tribal Lands*, [GAO-18-630](#) (Washington, D.C.: Sept. 7, 2018). In 2019, FCC began an effort to improve its deployment data, and the effort was later mandated by the Broadband Deployment Accuracy and Technological Availability Act, Pub. L. No. 116-130, 134 Stat. 228 (2020).

<sup>25</sup>For example, in 2017, FCC's Office of Strategic Planning and Policy Analysis published a paper stating that the investment required to deploy fiber to the premises of 98 percent of Americans would cost about \$40 billion and \$80 billion to reach 100 percent. Paul de Sa, *Improving the National Digital Infrastructure*. FCC Office of Strategic Planning and Policy Analysis, (2017).

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While most Americans have access to some form of internet service, competition for broadband services is also lacking in many areas of the country. For example, according to 2019 data reported by FCC, about 22 percent of the population has access to only one broadband provider offering speeds at 25/3 Mbps or higher.<sup>26</sup> Where competition is lacking, small businesses and others may not be able to access services they desire at reasonable prices.

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## Small Businesses

According to SBA's Office of Advocacy, there are approximately 32 million small businesses in the United States; the distribution of which is shown in figure 2.<sup>27</sup> Advocacy defines a small business as any business with fewer than 500 employees, the majority of small businesses—about 81 percent—are non-employer businesses, meaning that the owner is the only employee.<sup>28</sup> Businesses employing 1 to 19 employees comprise about 17 percent of small businesses, and businesses employing 20 to 499 employees comprise about 2 percent.

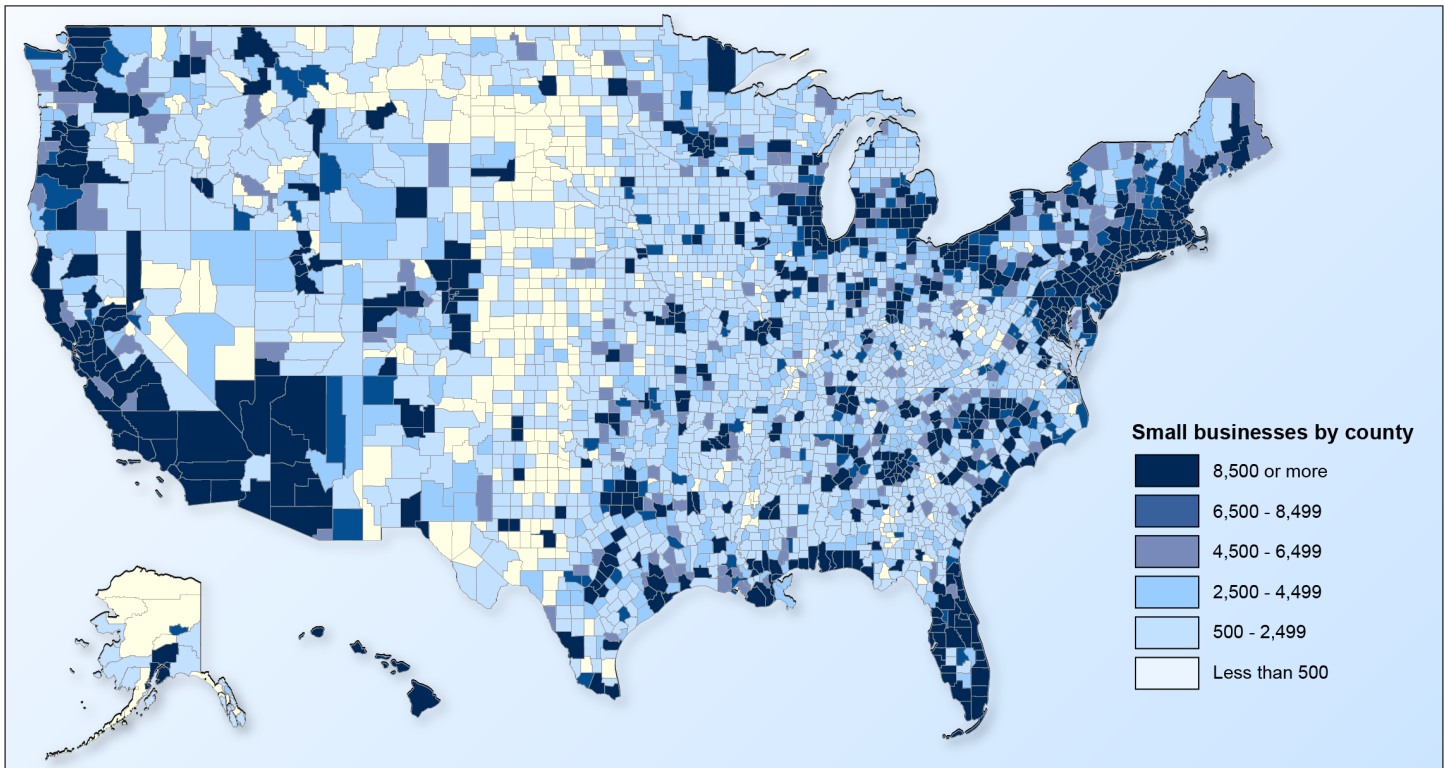
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<sup>26</sup>FCC excludes satellite service providers in this analysis. FCC states that, while these services are widely available in the U.S., low subscription rates indicate that available data may overstate the extent to which these services are available. 2020 Communications Marketplace Report, FCC 20-188, paras. 126 and 127.

<sup>27</sup>Office of Advocacy, U.S. Small Business Administration, 2020 Small Business Profile.

<sup>28</sup>Advocacy uses this definition for research and statistical purposes. The standards for small business set by SBA program offices vary by industry and are generally expressed as the average number of employees over a 12-month period or average annual receipts in the previous 3 years. 13 C.F.R. part 121.

**Figure 2: Estimated Number of Small Businesses in the United States by County in 2017**



Source: GAO analysis of U.S. Census Data. | GAO-21-494

Note: We combined U.S. Census Bureau Data from the 2017 U.S. Business and 2017 Nonemployer Statistics data to estimate the total number of employers with less than 500 employees by county.

Small businesses have diverse broadband needs that can influence their selection of a broadband plan. For example, the plan they choose may depend on their business type, industry, size, and other factors. A small business owner may subscribe to widely available and advertised residential or business plans—sometimes referred to as “mass market” plans—or they may opt for a more tailored business plan. For example, some owners of a non-employer small business operating from a home-based office may find that their business broadband needs are met by a residential broadband plan, which they also use for personal use. Alternatively, other owners, whether operating out of a home or office location may subscribe to a business plan, which is often advertised at higher costs with additional benefits. Business owners with greater bandwidth needs typically subscribe to a more tailored broadband service, such as business data services, as described above.



