



September 2018

BROADBAND INTERNET

FCC's Data Overstate Access on Tribal Lands

Accessible Version

GAO Highlights

Highlights of [GAO-18-630](#), a report to congressional requesters

Why GAO Did This Study

Broadband furthers economic development, educational attainment, and public health and safety; however, residents of tribal lands have lower levels of broadband access relative to the U.S. population. Congress has prioritized identifying and targeting funds to unserved areas. FCC uses data from broadband providers to develop maps and reports depicting broadband availability in the United States, with specific information on tribal lands. GAO was asked to review FCC's efforts to collect broadband data for tribal lands.

This report examines the extent to which: (1) FCC's approach to collecting broadband data accurately captures broadband access on tribal lands and (2) FCC obtains tribal input on the data. GAO interviewed stakeholders from 25 tribal governments or tribally owned providers, and visited nine tribal lands. The selected tribes varied geographically and in levels of broadband availability, among other characteristics. GAO also reviewed FCC's rulemakings on broadband data and interviewed other tribal stakeholders, FCC officials, and 13 non-tribal broadband providers selected to include a diversity of technologies. Provider and tribal interviews were based on non-generalizable samples.

What GAO Recommends

GAO is making three recommendations to FCC, including that it collect and report data that accurately measure tribal broadband access as well as develop a process to obtain tribal input on the accuracy of the data. FCC agreed with the recommendations.

View [GAO-18-630](#). For more information, contact Mark L. Goldstein at (202) 512-2834 or goldsteinm@gao.gov.

September 2018

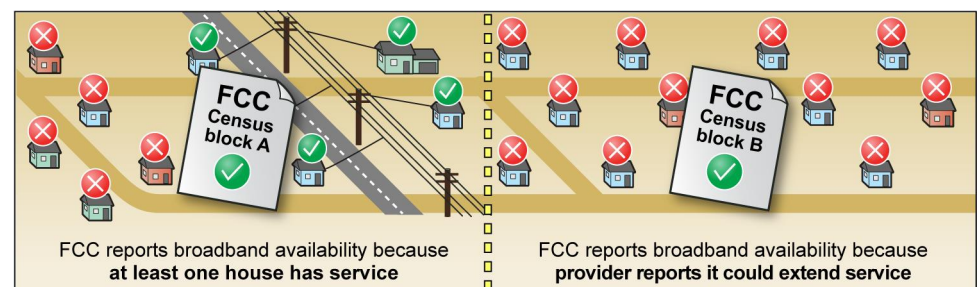
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What GAO Found

The Federal Communications Commission (FCC) collects data on broadband availability from providers, but these data do not accurately or completely capture broadband access on tribal lands. Specifically, FCC collects data on broadband availability; these data capture where providers may have broadband infrastructure. However, FCC considers broadband to be "available" for an entire census block if the provider *could serve at least one* location in the census block. This leads to overstatements of service for specific locations like tribal lands (see figure). FCC, tribal stakeholders, and providers have noted that this approach leads to overstatements of broadband availability. Because FCC uses these data to measure broadband access, it also overstates broadband access—the ability to obtain service—on tribal lands.

Overstatement of Broadband Availability in FCC's Data



Source: GAO analysis of Federal Communications Commission (FCC) documents. | [GAO-18-630](#)

Additionally, FCC does not collect information on several factors—such as affordability, quality, and denials of service—that FCC and tribal stakeholders stated can affect the extent to which Americans living on tribal lands can access broadband services. FCC provides broadband funding for unserved areas based on its broadband data. Overstatements of access limit FCC's and tribal stakeholders' abilities to target broadband funding to such areas. For example, some tribal officials stated that inaccurate data have affected their ability to plan their own broadband networks and obtain funding to address broadband gaps on their lands. By developing and implementing methods for collecting and reporting accurate and complete data on broadband access specific to tribal lands, FCC would be better able to target federal broadband funding to tribal areas that need it the most and to more accurately assess FCC's progress toward its goal of increasing all Americans' access to affordable broadband.

FCC does not have a formal process to obtain tribal input on the accuracy of provider-submitted broadband data. In the *National Broadband Plan*, FCC highlighted the need for a targeted approach to improve broadband availability data for tribal lands. As outlined in the plan, such an approach would include working with tribes to ensure that information is accurate and useful. About half of the tribal stakeholders GAO interviewed raised concerns that FCC relies solely on data from providers, and most stated FCC should work with tribes to improve the accuracy of FCC's data. Establishing a formal process to obtain input from tribal governments on the accuracy of provider-submitted broadband data could help improve the accuracy of FCC's broadband data for tribal lands.

