

Report to Congressional Committees

April 2023

BROADBAND SPEED

FCC Should Improve Its Communication of Advanced Telecommunications Capability Assessments

## GAO Highlights

Highlights of GAO-23-105655, a report to congressional committees

### Why GAO Did This Study

Access to broadband is critical for daily life. The Telecommunications Act of 1996 requires FCC to: (1) assess annually whether advanced telecommunications capability—which includes high-speed broadband—is being deployed in the U.S. in a reasonable and timely fashion, and (2) take action to accelerate deployment if FCC finds deployment is lacking. FCC sets a broadband upload and download speed benchmark as a metric for making this determination.

The Infrastructure Investment and Jobs Act includes a provision for GAO to review FCC's establishing, reviewing, and updating of the broadband speed benchmark. Among other things, this report examines the extent to which FCC has communicated how it reviews, and determines whether to update, the benchmark.

GAO reviewed relevant laws, regulations, and agency documents, and compared FCC's efforts to assess broadband deployment to FCC's strategic plan and relevant internal controls. GAO also interviewed FCC, selected federal and state officials; industry associations; broadband providers; and research organizations, to obtain their views on FCC's process.

#### What GAO Recommends

GAO is recommending that the FCC's Chair provide consistent communication in its reporting on how FCC determines whether advanced telecommunications capability is being deployed and when updating the related metrics that FCC uses to assess broadband speeds and deployment. FCC agreed with this recommendation.

View GAO-23-105655. For more information, contact Andrew Von Ah at 202-512-2834 or vonaha@gao.gov.

#### April 202

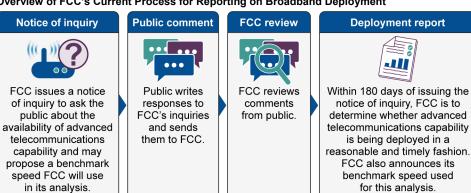
### **BROADBAND SPEED**

## FCC Should Improve Its Communication of Advanced Telecommunications Capability Assessments

#### What GAO Found

The Federal Communications Commission (FCC) is required by statute to assess the deployment of broadband across the U.S. Although not explicitly required to do so, FCC uses its discretion to set a minimum fixed broadband speed that it uses as a benchmark. Since 2015, FCC has set this benchmark at 25/3 megabits per second (Mbps)—that is, 25 Mbps when downloading, which refers to the bits per second that travel to a user's device, and 3 Mbps when uploading, which refers to the bits per second that travel from a user's device. As part of its annual assessment of broadband deployment, FCC determines whether to change its broadband speed benchmark by soliciting public comment and analyzing information. See figure below for an overview of FCC's current process for reporting on broadband deployment.

### Overview of FCC's Current Process for Reporting on Broadband Deployment



Source: GAO analysis of Federal Communications Commission (FCC) information. | GAO-23-105655

In examining FCC's six reports issued between 2015 and 2021, GAO found inconsistencies in the reported scope of FCC's analysis of benchmark speed and its reported rationale for updating or not updating the benchmark. For example:

- In five of the six reports, FCC reported on whether the current benchmark was sufficient for purposes such as video conferencing, but did not report on this in 2019.
- In the 2015 report, FCC considered future speed needs in its analysis; however, the other five reports did not discuss future speed needs, although FCC had received public comments on this topic.
- In the 2015 report, when FCC most recently changed the benchmark, it
  explained its rationale for making this change more thoroughly by citing
  research and its own data analysis. In contrast, in others years, FCC offered
  shorter, less thorough explanations.

Without consistently communicating the scope of its analysis and its rationale for setting the benchmark, FCC's reporting lacks transparency. Reporting on these issues in a more consistent manner year to year would provide stakeholders' better assurance that FCC's conclusions are not arbitrary.

### Contents

Letter		1
	Background	4
	FCC Has Not Consistently Communicated How It Reviews and Determines Whether to Update Its Broadband Speed Benchmark Broadband Deployment Programs' Speed Requirements Vary, Which Stakeholders Said Could Lead to Funding Overlap,	10
	among Other Issues	14
	Conclusions	18
	Recommendation for Executive Action	19
	Agency Comments	19
Appendix I	Objectives, Scope, and Methodology	23
Appendix II	Comments from the Federal Communications Commission	26
Appendix III	GAO Contact and Staff Acknowledgments	27
Tables		
	Table 1: Selected Federal Programs That Fund Broadband Deployment Table 2: Broadband Speed Eligibility and Minimum Build-out Requirements of Selected Federal Broadband	9
	Deployment Programs	14
	Table 3: List of Stakeholders Interviewed	25
Figures		
	Figure 1: Examples of Broadband Download and Upload Activities	0
	and Uses Figure 2: Overview of FCC's Current Process for Issuing a	6
	Broadband Deployment Report	6
	Figure 3: Timeline of FCC Broadband Deployment-Related	
	Notices of Inquiry and Reports, 2008–2022	8

### **Abbreviations**

BEAD Broadband Equity, Access, and Deployment FCC Federal Communications Commission

Gbps gigabit per second Mbps megabits per second

NTIA National Telecommunications and Information Administration

the act Telecommunications Act of 1996
Treasury Department of the Treasury
USDA U.S. Department of Agriculture

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

April 25, 2023

#### **Congressional Committees**

Access to high-speed internet, or broadband, has become critical for daily life as everyday activities like work, school, and health care appointments increasingly occur online. Broadband also helps provide access to economic opportunity and civic engagement. However, many Americans lack sufficient access to broadband services. About 13 percent of U.S. households did not have access to broadband internet service, according to the U.S. Census Bureau's latest data.¹ Furthermore, according to a recent report, people living in rural areas, low-income areas, and some predominantly Black, Hispanic, and tribal communities are disproportionately affected by a lack of broadband.²

The Telecommunications Act of 1996 requires the Federal Communications Commission (FCC) to assess broadband deployment on an annual basis, specifically by issuing a notice of inquiry and determining whether advanced telecommunications capability is being deployed in a reasonable and timely fashion.<sup>3</sup> According to FCC, a notice of inquiry asks the public to comment on specific questions about an issue. The responses help FCC determine if further action by the commission is warranted. As part of making that determination, FCC has set a speed benchmark defining when "fixed broadband service"—that is service that is fixed to a specific location such as a home, as opposed to mobile broadband service—provides advanced telecommunications capability. FCC uses this benchmark to assess broadband deployment across the country, solicits public comment from stakeholders on the status of broadband deployment and the fixed speed benchmark, among other topics, and issues a report on the findings. The law does not explicitly

<sup>&</sup>lt;sup>1</sup>In the Census Bureau's American Community Survey, broadband is defined as high-speed internet service, such as cable, fiber optic, or DSL service.