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## Most Small Businesses Have Access to Broadband, but Information on the Extent to Which FCC and RUS Broadband Funding Programs Serve Businesses Is Limited

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### Most Small Businesses have Access to Broadband, but for the Millions without Adequate Access It Is a Critical Issue

Recent surveys we reviewed showed that some small businesses experience broadband access issues. A Google sponsored nationally representative survey of small businesses with less than 250 employees found that 8 percent of small businesses reported “poor internet access” as a barrier to improving digital engagement.<sup>29</sup> While 8 percent is a relatively small portion of small businesses, given there are approximately 32 million businesses, this represents around 2-3 million small business that lack adequate access to broadband. Another survey conducted by the National Federation of Independent Business, while not generalizable to the broader population of small businesses due to only sampling members, similarly found that 8.7 percent of responding small businesses reported access to broadband as a critical problem.<sup>30</sup> A nationally representative survey of rural small businesses sponsored by Amazon and U.S. Chamber Technology Engagement Center (C\_TEC), found that approximately 20 percent of rural small businesses were not using broadband, with about 5 percent accessing the internet with a dial-up connection.<sup>31</sup> Table 1 provides additional details about these three surveys. The findings of these surveys are similar to FCC’s 2021 Broadband Deployment Report, which, as we discussed earlier, found

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<sup>29</sup>John O’Mahony, and Sara Ma. *Connecting Small Businesses In the US*, Commissioned by Google (Deloitte: 2018).

<sup>30</sup>Holly Wade, and Andrew Heritage. *Small Business Problems & Priorities*, Tenth Edition (NFIB Research Center: 2020).

<sup>31</sup>Nam Pham and Mary Donovan. *Unlocking the Digital Potential of Rural America*. Commissioned by Amazon and (C\_TEC). (2019). C\_TEC is the U.S. Chamber of Commerce’s Technology Engagement Center, launched by the U.S. Chamber of Commerce to advance technology’s role in strengthening business.

that approximately 4 percent of the U.S. population overall, and 17 percent of the rural population lack access to broadband.

**Table 1: Recent Surveys of Small Businesses Related to Broadband**

Year Published	Study Sponsor/Survey Conductor	Population Surveyed	Number of Respondents	Relevant Finding
2018	Google/ Research Now	Nationally representative sample of businesses with less than 250 employees	2,013	8% of small businesses selected “poor internet access” as a barrier to improving digital engagement.
2019	Amazon and U.S. Chamber Technology Engagement Center/ Ipsos	Nationally representative sample of rural small businesses with less than 500 employees	5,300	20% of rural small businesses do not use broadband; 5% use dial-up internet access.
2020	National Federation of Independent Business (NFIB)/ NFIB	Randomly selected sample of 20,000 NFIB small business members	2,552	8.7% responded that access to high-speed internet was a critical problem for them.

Sources: Google, Amazon and U.S. Chamber Technology Engagement Center, and NFIB. | GAO-21-494

Note: Research Now and NFIB survey findings are not generalizable to the U.S. small business population of fewer than 500 employees due to methodology sampling. In the case of Research Now, the survey was conducted online for businesses with less than 250 employees. The NFIB survey population was limited to small business members of NFIB.

Although not generalizable, our interviews with 12 small business owners are illustrative of how essential broadband service is to their business operations and the issues they face with insufficient access. All the small businesses identified basic tasks they perform using broadband including communication with clients, customers, and or staff via email or other applications. Eleven also identified more advanced uses like working with cloud based applications and software, such as accounting software for payroll, and uploading and storing large documents and data. Six of these business owners also told us that they did not have access to broadband at FCC’s benchmark for minimum broadband speed—25/3 Mbps—and faced significant challenges running their businesses as a result. The following challenges were among those described by these small business owners.

- A California vineyard owner said that her only broadband option is satellite, and while she subscribes to the maximum speed available, she is unable to access the internet at FCC’s minimum benchmark speed. When she ran a speed test at mid-afternoon in October 2020, it showed her speeds to be approximately 3/5 Mbps. This owner stated that access to broadband is essential for many aspects of her business. For example, she conducts inventory management online with a third party warehouse that stores and ships the wine. This owner also relies on a cloud-based reporting software to help ensure

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her business complies with state legal requirements, which includes submitting reports online to the state government. The owner told us there are times when she has worried about meeting quarterly reporting deadlines because the broadband service will not upload information.

- An Alabama auto body shop owner told us that his telephone dial-up connection, which is his only option for internet access, provides approximately 2.5/2.5 Mbps. The shop relies on the service for many daily activities, including communication and ordering parts to repair vehicles. Since COVID-19, he explained that the need for higher broadband speeds has become more pronounced because insurance adjusters are no longer assessing vehicle damage in person, but requesting the shop take as many as 35 photographs and upload them to cloud-based software. Given his current upload speeds, the owner said this task has become very time consuming and frustrating.
- A Minnesota small business owner told us he operates his marketing business primarily out of his home since COVID-19. He subscribes to a fixed wireless internet provider; however, the speeds are below 25/3 Mbps, and the service is not sufficient for his business purposes, which include editing and uploading marketing videos. The only other available internet service is a slower dial-up option provided by the local telephone company. He stated that one of his neighbors, who also operates a small business from home, is considering moving for better broadband access.

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## Funding from FCC and RUS Likely Increases Broadband Access, but Information on Small Businesses Served Is Limited

To support the expansion of broadband access, FCC's high-cost program and RUS's ReConnect program both provide funding for broadband infrastructure in geographic areas—especially rural areas—that are unserved or underserved. Although the number of small businesses served by these programs is not specifically known, small businesses located in these areas likely benefit from expanded broadband service funded by these programs, as both agencies estimate the number of businesses they expect will benefit from the programs. Furthermore, state officials and researchers we spoke with said federal funding is useful for building broadband infrastructure in areas that receive funding, which can serve small businesses.

FCC estimates that millions have benefitted from its high-cost program, which provides funding to deploy and maintain broadband service for locations, including small businesses, in geographic areas that meet program criteria. According to FCC officials, for both CAF and RDOF, FCC uses a model to estimate the number of residences and businesses that should be served by funding awarded in these areas. FCC reports that, components of CAF and RDOF have collectively awarded \$19.7 billion since 2014, which FCC has estimated will benefit 9.1 million residence and business locations.<sup>32</sup> Table 2 provides for a more detailed description of the funding amounts. FCC officials told us that once broadband providers are awarded funding, they are only required to report the total number of locations served, without a distinction between residences and small businesses. Further, such a distinction could be difficult because many small businesses operate from a residence; a location can be both a residence and a business.

RUS's ReConnect program also includes small businesses in its reported estimates of locations served. RUS's estimation is different from FCC's, in that it includes information submitted by providers, along with information from its own analysis to estimate the number of businesses served. As of March 2021, RUS estimates the about \$1.4 billion in funding awarded since 2018 will benefit about 303,200 residences, farms, and small businesses, as shown in table 2 below.<sup>33</sup> RUS specifically reports that funding from the first round of the ReConnect program served about 5,900 businesses and 13,000 farms; the second round of funding will serve about 3,900 businesses and 8,600 farms.

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<sup>32</sup>There are other components of the high-cost program that are not included in this review, as previously discussed.

<sup>33</sup>ReConnect received additional funding through the CARES Act. See CARES Act, Pub. L. No. 116-136, 134 Stat. 281, 507 (2020). We did not review this funding for this report, but we have periodically examined these funds as part of our work related to the CARES Act. We regularly issue government-wide reports on the federal response to COVID-19. For the latest report, see GAO, *COVID-19: Sustained Federal Action Is Crucial as Pandemic Enters Its Second Year*, [GAO-21-387](#) (Washington, D.C.: Mar. 31, 2021). Our next government-wide report will be issued in July 2021 and will be available on GAO's website at <https://www.gao.gov/coronavirus>.

**Table 2: Funding Amounts and Locations Served by Selected Federal Communications Commission (FCC) High-Cost Program Components and the Rural Utilities Service (RUS) ReConnect Program**

Program component <sup>a</sup>	Year announced <sup>b</sup>	Funding amount <sup>c</sup>	Estimated number of locations to be served
Connect America Fund (CAF) Phase II Model Based Funding	2014	\$9 billion	3.2 million residences and businesses
CAF Phase II Reverse Auction	2016	\$1.5 billion	Over 713,000 residences and businesses
Rural Digital Opportunity Fund (RDOF) Reverse Auction	2020	\$9.2 billion	Over 5.2 million residences and businesses
<b>FCC High-Cost Program Total:</b>	n/a	<b>\$19.7 billion</b>	<b>9.1 million residences and businesses</b>
<b>FCC High-Cost Program Total:</b> ReConnect Round 1	2018	\$0.7 billion	159,000 residences, 5,900 businesses, 13,000 farms, and 500 other entities
<b>FCC High-Cost Program Total:</b> ReConnect Round 2	2019	\$0.7 billion	112,000 residences, 3,900 businesses, 8,600 farms, and 300 other entities
<b>RUS ReConnect Program Total</b>	n/a	<b>\$1.4 billion</b>	<b>303,200 residences, businesses, farms, and other entities</b>

Source: GAO summary of FCC and RUS information. | GAO-21-494.

<sup>a</sup>This table does not include all components of the high-cost program.<sup>b</sup>For CAF and RDOF, the year in this column refers to the year the report and order was adopted. For ReConnect, the year in this column refers to the year that the program announcement was published.<sup>c</sup>Not all funding has been fully allocated or authorized. Numbers in this column refer to the amounts allocated or authorized, as of March 2021.

While neither program has a specific goal related to serving small businesses, RUS's program incentivizes broadband providers and other funding applicants to serve businesses by awarding additional points in its application review process to applications that include documentation from businesses and farms expressing interest in the applicant's proposed broadband service. We reviewed documentation from about 2,300 farms and small businesses submitted with 67 successful applications for ReConnect grants. Of these small businesses and farms, about 15 percent reported that they had no access to broadband, and 53 percent reported they had download speeds of less than 10 Mbps. Some business owners also included written statements advocating for better broadband, and stating that their current broadband was not enough to support their business. We interviewed three small businesses located in areas that were recently awarded ReConnect funding about the expected benefits of the proposed service. All three small businesses owners told us they were expecting fiber to be built out to their businesses and were expecting significantly improved service. One, a farmer in North Dakota, said that he did not have to make a planned purchase of a \$10,000 piece of equipment to receive a better wireless signal for his farm, when he

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learned that a provider would be installing fiber to his farm under a RUS ReConnect grant.

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## Small Business Broadband Needs Can Often Exceed FCC's Current Benchmark Used to Evaluate Broadband Deployment

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### Available Evidence Points to a Need for Fast and Reliable Broadband for Many Small Businesses

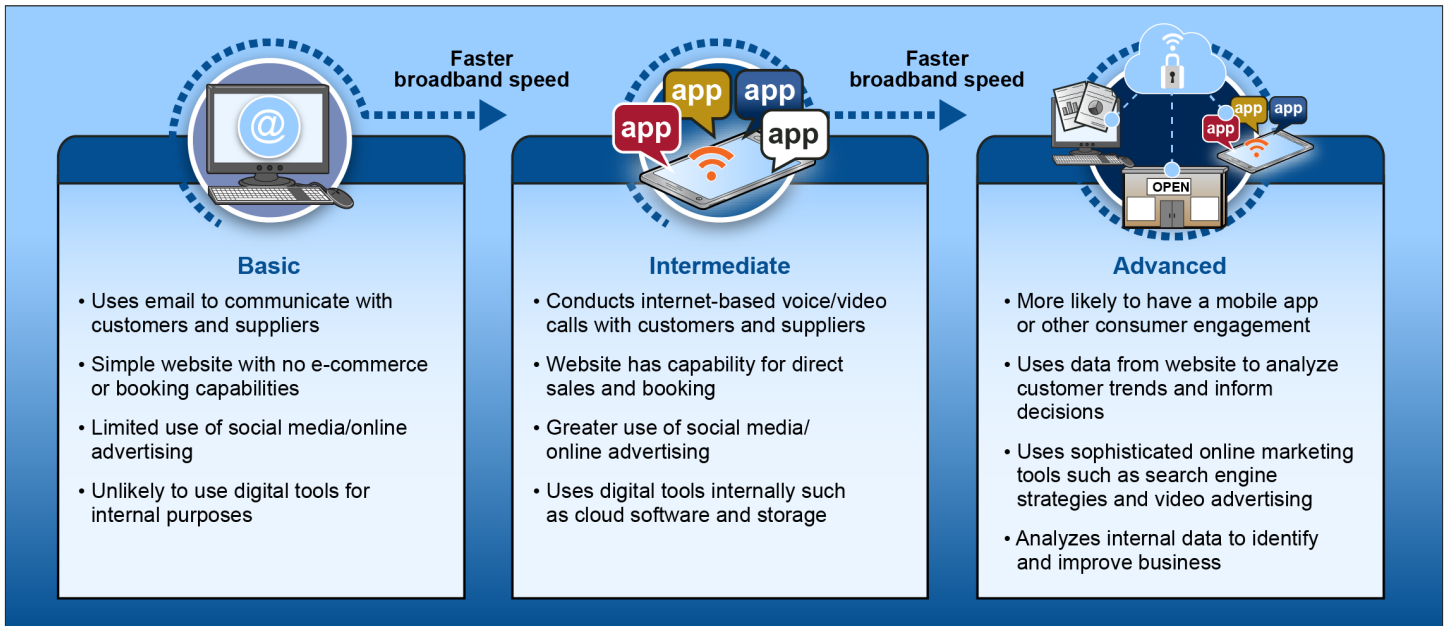
We did not identify a study specific to the speed needs of small businesses that has been recently conducted; however, academic, policy, and industry literature we reviewed noted that many small businesses have a wide range of varying business activities that often need fast broadband.<sup>34</sup> Overall, speed needs vary depending on the types of activities a business is conducting. Some business tasks can be conducted with low speeds, while others require faster speeds. For example, according to FCC officials, lower broadband speeds could be used to operate a point-of-sale system, such as the credit card reader at a gas station or other store. Industry sources report that faster broadband speeds are necessary for more advanced tasks, such as numerous sales transactions, frequent or constant cloud-based computing, and video conferencing.<sup>35</sup> The number of users also affects the broadband speed that a small business requires, and businesses with more employees and devices require faster broadband speeds because these speeds are being divided among users. Figure 3 illustrates the kinds of business activities associated with various levels of broadband use and the associated relative speed needs.