<sup>&</sup>lt;sup>2</sup>Sarah Atske and Andrew Perrin, *Home Broadband Adoption, Computer Ownership Vary by Race, Ethnicity in the U.S.*, Pew Research Center (Washington, D.C.: Jul. 16, 2021).

<sup>&</sup>lt;sup>3</sup>Section 706 of the Telecommunications Act of 1996, as amended by the Broadband Data Improvement Act, requires FCC to determine annually whether "advanced telecommunications capability" is being deployed to all Americans in a reasonable and timely fashion. 47 U.S.C. § 1302(b). Advanced telecommunications capability is defined as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology. 47 U.S.C. § 1302(d)(1).

require FCC to set a benchmark speed to measure deployment of advanced telecommunications capability or to follow a set process for measuring deployment, beyond issuing a notice of inquiry and completing it within 180 days.

The federal government and some state governments have both engaged in efforts to increase broadband availability in the U.S., and FCC and other federal agencies—such as the Department of Commerce's National Telecommunications and Information Administration (NTIA), the U.S. Department of Agriculture's (USDA) Rural Utilities Service, and the Department of the Treasury (Treasury) — provide funding to bring broadband service to areas and communities that lack sufficient access.<sup>4</sup>

Agencies' broadband deployment programs generally use their own criteria to determine which areas are eligible or prioritized for receiving funds. Such criteria include broadband speed thresholds, which have a different purpose than the benchmark FCC uses to assess deployment. Generally, as defined by such thresholds, areas with broadband available above the program's designated threshold speed are not eligible for funding, and areas lacking broadband at that speed are eligible. Additionally, providers that receive funding must deploy infrastructure capable of providing at least minimum broadband speeds set by the program requirements.

States may also have speed requirements to which providers must build their networks for the broadband infrastructure projects the states' fund or to determine funding eligibility set forth in law. Additionally, states may also have broadband speed goals established in strategic-planning documentation, such as state broadband plans, though these goals are separate from broadband programs' speed thresholds.<sup>5</sup>

<sup>&</sup>lt;sup>4</sup>For more information on federal efforts to fund broadband infrastructure and reduce the digital divide, see our report: GAO, *Broadband: National Strategy Needed to Guide Federal Efforts to Reduce Digital Divide*, GAO-22-104611, (Washington, DC: May 31, 2022).

<sup>&</sup>lt;sup>5</sup>Broadband plans help guide states' efforts to expand high-speed internet access. Specifically, these plans can lay out steps for broadband deployment, set standards to ensure that resources target unserved and underserved communities, and establish metrics by which to measure progress. Since 2021, some federal programs, such as NTIA's State Digital Equity Capacity Grant Program, require states to develop broadband plans to qualify for funding.

The Infrastructure Investment and Jobs Act included a provision for us to review FCC's process for establishing, reviewing, and updating the upload and download speed benchmark for broadband access.<sup>6</sup> This report examines two objectives:

- 1. The extent to which FCC has communicated how it reviews its minimum fixed-broadband speed benchmark, and how it determines whether to update the benchmark.
- 2. The extent to which the minimum speed requirements of selected federal and state broadband programs differ from FCC's benchmark, and stakeholders' views on any implications of these differences.

To assess the extent to which FCC communicates how it reviews and updates its broadband benchmark, we reviewed relevant laws and related agency documents from 2014—the year FCC started its annual assessment of broadband deployment that set the current benchmark speed—through 2021, the most recent year for which FCC reviewed the benchmark. We also interviewed FCC officials about this process, including what factors they consider, and how they analyze and incorporate stakeholders' feedback. We compared FCC's analysis and discussion of stakeholder comments and its interview statements on the benchmark setting process to FCC's goals in its current strategic plan. We also compared FCC's analysis and discussion of stakeholder comments to Standards for Internal Control in the Federal Government's principles related to using and communicating quality information and defining objectives, specifically in a manner that permits consistent measurement of progress.

We also interviewed stakeholders on FCC's process for setting and communicating its benchmark. Stakeholders selected included representatives of five broadband service providers offering internet connections using varying technologies, eight broadband industry associations, and five organizations that conduct research on broadband. We selected these groups based on whether they provided comments to FCC through its notice of inquiry regarding broadband speeds, participated in our previous work, and recommendations from stakeholders. In addition, we conducted semi-structured interviews with telecommunications policy officials from seven states, (Alaska, Louisiana, Minnesota, Montana, North Dakota, Virginia, and West Virginia), selected

<sup>&</sup>lt;sup>6</sup>Pub. L. No. 117-58, § 60505, 135 Stat. 429, 1245 (2021).

to obtain a variety of population densities, sizes, fixed broadband subscription rates, and broadband speed goals.

To determine the extent to which minimum speed requirements of selected federal and state broadband programs differ from FCC's benchmark and stakeholders' views on any implications of these differences, we reviewed laws, regulations, and rules that establish speed requirements or goals for selected federal and state broadband deployment programs. We interviewed officials from agencies with broadband deployment funding programs: FCC, USDA, NTIA, and Treasury. We also interviewed officials from the seven selected states and the stakeholders described above. A more detailed explanation of our scope and methodology is in appendix I.

We conducted this performance audit from January 2022 to April 2023 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.

### Background

## FCC's Role in Assessing Broadband Deployment

The Telecommunications Act of 1996 (the act) requires FCC to annually assess whether advanced telecommunications capability—a term that includes high-speed broadband—"is being deployed to all Americans in a reasonable and timely fashion."<sup>7</sup> FCC started these assessments in 1998. Further, the act requires FCC to take immediate action to accelerate deployment by promoting competition and removing barriers to infrastructure investment when FCC's assessment concludes that advanced telecommunications capability deployment is not reasonable and timely.<sup>8</sup> For example, in response to negative determinations, FCC allocated additional funding to broadband deployment in 2011; studied how economic incentives might support deployment in rural areas in 2014; asked stakeholders about what additional steps FCC could take to

<sup>747</sup> U.S.C. §1302(b).

<sup>847</sup> U.S.C. §1302(b).

support deployment in 2015; and took steps to increase broadband in schools and make broadband more affordable in 2016.