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<sup>34</sup>SBA's Office of Advocacy published a study in 2010 that included information about the speed needs of small businesses, though SBA officials told us they have not conducted more recent research on this topic. See Columbia Telecommunications Corporation, *The Impact of Broadband Speed and Price on Small Business*. SBA Office of Advocacy. (November, 2010)

<sup>35</sup>For example, see *How Fast Should My Business Internet Be?* Business.org, March 19, 2020.

Figure 3: Illustrative Examples of Different Kinds of Business Broadband Use



Source: GAO Review of Industry Sources. | GAO-21-494

Accessible Data for Figure 3: Illustrative Examples of Different Kinds of Business Broadband Use

Basic	Intermediate	Advanced
<ul style="list-style-type: none"> <li>• Uses email to communicate with customers and suppliers</li> <li>• Simple website with no e-commerce or booking capabilities</li> <li>• Limited use of social media/online advertising</li> <li>• Unlikely to use digital tools for internal purposes</li> </ul>	<ul style="list-style-type: none"> <li>• Conducts internet-based voice/video calls with customers and suppliers</li> <li>• Website has capability for direct sales and booking</li> <li>• Greater use of social media/online advertising</li> <li>• Uses digital tools internally such as cloud software and storage</li> </ul>	<ul style="list-style-type: none"> <li>• More likely to have a mobile app or other consumer engagement</li> <li>• Uses data from website to analyze customer trends and inform decisions</li> <li>• Uses sophisticated online marketing tools such as search engine strategies and video advertising</li> <li>• Analyzes internal data to identify and improve business</li> </ul>

Sources vary in terms of the specific speeds they recommend for small businesses. In 2017, BroadbandUSA, a NTIA program, published a fact sheet stating that small businesses needed a minimum of 50 Mbps speeds in order to conduct tasks such as managing inventory, operating point-of-sale terminals, and coordinating shipping.<sup>36</sup> A 2019 USDA report

<sup>36</sup>BroadbandUSA, *What Speed Do You Need?* (February 2017).

on rural broadband and agriculture stated that as technology advances and volumes of data needed to manage agriculture production grow, speeds in excess of 25/3 Mbps will likely be necessary.<sup>37</sup> The report does not suggest a specific minimum speed but also states that these advances are likely to require more symmetrical data flows, with a better balance of download and upload speeds. Additionally, some of these reports also state that upload speeds are important, for example, when businesses conduct videoconferences or upload large files or large amounts of data.<sup>38</sup>

Small businesses themselves have also expressed the need for faster speeds. For example, approximately 23 percent of 2,300 small businesses and farms that submitted documents in support of broadband providers' funding application to the RUS program reported wanting download speeds of at least 100 Mbps.<sup>39</sup> Eleven of the twelve small business owners we interviewed also highlighted advanced uses of broadband and two gave examples of using higher broadband speeds. One business owner we spoke to in California provides IT services to other small businesses, and he advises clients to get a 100/25 Mbps connection, at minimum. He said that for his office with six employees he subscribes to broadband at a speed of 100/50 Mbps. For a client that is an urgent care office with approximately 30 employees, he is working to get the client connected to a symmetrical gigabit service (1,000/1,000 Mbps) to meet its needs. Another business operator in Minnesota, who manages one of four laboratories for a calibration business, also said his business has a dedicated fiber line with 50/25 Mbps and the ability to upgrade speeds as necessary. Without the ability to increase speed in the future, the operator said his business would have moved office locations.

Both of the previously discussed FCC and RUS funding programs have successfully incentivized providers to offer higher speeds. For example, ReConnect is mostly funding projects that propose to build fiber, which has the capacity to carry large amounts of data quickly and is generally

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<sup>37</sup>USDA, *A Case for Rural Broadband: Insights on Rural Broadband Infrastructure and Next Generation Precision Agriculture Technologies* (April 2019).

<sup>38</sup>For example, Zoom, a videoconferencing platform, recommends 3.8 Mbps upload speeds for some high definition video calls.

<sup>39</sup>Twenty-two percent of respondents said they did not know what speed they wanted, and the remainder said that they wanted slower speeds. These documents only asked respondents about download speed.



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associated with the fastest speeds available. In the funding of the 2020 RDOF, FCC reported that nearly all of the over 5.2 million locations awarded will receive speeds of at least 100/20 Mbps.<sup>40</sup>

In addition to speed, reliability is important to many small businesses to be able to conduct their work. According to one academic study there are segments of business users—in health, finance, and transportation—that require high reliability to conduct their work.<sup>41</sup> According to a survey that included Vermont businesses, most small businesses ranked reliability first in importance in whether they would decide to switch broadband providers.<sup>42</sup> All 12 of the small business owners we interviewed underscored the importance of a reliable broadband connection. Put simply by one business owner, when the internet connection is down, he and his employees might as well go home. Another small business owner in rural Virginia who runs an accounting business out of her home said that she is generally happy to have satellite broadband service in her rural location, but the service is unreliable when it is raining. When the service is down, the interruption may jeopardized timely payroll for companies she serves. She said this has become more stressful with COVID-19 limiting the number of physical locations she may go to for back-up wireless service.

Two of the small business owners whom we talked to expressed a desire for better service at lower prices. For example, in Iowa, one business owner explained that he currently has two satellite accounts and a wireless hot spot, which total over \$350 per month. He stated that there are current infrastructure projects to build fiber networks in his area and that he hopes to soon consolidate to one account, which would provide faster, more reliable service, reportedly at half the cost. One owner of an inn and spa in Vermont told us that she pays \$78 a month for a 10 Mbps download speed, which is not sufficient to efficiently run her business. She said that lack of fast internet has deterred customers who have inquired about long-term stays during COVID-19. She called her current

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<sup>40</sup>This information is based on the initial results of the RDOF auction as announced by FCC in December 2020. Winning bidders are required to submit a post-auction application for support by January 29, 2021. The application will be reviewed by FCC before funding is allocated to providers. In some instances, providers can take more than 6 years to provide service.

<sup>41</sup>Shane Greenstein, "The Basic Economics of Internet Infrastructure" *Journal of Economic Perspectives*, Vol. 34, Number 2. Spring 2020, 192-214.

<sup>42</sup>Castleton Polling Institute, *2014 Vermont Non-residential Telecommunications Survey Report*, Prepared for the Vermont Public Service Department (August 2014).

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broadband provider, which is the local telephone company, and was told that to improve speeds to 40 Mbps download, it would cost \$335 a month, which she said is not viable for her business. She stated that she is located about 1.5 miles from a fiber line but is unaware of anyone currently investing to extend the fiber to her location.

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## FCC Has Not Recently Updated Its Broadband Speed Benchmark or Analyzed the Speed Needs of Small Businesses

As previously noted, FCC is responsible for determining the appropriate measure by which to assess whether a fixed service is providing advanced telecommunications capability. Pursuant to a directive in the 1996 Act, FCC annually reviews and considers whether the minimum benchmark speed it has set remains the appropriate measure or should be updated.<sup>43</sup> As previously noted, since 2015, FCC's speed benchmark for fixed broadband has remained at 25/3 Mbps.

Consistent with advances in technology, the minimum benchmark speeds that FCC has used to determine whether broadband is being deployed have dramatically increased over time from 1999 to 2015. Specifically, the benchmark has risen from 200 kbps in 1999 to 4/1 Mbps in 2010; and then it rose again in 2015 to 25/3 Mbps.<sup>44</sup> However, in its 2021 Broadband Deployment Report, FCC determined that the 2015 standard of 25/3 Mbps continues to meet the definition of advanced telecommunications capability.

Although FCC has not changed its benchmark speed in 6 years, FCC has reported on access to faster speed tiers. If FCC were to use one of these higher speed tiers to measure access—which as discussed above are more in line with what small businesses may need to effectively run a business—there would be a considerable drop in the percentage of the

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<sup>43</sup>Pub. L. No. 104-104, § 706, 110 Stat. at 153 (codified, as amended, at 47 U.S.C. § 1302).

<sup>44</sup>*In re Inquiry Concerning Deployment of Advanced Telecommunications Capability to all Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, FCC 99-5, para. 20 (Feb. 2, 1999). FCC determined in its first Broadband Deployment Report that the definition of broadband meant a capability to support upload and download speeds of 200 kbps. *Id.* Between 2000-2008, FCC changed this definition to 200 kbps in at least one direction. See, e.g., *Deployment of Advanced Telecommunications Capability*, FCC 00-290, para. 8 (Aug. 21, 2000).

population reported to have access to broadband, particularly in rural areas. The reduction in the percentage of the population with access to broadband does not mean people would lose their internet connection, but rather that their existing internet connections would be too slow to be considered “broadband” if the broadband benchmark were raised to a higher speed. For example, at present, internet connections slower than 25/3 Mbps are not considered “broadband,” such as those provided by dial-up access, or even DSL or cable connections if they are operating below 25/3 Mbps. According to FCC’s 2021 Broadband Deployment Report, only about 67 percent of rural Americans have access to 100/10 Mbps speeds, compared to about 83 percent at the current 25/3 Mbps benchmark speed; see table 3 below. Thus, were FCC to raise the benchmark from 25/3 to 100/10, its reporting would show that 67 percent of the rural population has broadband access, instead of 83 percent. Although this would not mean that broadband speeds had changed, it could demonstrate a need for further investment and/or network upgrades to make sure that access is keeping pace with increasing speed needs.

**Table 3: Percentage of Population with Access to Different Download/Upload Speed Tiers, According to 2019 Federal Communications Commission (FCC) data**

Area	25/3 megabits per second (Mbps)	50/5 Mbps	100/10 Mbps	250/25 Mbps
United States	95.6	93.8	91.7	87.2
Rural	82.7	74.9	66.8	55.6
Urban	98.8	98.4	97.8	95.0
Tribal	79.1	69.1	63.7	49.6

Source: 2021 Broadband Deployment Report, para.38, Fig.4. | GAO-21-494.

Recently, two FCC-commissioned advisory groups have suggested that higher speeds may be necessary. A December 2020 report issued by the FCC Broadband Deployment Advisory Council encouraged FCC to continue to update the broadband speed benchmark to account for higher capacity download and upload speeds sufficient to support current and future demand.<sup>45</sup> This report acknowledged potential differences in speed needs between residential and small businesses, although it does not suggest specific speeds that may be necessary. An October 2020 interim working group report from the FCC Precision Agriculture Connectivity Task Force, looking at the use of broadband in agriculture, which can include small farms, also recommended that the minimum benchmark be

<sup>45</sup>FCC Broadband Deployment Advisory Council, *Increasing Broadband Investment in Low-Income Communities Working Group* (December 2020).

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increased from 25/3 Mbps. This report stated there should be a particular focus on increasing upload speeds to accommodate the large amounts of data collected and analyzed for agriculture management. FCC officials stated that they would review and determine whether to follow the report's recommendations.

However, FCC has not assessed information on the speed needs of small businesses that would help inform future benchmark analyses. FCC officials told us they are unaware of any small-business-specific analysis that has been conducted or taken into consideration as the commission evaluates the minimum speed benchmark. FCC officials said they rely mostly on their broadband data and views of stakeholders submitted to the official record to make assessments related to the speed benchmark. Similarly, FCC officials told us they had not determined whether the commission's conclusion drawn in the FCC's Household Broadband Guide about certain download speed needs would also be applicable to small businesses. Specifically, the guide concluded that advanced services—such as video conferencing and telecommuting with four users or devices at a time—likely require more than FCC's minimum benchmark speed of 25 Mbps for downloads.<sup>46</sup> Without analyzing information about the speed needs of small businesses, FCC lacks assurance that its current speed benchmark is sufficient for supporting broadband access that meets the needs of the approximately 32 million small businesses in the United States.

Although FCC measurement of broadband focuses on speed, other metrics also measure important characteristics of broadband, such as reliability and cost, which we previously discussed may be important to small businesses. FCC has thus far chosen not to adopt additional benchmarks for its broadband deployment reports that would focus on "quality of service", stating that these metrics fall outside FCC's scope of inquiry and that reliable and sufficiently comprehensive data sources for such analysis have not been identified.<sup>47</sup> Previously, FCC considered collecting broadband price and service quality data from providers.<sup>48</sup> FCC decided against doing so, because commenters stated that submitting

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<sup>46</sup>FCC, *Household Broadband Guide* (Washington, D.C.: Updated February 2020).

<sup>47</sup>2021 *Broadband Deployment Report*, para.17.

<sup>48</sup>See *In re Modernizing the FCC Form 477 Data Program*, Notice of Proposed Rulemaking, FCC 11-14, para. 47 (Feb. 8, 2011); Report and Order, 28 FCC. Rcd. 9887, 9888 (June 27, 2013).

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such data would impose burdens on broadband providers, as we previously reported.<sup>49</sup> However, FCC has recently reported that competition—which can lead to improvements in price and quality of service—in the business data services broadband market has increased.<sup>50</sup> For more information about FCC rulemakings and information related to business data services, see appendix II.

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## SBA Supports Broadband Technical Assistance Offered through Its Partners and Advocates for Small Businesses on Related Issues

While FCC and RUS programs are focused on providing access to broadband—and are not specific to small businesses—SBA’s efforts are targeted at small businesses, but lack a specific focus on broadband. According to SBA officials we spoke with during our review, there are no ongoing projects or programs specifically aimed to address broadband access for small business. Furthermore, SBA’s strategic plan does not reference broadband specifically, though the plan mentions placing more emphasis on training and counseling in areas related to emerging technologies and online tools.<sup>51</sup> SBA officials told us that through their field resources, resource partner network, and continued work with federal partners, it supports broadband access for small businesses, especially for those in rural areas.