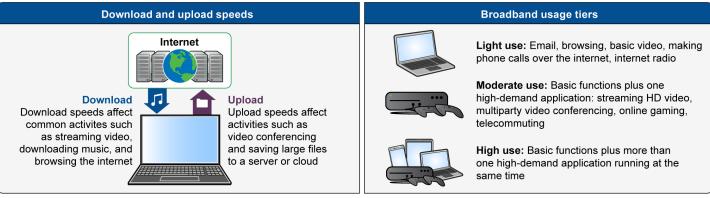
As part of its determination as to whether advanced telecommunications capability is being deployed in a reasonable and timely fashion, FCC uses a fixed broadband speed benchmark as a key metric. Section 706 of the Telecommunications Act of 1996 does not explicitly require FCC to set a benchmark speed to measure deployment of advanced telecommunications capability or specify a process for measuring deployment, beyond issuing a notice of inquiry and completing it within 180 days.

In the past, FCC has questioned whether a different metric might be more appropriate. For example, in 2017, FCC asked stakeholders whether it should continue to use a speed-based benchmark or a speed-based benchmark in combination with other measures, or use only an alternative method to measure deployment. After considering these stakeholder comments, in 2018 FCC stated that it would continue to measure deployment against a benchmark. Since 2015, FCC has set this speed benchmark at 25/3 Mbps—that is, 25 megabits per second (Mbps) when downloading, which refers to the number of bits per second that travel to a user's device, and 3 Mbps when uploading, which refers to the number of bits per second that travel from a user's device. See figure 1 for examples of broadband download and upload activities and uses.

As of March 2023, FCC had last issued a deployment report in January 2021. In July 2022, FCC Chairwoman Jessica Rosenworcel circulated a draft notice of inquiry to her colleagues in which she cited changing uses of the Internet as reasons to increase the benchmark to 100/20 Mbps. Since the 2021 report, FCC has not released this draft notice or any other notice of inquiry to solicit public comments on this issue. Since January 2021, FCC's leadership has been comprised of four members, rather than a full commission of five members.

<sup>&</sup>lt;sup>9</sup>FCC does not consider internet service at speeds lower than 25/3 Mbps to provide advanced telecommunications capability.

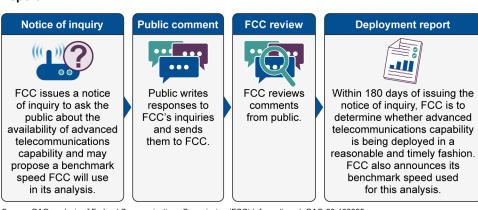
Figure 1: Examples of Broadband Download and Upload Activities and Uses



Source: GAO analysis of Federal Communications Commission (FCC) information. | GAO-23-105655

FCC has taken multiple steps to review and update its broadband benchmark as part of its determinations as to whether advanced telecommunications capability was being deployed in a reasonable and timely fashion. As part of this process, FCC obtained the perspectives from a range of stakeholders through its notice of inquiry process, made these comments available to the public, and issued a deployment report with FCC's determination. Stakeholders who provided comment to FCC generally included broadband service providers, academics and researchers, industry associations, and private citizens. See figure 2 for an overview of FCC's current process for issuing its deployment report.

Figure 2: Overview of FCC's Current Process for Issuing a Broadband Deployment Report



Source: GAO analysis of Federal Communications Commission (FCC) information. | GAO-23-105655

In FCC's January 2021 Broadband Deployment Report, the most recently issued report, the agency found that 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 and that advanced telecommunications capability was being deployed in a reasonable and timely fashion. In the 2021 report, FCC also stated that 25/3 Mbps remains an appropriate measure to assess broadband deployment. The benchmark has remained unchanged since 2015.

Since beginning these assessments in response to the act, FCC has assessed broadband deployment on a roughly annual basis, although there have been some longer gaps between assessments. FCC did not issue a notice of inquiry in 2021 or 2022, and its most recent deployment report was issued in January 2021, as noted. In addition, FCC released a notice of inquiry in August 2016, but did not release a corresponding deployment report. Similarly, FCC did not release a notice of inquiry or deployment report from August 2012 to August 2014. See figure 3 for a timeline of FCC's notices of inquiry and broadband deployment reports.

Figure 3: Timeline of FCC Broadband Deployment-Related Notices of Inquiry and Reports, 2008–2022 Notice of inquiry adoption date (?) **Broadband** benchmark Deployment report adoption date (1) [Download/upload, Year Deployment Notice of in megabytes per report<sup>b</sup> Inquirya 2008 second (Mbps)] July 31 2009 July 16 2010 4 Mbs/ Sixth Broadband Sixth 1 Mbs Deployment Report Aug 6 May 20 2011 4 Mbs/ Seventh Broadband Seventh 1 Mbs **Progress Report** 4 Mbs/ Aug 5 Aug 14 2012 Eighth Broadband Eighth Progress Report 1 Mbs Jan 29 Not applicable Ninth No report issued<sup>d</sup> 2015 (NA) 2015 Broadband Progress Report Aug 1 Jan 29 2014 20 2015 25 Mbs/ and Notice of Inquiry on Immediate Tenth 3 Mbs Action to Accelerate Deployment Aug 6 Jan 28 2015 2016 25 Mbs/ 2016 Broadband Eleventh Progress Report 3 Mbs Aug 2 2016 Twelfth No report issued NA Aug 8 Peb 2 2018 2018 Broadband 25 Mbs/ **Thirteenth** Deployment Report 3 Mbs 2019 Broadband 25 Mbs/ Aug 8 2018 May 8 2019 **Fourteenth** Deployment Report 3 Mbs 2020 Broadband 25 Mbs/ Fifteenth Deployment Report 3 Mbs Aug 7 Jan13 2020 0 2021 Fourteenth Broadband 25 Mbs/ Sixteenth

Source: GAO analysis of Federal Communications Commission information. | GAO-23-105655

<sup>a</sup>FCC issues a notice of inquiry in which it asks stakeholders to comment on the broadband speed benchmark and the extent of broadband deployment, among other issues.

<sup>b</sup>Within 180 days of issuing the notice of inquiry, the Telecommunications Act of 1996 requires FCC to determine whether advanced telecommunications capability is being deployed in a reasonable and timely manner. In its deployment reports, FCC also states whether it is changing the broadband speed benchmark.

Deployment Report

<sup>c</sup>To determine whether advanced telecommunications capability is being deployed in a reasonable and timely fashion, FCC sets a minimum speed that serves as its fixed speed benchmark for defining advanced telecommunications capability.

<sup>d</sup>On January 29, 2015, FCC issued an order to conclude the Ninth Broadband Progress Notice of Inquiry.

3 Mbs

# Federal and State Support for Broadband Deployment

Multiple federal agencies administer programs to invest federal funds for broadband deployment. <sup>10</sup> Table 1 provides examples of federal programs that fund deployment of broadband infrastructure.