SBA partners with two national organizations that offer technical assistance and training to small businesses. These organizations offer small businesses training and technical assistance on a variety of topics, including how to use broadband to support their business. According to SBA officials, their partner organizations, summarized below, determine what broadband related information to provide to small businesses.

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<sup>49</sup>GAO, *Broadband: Additional Stakeholder Input Could Inform FCC Actions to Promote Competition*, [GAO-17-742](#) (Washington, D.C.: Sept. 19, 2017).

<sup>50</sup>As previously noted, business data services can be an important broadband connection for some small businesses. See *In re Business Data Services in an Internet Protocol Environment*, Report and Order on Remand and Memorandum Opinion and Order, FCC 19-66, paras. 15-41 (July 12, 2019).

<sup>51</sup>SBA. *Strategic Plan for fiscal years 2018-2022*.

- Small Business Development Centers (SBDC) form a nationwide network of almost 1,000 local organizations that support small businesses. Their offerings can range from basic business planning and management to assistance with website development, building e-commerce capacity, and supporting international export and trade. There are 20 technology SBDCs, which SBA officials told us provide a variety of technology and training related information to small businesses, including information about broadband. As part of recent laws passed to provide relief related to COVID-19, SBDCs received additional funding, and were authorized by SBA to spend a portion of the funding on outreach efforts to small businesses, especially those in rural areas.<sup>52</sup> One small business owner of a life coaching business we met with stated that her initial business plan did not include a broadband connection because she intended to conduct her business primarily in person. However, after working with a local SBDC advisor, she budgeted for a business broadband subscription, which became even more important when her business shifted fully online during the COVID-19 pandemic.
- SCORE is a national nonprofit organization that has 300 chapters with 10,000 volunteers serving as mentors for small businesses. In 2010, SCORE entered into a partnership with SBA and FCC for an initiative to increase digital literacy, web skills, e-commerce capabilities and online communications tools usage for small businesses. Although this initiative is no longer active, SCORE continues to offer training to small business owners to help them effectively use broadband. On SCORE.org, for example, there are live and recorded webinars as well as on-demand courses on a variety of topics including how to build a business website.

SBA also has cooperative agreements with 22 Veterans Business Outreach Centers across the country. The Veterans Business Outreach Centers program is designed to provide entrepreneurial development services to transitioning service members, veterans, National Guard & Reserve members, and military spouses interested in starting or growing a small business. According to SBA officials—similar to SBDCs and SCORE chapters—Veterans Business Outreach Centers offer counseling, resource partner referrals, and in-person and online business training.

In addition to the technical assistance offered by partners, multiple SBA offices coordinate with other federal agencies that have funding or are

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<sup>52</sup>See CARES Act, Pub. L. No. 116-136, 134 Stat. at 281, 294-96, 301-02.

conducting efforts that can otherwise affect small businesses' access to or use of broadband. For example, officials from SBA's Office of Rural Affairs—designed to serve rural small businesses by delivering resources and fostering strategic connections—explained that, in 2018, they identified that some small businesses in rural areas were unaware of SBA programs and services. To address this issue, SBA entered into an agreement with USDA to expand its reach to small businesses in rural communities. Among other things, this agreement promotes collaboration between the two agencies on technical assistance for small businesses, especially with respect to export and procurement of good and services, which is often conducted online. Officials stated that the agreement has helped ensure that SBA programs and services reach more remote rural areas, particularly those that do not have broadband access to identify SBA services online. Further, in January 2021, SBA coordinated with the departments of Labor and the Treasury to launch a digital e-learning platform, known as Ascent, to assist women entrepreneurs in expanding their small business.

SBA's Office of Advocacy conducts economic research on small business issues, disseminates small business statistics, and advocates on behalf of small businesses on regulatory issues with other federal agencies. For example, Advocacy advocated on behalf of small businesses during FCC's business data services proceeding, which we discussed above. According to officials, Advocacy also participates in the American Broadband Initiative, which seeks to promote broadband access to all community members including small businesses.

While there are a number of avenues for SBA to support small businesses' broadband needs, SBA officials told us there are no dedicated broadband working groups or other central coordinating mechanisms within the agency. Legislation proposed in 2020 includes a provision for the assignment of a senior official as a coordinator of broadband and emerging technology issues within SBA and with federal partners.<sup>53</sup> Our recent work at SBA has found opportunities for SBA to

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<sup>53</sup>See Small Business Broadband and Emerging Information Technology Enhancement Act of 2020, S. 4588, 116<sup>th</sup> Congress (2020). In March 2021, the Senate also introduced the Rural Capital Access Act. The bill includes provisions to strengthen coordination among SBA, USDA, and industry, including establishing an interagency working group. See Rural Capital Access Act, S. 1058, 117<sup>th</sup> Congress (2021).

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improve coordination with federal agencies and other partners.<sup>54</sup> Accordingly, we have made recommendations to SBA to pursue these opportunities; these recommendations have not yet been implemented.

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## Conclusions

Although FCC is charged with encouraging deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans, this increasingly essential service continues to be unavailable for some. Millions of small business owners continue to lack access to broadband that meets their needs. FCC's minimum speed benchmark of 25/3 Mbps is likely not fast enough to meet the needs of many small businesses, particularly with regard to upload speeds. As part of its annual review and reporting regarding broadband deployment FCC has not analyzed information related to broadband access by small businesses. Reviewing available information and soliciting input from stakeholders on how small businesses access broadband, including at what speeds, could provide key insights for future FCC determinations of advanced telecommunications capability and policies aimed towards achieving universal broadband access.

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## Recommendation for Executive Action

We are recommending that the Chair of FCC solicit input from stakeholders and conduct analysis of small businesses broadband speed needs and incorporate the results of this analysis into its determination of the benchmark for broadband. (Recommendation 1)

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## Agency Comments

We provided a draft of this report to FCC, NTIA, RUS, and SBA for review and comment. In its comments reproduced in appendix III, FCC agreed with the recommendation. NTIA, RUS, and SBA did not provide agency comments, and none of the agencies provided technical comments.

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<sup>54</sup>GAO, *Intellectual Property: Additional Agency Actions Can Improve Assistance to Small Businesses and Inventors*, [GAO-20-556](#) (Washington, D.C.: Aug. 27, 2020) and *Small Business Administration: Opportunities Exist to Strengthen Engagement with Historically Black Colleges and Universities*, [GAO-20-41](#) (Washington, D.C.: Nov. 13, 2019).



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We are sending copies of this report to the appropriate congressional committees, the Acting Chair of the FCC, the Secretary of Commerce, the Secretary of the Department of Agriculture, and the Administrator of SBA, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

If you or your staff any have questions about this report, please contact me at (202) 512-2834 or [VonahA@gao.gov](mailto:VonahA@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

A handwritten signature in black ink, appearing to read 'Andrew Von Ah', with a stylized, cursive script.