Agency	Program and description		
Federal Communications Commission (FCC)	<ul> <li>Connect America Fund Phase II Auction: This fund subsidizes service providers building new network infrastructure; performing network upgrades to areas lacking voice and/or broadband service; or maintaining service. This program, which first distributed funds in 2019, is providing about \$1.5 billion over 10 years to provide fixed broadband and voice services to over 700,000 locations in 45 states.</li> </ul>		
	<ul> <li>Rural Digital Opportunity Fund: Established on January 30, 2020, this fund supports broadband service to consumers in certain rural areas that lack service of at least 25/3 Megabits per second (Mbps). The commission has authorized over \$6 billion to disburse over 10 years to bring fixed broadband and voice service to millions of unserved homes and small businesses in rural America.</li> </ul>		
Department of Agriculture's Rural Utilities Service	<ul> <li>Rural eConnectivity Program (ReConnect): Established by the Consolidated Appropriations Act, 2018, this program offers loans, grants, and loan/grant combinations to facilitate broadband deployment in rural areas that do not currently have sufficient access to broadband. From 2019- 2020, USDA awarded over \$1.5 billion through this program.</li> </ul>		
Department of Commerce's National Telecommunications and Information Administration (NTIA)	<ul> <li>Broadband Equity, Access, and Deployment (BEAD) Program: Established by the Infrastructure Investment and Jobs Act in 2021, this program provides funding to states, territories, and the District of Columbia for projects that support broadband planning, deployment, mapping, and adoption. The BEAD Program was appropriated over \$42 billion.</li> </ul>		
	<ul> <li>Broadband Infrastructure Program: This program, which was appropriated \$300 million, provides grants to partnerships between a state, or one or more political subdivisions of a state, and providers of fixed broadband service to support broadband infrastructure deployment to areas lacking broadband, especially rural areas. To date, NTIA has awarded 14 grants, totaling more than \$287 million.</li> </ul>		
	<ul> <li>Tribal Broadband Connectivity Program: This program, which was appropriated \$3 billion, provides grants to tribal governments and other eligible entities to be used for broadband deployment on tribal lands, as well as for telehealth, distance learning, and broadband affordability. NTIA has awarded nearly \$1.7 billion under the initial notice of funding opportunity and intends to announce another round of funding in 2023.</li> </ul>		
Department of the Treasury's Office of Recovery Programs	<ul> <li>Capital Projects Fund (CPF): The American Rescue Plan Act of 2021 appropriated \$10 billion to the Department of the Treasury to provide payments to states, territories, and tribal governments for capital projects enabling work, education, and health monitoring, including remote options. To date, Treasury has approved 39 states to invest approximately \$5.9 billion of the CFP in affordable reliable high-speed internet, which those states estimate will reach more than 1.75 million locations.</li> </ul>		

Sources: GAO analysis of relevant statutes, regulations, and agency information. I GAO-23-105655

Note: GAO selected these programs because they are some of the largest programs funding broadband deployment and are administered by FCC or agencies that coordinate with FCC to fund broadband deployment.

<sup>&</sup>lt;sup>10</sup>In our May 2022 review, we found there are more than 100 broadband programs administered by 15 federal agencies. In addition to broadband deployment funding, some programs help plan infrastructure, make service affordable, provide devices, and build digital skills.

States also promote broadband deployment. For example, some states have laws or broadband plans that set state speed goals that are linked to inducements, such as tax incentives, for providers that deploy broadband. In addition, some states have programs to directly fund providers to deploy broadband.

FCC Has Not Consistently Communicated How It Reviews and Determines Whether to Update Its Broadband Speed Benchmark As discussed above, FCC's process for assessing the broadband speed benchmark involves soliciting and considering public comments on whether such deployment is proceeding in a reasonable and timely manner. To inquire about this issue, FCC asks the public to comment on questions it includes in the notice of inquiry that initiates a review.

FCC's approach for considering public comments is consistent with its strategic plan, which has a goal to "maintain a commitment to transparent and responsive processes that encourage public involvement and serves the public good." Additionally, Standards for Internal Control in the Federal Government states that federal agencies should use and communicate quality information and define objectives in a manner that permits them to measure progress in a consistent manner. These standards describe quality information as appropriate, current, complete, accurate, accessible, and timely.

However, our analysis of notices of inquiry and deployment reports shows that FCC has not consistently communicated from year to year how it reviews the broadband speed benchmark and determines whether to update it. Specifically, in examining FCC's notices of inquiry and deployment reports from 2014 to 2021, we found inconsistencies in the scope of FCC's analysis of the benchmark speed and in the explanation of FCC's rationale for updating or not updating the benchmark. As a result, FCC's reporting of how it sets the broadband speed benchmark has not been fully transparent.

**Scope of analysis**. The scope of FCC's analysis of the broadband speed benchmark reflected in deployment reports it issued from 2015 to 2021 varied, and FCC did not fully explain this variation in the reports. As a result, it is unclear whether FCC reported complete and appropriate information to the public each year. For example:

 In deployment reports from 2015 to 2018 and from 2020 to 2021, FCC discussed whether the 25/3 Mbps benchmark speed was sufficient for

<sup>&</sup>lt;sup>11</sup>Federal Communications Commission, *Strategic Plan Fiscal Years 2022-2026*, (Washington, D.C.: March 2022).

certain types of internet applications, such as high-definition video conferencing. In each of those years, FCC concluded it was. However, FCC did not discuss this topic in 2019.

- In the deployment reports it issued from 2015 to 2019, FCC discussed household broadband adoption by rates of speed, and in 2015 and 2016 it discussed the speed requirements of multiple devices being used in a home simultaneously. FCC did not discuss these topics in its 2020 or 2021 deployment reports.
- In 2015, FCC discussed whether potentially higher speed needs of future broadband applications should be a consideration in determining the benchmark. FCC did not discuss this topic in its deployment reports from 2016 to 2021, although comments submitted in multiple years to FCC raised this as an important consideration.
- The questions FCC asked in its notices of inquiry varied from 2014 to 2020, indicating that FCC intended to report different types of information from year to year. For example, in 2014, 2016, and 2017, FCC asked whether it should consider higher speed needs of future broadband applications in determining the benchmark. FCC did not ask about future speed needs in 2018, 2019, or 2020, however.

A specific issue FCC included in its analysis in 2015 but not in 2020 is whether setting the benchmark should represent an "aspirational or forward-looking" speed. In its 2015 deployment report, FCC interpreted the Telecommunications Act of 1996 as mandating a benchmark set in consideration of future broadband needs. FCC stated that the act "is focused exclusively on the availability of advanced services," indicating "the Commission should focus on services that are progressive or ahead in development." To support this view, FCC cited the legislative history of the act, and FCC's analysis of the meaning of "advanced telecommunications capability."

FCC interpreted the act differently in its 2020 deployment report, in which it agreed with and cited a commenter who wrote that "adopting a 'forward-looking' or 'aspirational' definition, as some recommend, distorts the purpose of the analysis Congress has required the Commission to perform." FCC did not provide any further explanation for why it changed its interpretation of the act. Instead, FCC said it disagreed with stakeholders that supported a 1,000/1,000 Mbps benchmark because few people subscribe to such speeds. However, FCC did not address the multiple stakeholders that called for increasing the benchmark to 50 or 100 Mbps for downloading, nor did it assess whether these speeds would represent an aspirational benchmark.

**Explanations of rationale**. The extent to which FCC's deployment reports from 2015 to 2021 provided a rationale for increasing or maintaining the broadband speed benchmark, and the types of information they cited to support these determinations, varied from year to year. As a result, it is unclear whether FCC consistently used complete and appropriate sources of information.

In 2015, FCC provided an explanation of its rationale for increasing or maintaining the benchmark that cited research and its own analysis of data. When it increased the benchmark in 2015, FCC explained its decision by citing research and analyzing data on speeds offered by providers, the speed needs of common and emerging applications, and the number of devices used simultaneously in a typical household. In its report, FCC cited multiple sources in addition to the comments it received.

By contrast, in subsequent years, FCC's reports offered shorter, less thorough explanations of its rationale for maintaining the benchmark. For example, in its 2020 deployment report, FCC stated that the current benchmark remained an appropriate measure because 25/3 Mbps service enabled "users to originate and receive high-quality voice, data, graphics, and video telecommunications." However, FCC did not provide support or evidence for this statement. In this report, FCC also stated that it agreed with commenters that said the benchmark was appropriate, but only devoted five sentences to explaining its reasoning. In contrast, in the 2015 report, FCC's discussion of its reasons for increasing the benchmark spanned multiple pages and dozens of paragraphs.

In addition, FCC has provided various reasons for why it does or does not consider changing uses of the internet as a factor in increasing the benchmark from year to year. For example, in its 2015 deployment report, FCC cited changing uses of the internet as a reason to increase the benchmark. However, in 2021, FCC disagreed with commenters that called for an increase in the benchmark in response to increased use of services such as telework platforms, distance learning, telehealth, and video conferencing during the COVID-19 pandemic. Some of these commenters cited their own research showing increasing demand for higher upload and download speeds. FCC stated that it disagreed with these commenters because the benchmark does not represent the "highest quality service possible." Further, FCC stated that it agreed with commenters that cited research indicating increased use of video conferencing and telework platforms do not necessitate higher broadband speeds. However, FCC did not provide evidence or analysis to support its

decision to agree or disagree with these commenters. Four of five service providers, all eight industry associations, officials from five of seven selected states, and one of five broadband research organizations we interviewed stated that it would be helpful for FCC to base its decision to increase or maintain the benchmark on data related to actual broadband use and applications.

When asked about FCC's decision-making process, FCC officials told us the determining factors in setting the benchmark are the views of the commissioners and their interpretations of comments received. Further, officials stated they do not have internal metrics or standards that signal to the agency the benchmark should be increased or maintained. Accordingly, the information used to make the determination is at the discretion of the FCC chair and commissioners.

Without transparently communicating the scope of its analysis of the benchmark speed and its rationale for setting the benchmark, FCC cannot provide stakeholders with assurance that the benchmark represents an appropriate measure of actual broadband uses and needs. Additionally, it cannot provide assurance that FCC is measuring progress consistently and taking sufficient action to ensure advanced telecommunications capability is being deployed in a reasonable and timely manner.

Further, in our 2021 report on the broadband needs of small businesses, we found that speeds higher than the broadband benchmark are likely necessary for small businesses. We recommended that FCC solicit input from stakeholders and conduct analysis of small business broadband speed needs and incorporate the results of this analysis into its determination of the benchmark. FCC agreed with this recommendation but has not implemented it, as of March 2023. If FCC does not transparently communicate the scope of its analysis and rationale for maintaining the current benchmark, small businesses also lack the assurance that the service at FCC's benchmark will meet their needs.

<sup>&</sup>lt;sup>12</sup>GAO, *Broadband*: *FCC Should Analyze Small Business Speed Needs*, GAO-21-494 (Washington, D.C: July 8, 2021).

Broadband
Deployment
Programs' Speed
Requirements Vary,
Which Stakeholders
Said Could Lead to
Funding Overlap,
among Other Issues

Selected Federal and State Broadband Speed Requirements Vary and Are Not Linked to FCC's Benchmark Federal and state broadband speed goals or requirements vary among programs we reviewed. For example, among the federal programs we reviewed, the speed used to determine eligibility or prioritization ranged from 10/1 Mbps to 100/20 Mbps, while the minimum buildout speed requirement ranged from 10/1 Mbps to 100/100 Mbps. <sup>13</sup> These requirements were either set by the agency or required by statute. Table 2 below illustrates the variance of the speed eligibility and minimum buildout speed requirements among the selected federal programs.

Table 2: Broadband Speed Eligibility and Minimum Build-out Requirements of Selected Federal Broadband Deployment Programs

Agency	Program	Application or Auction Dates	Speed Used to Determine Eligibility or Priority <sup>a</sup>	Minimum Build- out Speed Requirement	Source of Threshold
Federal Communications Commission (FCC)	Connect America Fund Phase II Competitive Bidding Process	2018	10/1 megabits per second (Mbps)	10/1 Mbps <sup>b</sup>	Set by agency
FCC	Rural Digital Opportunity Fund	2020	25/3 Mbps	25/3 Mbps <sup>b</sup>	Set by agency
U.S. Department of Agriculture (USDA)	ReConnect Rounds 1 and 2 <sup>c</sup>	2019-2020	10/1 Mbps	25/3 Mbps	Set by statute and agency <sup>d</sup>
USDA	ReConnect Rounds 3 and 4	2021-2022	100/20 Mbps	100/100 Mbps	Set by statute and agency <sup>e</sup>

<sup>&</sup>lt;sup>13</sup>FCC and other federal programs that provide funding for broadband deployment generally have speed thresholds to determine which areas are eligible or prioritized to receive funds. These programs also have broadband buildout requirements and providers must build their federally funded networks to provide at least the minimum required program speeds.