Andrew Von Ah  
Director, Physical Infrastructure Issues

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*List of Addressees*

The Honorable Maria Cantwell  
Chairwoman  
The Honorable Roger Wicker  
Ranking Member  
Committee on Commerce, Science, and Transportation  
United States Senate

The Honorable Ben Cardin  
Chairman  
The Honorable Rand Paul  
Ranking Member  
Committee on Small Business and Entrepreneurship  
United States Senate

The Honorable Frank Pallone, Jr.  
Chairman  
The Honorable Cathy McMorris Rodgers  
Ranking Member  
Committee on Energy and Commerce  
House of Representatives

The Honorable Nydia Velázquez  
Chairwoman  
The Honorable Blaine Luetkemeyer  
Ranking Member  
Committee on Small Business  
House of Representatives

The Honorable Jeanne Shaheen  
United States Senate

## Appendix I: Publicly Available Studies Reviewed

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### Surveys

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O'Mahony, John, and Sara Ma. *Connecting Small Businesses in the US*. Commissioned by Google. Deloitte 2018.

Pham, Nam, and Mary Donovan. *Unlocking the Digital Potential of Rural America*. Commissioned by Amazon. U.S. Chamber Technology Engagement Center (C\_TEC): 2019.

Wade, Holly, and Andrew Heritage. "Small Business Problems & Priorities" Tenth Edition. NFIB Research Center: 2020.

---

### Journal Articles

---

Boik, Andre. "The economics of universal service: An analysis of entry subsidies for high speed broadband" *Information Economics and Policy* 40 (2017): 13-20.

Greenstein, Shane, Chris Forman, and Avi Goldfarb. "How Geography Shapes—and Is Shaped by—the Internet." *The New Oxford Handbook of Economic Geography*. (February 2018).

Greenstein, Shane. "The Basic Economics of Internet Infrastructure." *Journal of Economic Perspectives* 34, no. 2 (Spring 2020): 192-214.

Kandilov, Amy, Ivan Kandilov, Xiangping Liu, and Mitch Renkow. "The Impact of Broadband on U.S. Agriculture: An Evaluation of the USDA Broadband Loan Program." *Applied Economic Perspectives and Policy* 39, no. 4 (March, 2017): 635-661.

Lobo, Bento, Md Rafayet Alam, and Brian Whitacre. "Broadband speed and unemployment rates: Data and measurement issues." *Telecommunications Policy* 44 (2019).

---

Richmond, William, Scott Rader, and Clinton Lanier. "The 'digital divide' for rural small businesses." *Journal of Research in Marketing and Entrepreneurship*. 19, no. 2 (2017): 94-104.

---

## Federal Studies

United States Department of Agriculture. *Report to the President of the United States from the Task Force on Agriculture and Rural Prosperity*. October 2017.

United States Department of Agriculture. *A Case For Rural Broadband: Insights on Rural Broadband Infrastructure and Next Generation Precision Agriculture Technologies*. April 2019.

Wilmoth, Daniel. *Accessing the Internet in Rural America*. Small Business Administration Office of Advocacy. Issue Brief No. 15, November 2019.

---

## State Studies

Castleton Polling Institute. *Vermont Non-residential Telecommunications Survey Report*. Prepared for the Vermont Public Service Department. August 2014.

The Center for Rural Pennsylvania Broadband Availability, a legislative agency of the Pennsylvania General Assembly. *Broadband Availability and Access in Rural Pennsylvania*. June 2019.

West Virginia Broadband Enhancement Council, 2018 Legislative Report. December 2018.

---

## Other Studies

Coleman, Bill. *Impact of CAF II-funded Networks: Lessons from Two Rural Minnesota Exchanges Left Underserved*. Blandin Foundation: June 2018.

Gallardo, Roberto and Benjamin St. Germain. *Southeastern Indiana Regional Planning Commission: State of Broadband*. Center for Regional Development Extension Purdue University: April 2019.

---

Liu, Yu-Hsin, Jeffrey Prince, and Scott Wallsten. *Distinguishing Bandwidth and Latency in Households' Willingness-to-Pay for Broadband Internet Speed*. Technology Policy Institute: August 2017.

Mossberger, Karen, Caroline Tolber, and Scott LaCombe. *A New Measure of Digital Participation and Its Impact on Economic Opportunity*. White Paper. March 2020.

Microsoft. *An Update on Connecting Rural America*. The 2018 Microsoft Airband Initiative.

Sallet, Jonathan. *Broadband for America's Future: A vision for the 2020s*. Benton Institute for Broadband and Society: October 2019.

Trostle, H.R. and Christopher Mitchell. *North Carolina Connectivity: The Good, The Bad, and The Ugly*. Institute for Local Self Reliance: October 2016.

Turner-Lee, Nicol. *From Rural Digital Divides to Local Solutions*. Brookings: May 2020.

## Appendix II: Recent Federal Communications Commission Actions Related to Business Data Services

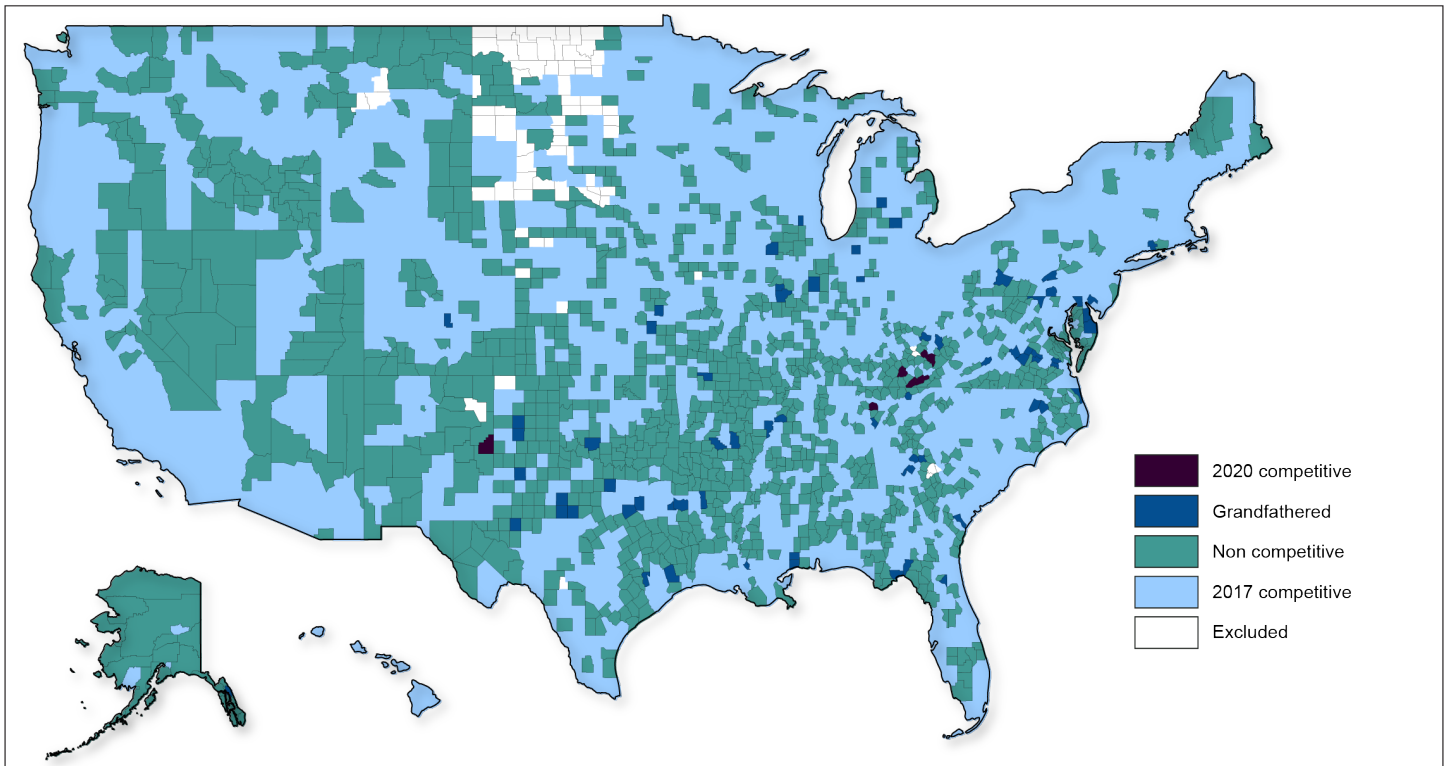
Historically, there was limited competition in the business data services broadband market, and therefore the government imposed caps on prices that providers could charge for these services. In 2017, FCC adopted criteria to assess competition for certain types of business data services offered by major providers.<sup>1</sup> Applying the criteria, FCC determined that certain types of business data services in about 58 percent (1,879) of counties in the U.S., Puerto Rico, and the Virgin Islands were deemed competitive and therefore lifted price cap regulation of those business data services offerings in those counties.<sup>2</sup> FCC reassesses this competition every 3 years, and in 2020 determined that an additional seven counties were competitive. See figure 4 below for a map of county designations.