Agency	Program	Application or Auction Dates	Speed Used to Determine Eligibility or Priority <sup>a</sup>	Minimum Build- out Speed Requirement	Source of Threshold
National Telecommunications and Information Administration (NTIA)	Broadband Equity, Access, and Deployment (BEAD) Program	2022	25/3 Mbps & 100/20 Mbps <sup>f</sup>	100/20 Mbps	Set by statute
NTIA	Broadband Infrastructure Program	2021	25/3 Mbps	25/3 Mbps	Set by statute
NTIA	Tribal Broadband Connectivity Program	2021	25/3 Mbps	25/3 Mbps	Set by statute and agency <sup>g</sup>
Department of the Treasury	Capital Projects Fund	2021	N/A <sup>h</sup>	100/100 Mbps	Set by agency

Source: GAO analysis of relevant statutes, regulations, and agency information. I GAO-23-105655

<sup>a</sup>Program requirements may include other provisions, such as establishing certain percentages of households that must lack access to these threshold speeds or establishing exceptions to the requirements.

<sup>b</sup>Recipients under this program are required to offer broadband speeds based on the performance tier under which they bid. The table identifies the requirement for the minimum performance tier. However, according to FCC, providers are offering broadband speeds that far exceed minimum requirements.

<sup>c</sup>USDA's ReConnect program has had four rounds of grant- or loan-funding awards for broadband providers. Some requirements, including speed requirements, have differed among these rounds.

<sup>d</sup>The Consolidated Appropriations Act, 2018 set the 10/1 Mbps threshold for this program and directed the Secretary of Agriculture to reevaluate the threshold on an annual basis. Pub. L. No. 115-141, § 779, 132 Stat. 348, 399 (2018).

eThe CARES Act, enacted before Round 3, used 10/1 Mbps to define eligibility for this program and directed the Secretary of Agriculture to reevaluate the threshold on an annual basis. Pub. L. No. 116-136, § 11004, 134 Stat. 281, 510 (2020). The Infrastructure Investment and Jobs Act (IIJA), enacted before Round 4, uses 25/3 Mbps to define eligibility and sets a minimum build-out speed of at least 100/20 Mbps. Pub. L. No. 117-58, div. J, tit. I, 135 Stat. 429, 1351 (2021). USDA officials told us they interpret the IIJA provisions as minimums and that USDA may increase the threshold speeds.

fUnder the BEAD program, after certifying that states will ensure coverage of broadband service to all broadband-serviceable locations lacking 25/3 Mbps and then prioritizing projects for areas lacking 100/20 Mbps, states may use funding to connect community anchor institutions, such as schools, libraries, and medical providers, that lack access to gigabit-level broadband service.

<sup>9</sup>While the Consolidated Appropriations Act, 2021 does not include an explicit build-out requirement for broadband speeds if the recipients use these funds for broadband infrastructure deployment, it does require recipients to prioritize deploying to households lacking 25/3 Mbps. The Notice of Funding Opportunity states that recipients may use funds to provide "qualifying broadband service," which is defined as 25/3 Mbps.

<sup>h</sup>While the Capital Projects Fund does not require that areas with certain speeds be eligible or prioritized, recipients are encouraged to prioritize projects for areas lacking service of at least 100/20 Mbps.

Similarly, the speed goals of the seven state broadband programs we reviewed also varied, ranging from 10/1 Mbps for Virginia to 1 Gbps/1

Gbps for North Dakota. 14 Respectively, these speed goals are below and far above FCC's current 25/3 Mbps benchmark. Additionally, four of the states' speeds goals were the same as FCC's benchmark—those of Alaska, Louisiana, Minnesota, and West Virginia.

Federal and state agencies administering broadband deployment programs are not required to use FCC's broadband speed benchmark when setting speed requirements or goals. However, officials from some federal and state agencies stated that they have considered and used FCC's benchmark when doing so. For example, officials from one state told us their governor's task force on broadband recommended that FCC's benchmark of 25/3 Mbps be established by executive order as the state's speed goal and its metric for measuring deployment. FCC officials said states may decide on their own initiative to use FCC's benchmark to determine eligible areas for broadband deployment funding, and that the agency has not coordinated with any state on doing so.

Stakeholders Cited the
Potential for Overlap and
Other Implications of
Varying Speed
Requirements of Selected
Federal Broadband
Deployment Programs

Stakeholders we interviewed identified implications associated with varying speed requirements of federal broadband programs. <sup>15</sup> These implications included the potential of overlap among areas with funding awards, inequities in service to eligible areas, and the added confusion for providers and states when navigating among programs.

Potential for award area overlap. Representatives of five broadband providers, five telecommunications industry associations, five states, and one broadband research organization said differing broadband speed requirements among federal programs could result in overlap—i.e., when separate programs fund deployment in the same area, for the same population, or for the same purpose. We recently reported that differing speed requirements among programs could contribute to award area overlap. For example, we found that in 2015, FCC awarded a provider with Connect America Fund Phase II funding to serve an area at 10/1

<sup>&</sup>lt;sup>14</sup>One gigabit per second (Gbps) equals 1000 megabits per second (Mbps).

<sup>&</sup>lt;sup>15</sup>As mentioned above, we interviewed representatives of five broadband service providers offering internet connections using varying technologies; eight broadband industry associations; and five organizations that conduct research on broadband.

Mbps, and in 2018, USDA awarded a provider to serve the same area at 25/3 Mbps with a Community Connect grant.<sup>16</sup>

We previously reported that agencies work to avoid award area overlap through data sharing, regular meetings, and other efforts.<sup>17</sup> For example, since 2014, FCC and RUS have had an interagency agreement to share data on locations of broadband projects funded and have met regularly to share data and coordinate their programs. After authorization of several new broadband programs, NTIA has joined these efforts. In June 2021 in response to a requirement in the Consolidated Appropriations Act, 2021—FCC, USDA, and NTIA signed an interagency agreement to share data on their broadband deployment-funding programs in order to coordinate their respective distribution of funds. 18 To carry out the 2021 agreement, officials from FCC, RUS, and NTIA said they meet regularly. In addition, officials from the Department of the Treasury have joined these meetings to coordinate the agency's new broadband-related programs with those of FCC, NTIA, and RUS, according to agency officials. In May 2022, the four agencies signed a memorandum of understanding regarding information sharing for their broadband programs.

### Inequities in broadband speeds provided to eligible areas.

Representatives from four telecommunications industry associations, one research organization, and one provider told us that inconsistent speed requirements contribute to inequities in the services provided to consumers, which could add to the challenges of closing the digital divide. For example, providers may offer higher speeds to eligible areas using funds from a federal program requiring higher speed tiers, and other providers could serve adjacent areas with lower speeds as allowed by a different federal program.