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<sup>1</sup>*BDS Order*, paras. 94-14. These criteria, known as the competitive market test, are codified at 47 C.F.R. § 69.803. Following the 2017 proceeding, FCC applied its competitive market test to business data services that were offered by major providers in price cap areas at speeds of 1.5/1.5 Mbps and 45/45 Mbps, as well as other specific types of business data services offered by major providers that FCC identified.

<sup>2</sup>FCC also grandfathered in—or treated as competitive—69 counties. *BDS Order*, para. 132, fn. 402. After its 2017 deregulatory action, FCC took other actions related to business data services. These actions related to business data services provided by certain small, rural providers, and deregulating business data services used to connect infrastructure of providers. See *In re Regulation of Business Data Services for Rate-of-Return Local Exchange Carriers*, FCC 18-146 (Oct. 24, 2018).

**Figure 4: Counties Served by Major Providers That the Federal Communications Commission Deemed Competitive, Non-Competitive, and Grandfathered for Business Data Services**



Source: GAO analysis of Federal Communications Commission data. | GAO-21-494

Note: This map applies to certain types of business data services that were offered by major providers in areas that were previously subject to price caps. Some counties were excluded from FCC's regulatory approach because they did not have major providers that were previously price capped.

Since FCC's actions in 2017, we identified nine broadband providers that filed comments with FCC stating concerns that the cost of subscribing to business data services broadband has increased. Eight of these providers also stated that there has not been an increase in competition. However, FCC cited increased competition in a related report and order in 2019.<sup>3</sup> Given that FCC lacks comprehensive data on broadband price, as discussed above, there are limited data to understand whether and how

<sup>3</sup>In 2019, FCC continued its deregulatory actions related to business data services. FCC eliminated pricing regulation for certain types of business data services used to connect provider infrastructure known as transport. See *In re Business Data Services in an Internet Protocol Environment*, Report and Order on Remand and Memorandum Opinion and Order, FCC 19-66, paras. 15-41 (July 12, 2019).

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**Appendix II: Recent Federal Communications  
Commission Actions Related to Business Data  
Services**

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FCC's actions regarding business data services have affected small businesses. Nonetheless, FCC officials also told us, that based on their analysis of broadband data, competition has generally improved in the business data services broadband market.<sup>4</sup>

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<sup>4</sup>FCC has recently reported an increase in availability of business data services offered by cable broadband providers. See *id.* at paras. 26-28.



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## Appendix III: Comments from the Federal Communications Commission

**Appendix III: Comments from the Federal  
Communications Commission**



Federal Communications Commission  
Washington, D.C. 20554

June 28, 2021

Andrew Von Ah  
Director, Physical Infrastructure Issues  
Government Accountability Office  
441 G St, NW  
Washington, DC 20548

Dear Mr. Von Ah:

Thank you for the opportunity to review and comment on the U.S. Government Accountability Office (GAO) draft report entitled *FCC Should Analyze Small Business Broadband Speed Needs*. The Commission is deeply committed to delivering the essential benefits of broadband to all Americans, including the country's small businesses.

In the draft report, GAO recommends that the FCC should solicit stakeholder input and analyze small business broadband speed needs and incorporate the results of this analysis into the benchmark for broadband.

As part of the process of developing its annual report pursuant to Section 706 of the Telecommunications Act of 1996 to "determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion,"<sup>1</sup> the Commission seeks comment on a variety of issues surrounding the deployment of advanced telecommunications capability. One such issue is the speed benchmark, which the Commission has traditionally used to determine whether a fixed broadband service constitutes "advanced telecommunications capability" for the purposes of Section 706. While Section 706 does not explicitly contemplate a specific examination of small businesses, we agree that soliciting additional stakeholder input regarding small business broadband needs could assist the Commission in determining whether its fixed speed broadband benchmark is adequate to deliver "advanced telecommunications capability." Therefore, consistent with GAO's recommendation, we intend to seek comment on this topic in conjunction with our Section 706 inquiry and our efforts to close the digital divide and deliver broadband to all Americans.

Thank you again for the opportunity to respond to the recommendations in the draft report. We look forward to working with GAO in the future.

Sincerely,

A handwritten signature in blue ink, reading "Kris A. Monteith", is written over a horizontal line.

Kris A. Monteith  
Chief  
Wireline Competition Bureau

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<sup>1</sup> 47 U.S.C. § 1302(b).

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## Accessible Text for Appendix III: Comments from the Federal Communications Commission

June 28, 2021

Andrew Von Ah  
Director, Physical Infrastructure Issues  
Government Accountability Office  
441 G St, NW  
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**Appendix III: Comments from the Federal  
Communications Commission**

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Sincerely,

Kris A. Monteith  
Chief  
Wireline Competition Bureau

<sup>1</sup> 47 U.S.C. § 1302(b).

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## Appendix IV: GAO Contact and Staff Acknowledgements

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### GAO Contact

Andrew Von Ah, (202) 512-2834 or [vonaha@gao.gov](mailto:vonaha@gao.gov)

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### Staff Acknowledgments

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