**Confusing program requirements**. Four telecommunication industry representatives and officials from two states said that varying speed requirements contribute to confusion for providers when navigating among programs. According to a few broadband providers, the variance among speed requirements for different federal broadband deployment

<sup>&</sup>lt;sup>16</sup>GAO-22-104611. From 2015-2020, USDA, through its Community Connect Grant Program, awarded \$132 million for the construction of broadband infrastructure networks.

<sup>&</sup>lt;sup>17</sup>GAO-22-104611.

<sup>&</sup>lt;sup>18</sup>See Pub. L. No. 116-260, div. FF, tit. IX, § 904, 134 Stat. 1182, 3214–15 (2020) (codified at 47 U.S.C. § 1308).

programs adds complexity to the task of figuring out which programs to apply for and meeting the agency's program requirements. We previously reported that stakeholders cited challenges associated with using overlapping federal programs. These challenges included difficulty determining relevant programs, using programs in a complementary way, and unintended results from program provisions intended to prevent duplication.<sup>19</sup>

The gradual evolution of broadband programs has contributed to programmatic differences and to having broadband speeds that do not align. Specifically, agencies have adapted their authority under existing programs as the need for broadband has increased, and statutes have created new programs to address specific needs. For example, several new programs were established to support increased broadband needs and uses during the COVID-19 pandemic, such as Treasury's Coronavirus Capital Projects Fund.

We previously reported that programmatic differences, including varying speed requirements, limit federal agencies' ability to align programs. <sup>20</sup> In that report, we recommended that the Executive Office of the President, through the National Economic Council, develop and implement a national broadband strategy with clear roles, goals, objectives, and performance measures to support better management of fragmented, overlapping federal broadband programs and synchronize coordination efforts. The Executive Office of the President did not take a position on this recommendation, and as of March 2023, the recommendation has not been implemented.

### Conclusions

FCC has developed a minimum broadband speed benchmark as its metric for measuring the extent of advanced telecommunications capability deployment in the U.S., which has significance beyond merely reporting on deployed speeds. When FCC has found that broadband at this level is not being deployed in a reasonable and timely fashion, the agency has taken steps to support deployment, such as allocating more funding. In addition, some federal agencies have used the FCC benchmark when setting eligibility and build-out speeds for their broadband deployment programs and some states consider the benchmark when setting their broadband goals. Despite the significance of the benchmark, FCC's reporting of the analysis and data it considers

<sup>&</sup>lt;sup>19</sup>GAO-22-104611.

<sup>&</sup>lt;sup>20</sup>GAO-22-104611.

when assessing whether to raise the speed benchmark has been inconsistent and therefore falls short of FCC's goal of having a transparent process. FCC could demonstrate greater transparency and help assure the public that the benchmark is connected to actual broadband use and needs by reporting the scope of and steps of its research and analysis, the data and analysis used to support its assertions, and the rationale for why it agrees or disagrees with the stakeholder comments it receives. Moreover, by reporting publicly on its analysis, the public would better understand FCC's decision making and be less likely to see decisions regarding the benchmark as arbitrary.

## Recommendation for Executive Action

We are making the following recommendation to FCC:

FCC's chair should provide consistent communication in its reporting of how it determines whether advanced telecommunications capability is being deployed and when updating the related metrics it uses to assess broadband speeds and deployment. For example, FCC could report to the public the scope and steps of its research and analysis, the data and analysis used to support its assertions, and the rationale for why it agrees or disagrees with stakeholder comments it receives.

(Recommendation 1)

### **Agency Comments**

We provided a draft of this report to FCC, NTIA, USDA, and Treasury for review and comment. In its comments reproduced in appendix II, FCC agreed with the recommendation and said that it will revise the draft notice of inquiry to seek comment on ways the FCC can provide consistent and transparent communications to the public about how it reviews and determines whether to update its evaluation metrics of advanced telecommunications capability. FCC and Treasury also provided technical comments, which we incorporated as appropriate. NTIA and USDA officials said they did not have any comments.

We are sending copies of this report to the appropriate congressional committees, the Chairwoman of FCC, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of the Treasury, 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 have any questions about this report, please contact me at (202) 512-2834) or 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 III.

Andrew Von Ah

Director, Physical Infrastructure Issues

#### List of Committees

The Honorable Debbie Stabenow

Chair

The Honorable John Boozman

Ranking Member

Committee on Agriculture, Nutrition, and Forestry

United States Senate

The Honorable Maria Cantwell

Chair

The Honorable Ted Cruz

Ranking Member

Committee on Commerce, Science, and Transportation

**United States Senate** 

The Honorable Thomas Carper

Chair

The Honorable Shelley Moore Capito

Ranking Member

Committee on Environment and Public Works

**United States Senate** 

The Honorable Chris Van Hollen

Chair

The Honorable Bill Hagerty

Ranking Member

Subcommittee on Financial Services and General Government

Committee on Appropriations

**United States Senate** 

The Honorable Glenn Thompson

Chair

The Honorable David Scott

Ranking Member

Committee on Agriculture

House of Representatives

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

The Honorable Sam Graves
Chair
The Honorable Rick Larsen
Ranking Member
Committee on Transportation and Infrastructure
House of Representatives

The Honorable Steve Womack
Chairman
The Honorable Steny Hoyer
Ranking Member
Subcommittee on Financial Services and General Government
Committee on Appropriations
House of Representatives

# Appendix I: Objectives, Scope, and Methodology

This report examines: (1) the extent to which FCC has communicated how it reviews its minimum fixed broadband speed benchmark, and how it determines whether or not to update the benchmark, and (2) the extent to which the minimum speed requirements of selected federal and state broadband programs differ from FCC's benchmark, and stakeholders' views on any implications of these differences.

To assess the extent to which FCC has communicated how it reviews and updates its broadband speed benchmark, we reviewed agency documents, including the notices of inquiry and deployment reports from FCC's proceedings to assess broadband deployment, from 2014 through 2021. Specifically, we reviewed each FCC notice of inquiry issued during this period and identified questions FCC posed to stakeholders and whether the commission indicated it planned to increase the benchmark. When reviewing each deployment report, we identified the report section FCC devoted to reviewing the benchmark, identified FCC statements and responses to comments, and noted any rationale FCC provided. We also reviewed relevant laws and internal documents to identify program requirements that direct FCC's process for assessing broadband deployment.

We interviewed FCC officials about its benchmark setting process, including what factors they consider, such as future broadband speed needs and the effects of changing uses of the internet, and how they analyze and incorporate stakeholder feedback. We compared FCC's analysis and discussion of stakeholder comments and its interview statements on the benchmark setting process to FCC's current strategic plan and Standards for Internal Control in the Federal Government principles related to using and communicating quality information and defining objectives, specifically in a manner that is consistent. For additional information on how FCC schedules its review process, we consulted FCC's website and developed a timeline of each notice of inquiry and deployment report from 2009 to 2021.

To obtain stakeholder views on FCC's process for setting and communicating its benchmark, we conducted interviews with a variety of stakeholders. Specifically, we spoke with five representatives of broadband service providers offering internet connections, based on the following criteria:

range of technologies (i.e., cable, fiber, fixed wireless, and satellite);

- range of size (according to the percentage of the U.S. population that their network can serve, according to FCC data);
- whether the broadband service provider provided congressional testimony or participated in our previous work;
- whether the service provider commented during FCC's notice of inquiry process; and
- whether the service provider served any of our selected states.

We also interviewed eight representatives of telecommunications industry associations, and five representatives of research groups that work on telecommunications policy issues to obtain their views on FCC's benchmarking process. We selected these groups based on whether they provided comments to FCC through its notice of inquiry regarding broadband speeds, participated in our previous work, and the recommendations from stakeholders. Lastly, we conducted semi-structured interviews with telecommunications policy officials from seven states, (Alaska, Louisiana, Minnesota, Montana, North Dakota, Virginia, and West Virginia), selected to obtain a variety of population densities, land areas, fixed broadband subscription rates, and broadband speed goals. See Table 3 below for the list of stakeholders interviewed.

To determine the extent to which minimum speed requirements of selected federal and state broadband programs differ from FCC's benchmark, we reviewed laws, regulations, and rules that establish speed requirements or goals for selected federal and state broadband deployment programs. We also interviewed officials from agencies with the largest broadband deployment funding programs: FCC, Department of Agriculture's Rural Utilities Service, Department of Commerce's National Telecommunications and Information Administration, and Department of the Treasury. During these interviews, we asked agency officials whether and how they set minimum speed requirements of the programs they administer and the implications, if any, of broadband speed requirements that vary among programs. To obtain stakeholder views on these topics, we interviewed officials from the seven states described above, as well as the stakeholders we previously identified.

We conducted this performance audit from January 2022 through April 2023 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

Appendix I: Objectives, Scope, and Methodology

that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Table 3: List of Stakeholders Interviewed
Telecommunications Industry Associations
Fiber Broadband Association
National Rural Electric Cooperative Association
National Tribal Telecommunications Association
NCTA – The Internet and Television Association
NTCA – The Rural Broadband Association
Satellite Industry Association
Telecommunications Industry Association
U.S. Telecom
States
Alaska
Louisiana
Minnesota
Montana
North Dakota
Virginia
West Virginia
Broadband Research Organizations
Benton Institute
Free Press
Deloitte
Pew Charitable Trusts
Public Knowledge
Broadband Service Providers
Charter Communications
Frontier Communications
Hughes Network Systems
Midco
Verizon

Source: GAO. I GAO-23-105655

# Appendix II: Comments from the Federal Communications Commission



Federal Communications Commission Washington, D.C. 20554

April 4, 2023

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

Dear Mr. Von Ah:

We have reviewed the Government Accountability Office's (GAO) draft report, "Broadband Speed: FCC Should Improve its Communication of Advanced Telecommunications Capability Assessments."

GAO recommends that the Chair of the Federal Communications Commission (FCC) provide consistent communication in the FCC's reporting of how it determines whether advanced telecommunications capability (ATC) is being deployed in a reasonable and timely fashion and when updating related metrics it uses to assess ATC speeds and deployment. We agree that transparency and consistency are important principles to follow as the FCC determines whether ATC is being deployed in a reasonable and timely fashion to all Americans. Moreover, the FCC is committed to data-driven decisions on the ATC evaluation metrics, as well as vigorous engagement with the record that is developed as part of the public comment process. Toward that end, the FCC Chairwoman has circulated to her fellow Commissioners a draft Section 706 Report Notice of Inquiry. We will revise that Notice of Inquiry to seek comment on ways the FCC can provide consistent and transparent communications to the public about how it reviews, and determines whether to update, the ATC evaluation metrics. Adoption of the Notice of Inquiry, and any subsequent changes to the FCC's ATC reporting language, metrics, and methodology, are not controlled solely by the FCC Chair and must be approved by a majority of sitting FCC Commissioners.

Thank you for the opportunity to comment on your recommendation.

Sincerely,

Trent B. Harkrader

Chief, Wireless Competition Bureau Federal Communications Commission

1 & 13 1 Jell\_

# Appendix III: GAO Contact and Staff Acknowledgments

GAO	Contact

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

### Staff Acknowledgments

In addition to the contact named above, Andrew Huddleston (Assistant Director), Antoine Clark (Analyst in Charge), Jason Coates, Saar Dagani, Dan Luo, Joshua Ormond, Madhav Panwar, Monica Perez-Nelson, Kelly Rubin, Mike Soressi, Janet Temko-Blinder, and Laurel Voloder made key contributions to this report.

GAO's Mission	The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.
Obtaining Copies of GAO Reports and Testimony	The fastest and easiest way to obtain copies of GAO documents at no cost is through our website. Each weekday afternoon, GAO posts on its website newly released reports, testimony, and correspondence. You can also subscribe to GAO's email updates to receive notification of newly posted products.
Order by Phone	The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's website, https://www.gao.gov/ordering.htm.
	Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.
	Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.
Connect with GAO	Connect with GAO on Facebook, Flickr, Twitter, and YouTube. Subscribe to our RSS Feeds or Email Updates. Listen to our Podcasts. Visit GAO on the web at https://www.gao.gov.
To Report Fraud,	Contact FraudNet:
Waste, and Abuse in	Website: https://www.gao.gov/about/what-gao-does/fraudnet
Federal Programs	Automated answering system: (800) 424-5454 or (202) 512-7700
Congressional Relations	A. Nicole Clowers, Managing Director, ClowersA@gao.gov, (202) 512-4400, U.S. Government Accountability Office, 441 G Street NW, Room 7125, Washington, DC 20548
Public Affairs	Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800 U.S. Government Accountability Office, 441 G Street NW, Room 7149 Washington, DC 20548
Strategic Planning and External Liaison	Stephen J. Sanford, Managing Director, spel@gao.gov, (202) 512-4707 U.S. Government Accountability Office, 441 G Street NW, Room 7814, Washington, DC 20548