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Abbreviations

DSL	digital subscriber line
FCC	Federal Communications Commission
GPRA	Government Performance and Results Act
GPRAMA	GPRA Modernization Act of 2010
LTE	long-term evolution
Mbps	megabits per second
NCAI	National Congress of American Indians
NTIA	National Telecommunications & Information Administration
ONAP	Office of Native Affairs and Policy
Recovery Act	American Recovery and Reinvestment Act of 2009
USDA	United States Department of Agriculture

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September 7, 2018

The Honorable John Hoeven
Chairman
The Honorable Tom Udall
Vice Chairman
Committee on Indian Affairs
United States Senate

The Honorable John Barrasso
The Honorable Maria Cantwell
The Honorable Steve Daines
The Honorable Martin Heinrich
The Honorable Heidi Heitkamp
The Honorable Brian Schatz
The Honorable Jon Tester
United States Senate

Broadband infrastructure is critical for economic development, educational and job opportunities, and public health and safety. In 2016, we reported that tribal lands are generally in remote and rugged areas and that broadband access can help residents develop online businesses, access telemedicine services, and use online educational tools.¹ However, residents of tribal lands have lower levels of broadband access than residents of non-tribal lands; a reflection of what is often called the “digital divide,” or disparate levels of broadband access among different socioeconomic, racial, or rural groups. According to the Federal Communications Commission (FCC), as of December 2016, 35.4 percent of Americans residing on tribal lands lacked access to fixed broadband

¹ GAO, *Telecommunications: Additional Coordination and Performance Measurement Needed for High-Speed Internet Access Programs on Tribal Lands*, [GAO-16-222](#) (Washington, D.C.: Jan. 29, 2016).

services, compared to 7.7 percent of all Americans.² FCC has reported that the lack of service in tribal lands presents impediments to the efforts of tribal nations related to self-governance, economic opportunity, education, public safety, and cultural preservation.³

One barrier to increasing access to broadband on tribal lands is the cost of deploying infrastructure to tribal lands located in rugged, sparsely populated areas. In an attempt to address this and other issues, the federal and some state governments have administered a number of programs to incentivize companies to build broadband infrastructure in unserved and underserved areas. In addition, policy makers have noted the need for accurate information in order to target these programs to the areas lacking access, and FCC has identified the need to work with tribes to ensure such data are accurate for tribal lands. However, in 2016 we reported that tribal and federal officials had concerns that the federal map of broadband availability at the time (the National Broadband Map) did not accurately depict broadband availability on tribal lands.⁴

The federal government has not updated the National Broadband Map since April 2015, with the last update containing data as of June 30, 2014.⁵ Currently, the primary source of information regarding where

² For the purposes of this report, to determine which high-speed internet services qualify as “broadband,” we are using the threshold for “advanced telecommunications capability” as used by FCC in its 2018 *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2018 Broadband Deployment Report, 33 FCC Rcd 1660 (2018) (Broadband Deployment Report). Therefore, the estimate of broadband access above refers to services capable of providing speeds of 25 megabits per second (Mbps) download and 3 Mbps upload. Megabits per second is a measure of the network’s data transfer rate (speed) and refers to the number of bits per second that travel to a user’s device (the download speed) and from a user’s device (the upload speed). The estimate also does not include satellite services, as FCC currently reports on these services separately and until recently, satellite providers were not capable of providing broadband speeds, according to FCC officials. For the purposes of this analysis, mobile broadband refers to long-term evolution (LTE) services. LTE is an industry standard that is part of the fourth generation of wireless telecommunications technology, which is currently in common use.

³ *Improving Communications Services for Native Nations*, Notice of Inquiry, 26 FCC Rcd 2672, 2673 (2011).

⁴ [GAO-16-222](#).

⁵ However, Congress recently provided \$7.5 million to the National Telecommunications and Information Administration (NTIA) to update the National Broadband Map in conjunction with FCC and the states. Consolidated Appropriations Act, 2018, Pub. L. No. 115-141, 132 Stat. 348 (2018). In addition, as discussed later, FCC began collecting and creating maps of its own broadband data.

broadband is and is not available is the FCC, which collects this information from broadband providers. You asked us to review FCC's efforts to collect broadband data for tribal lands. This report examines:

- the extent to which FCC's approach to collecting broadband availability data accurately captures the ability of Americans living on tribal lands to access broadband Internet services, and
- the extent to which FCC obtains tribal input on the accuracy of provider-submitted broadband data for tribal lands.

To address both objectives, we analyzed FCC's December 2016—the most recent data at the time of our review—fixed and mobile broadband-availability data for federally recognized tribal lands.⁶ Providers currently report this information to FCC by filing a Form 477, twice a year. We also used 2010 U.S. Census data to identify census blocks on tribal lands. To assess the reliability of FCC and Census data, we reviewed a previous GAO reliability assessment and performed additional work, such as electronic testing of the data and interviews with agency officials.⁷ Based on the results of our analysis, we determined the data to be reliable for our purposes, which were to (1) inform our selection of tribal governments and providers for interviews and visits and (2) develop maps of fixed and mobile broadband availability for the 9 tribal lands we selected for visits, in order to obtain tribal representatives' feedback on the accuracy of the data. For both objectives, we also reviewed FCC documents regarding the Form 477 process and interviewed FCC officials as well as stakeholders representing tribal governments and broadband providers. These interviews included representatives from 25 tribal governments or tribally owned providers, including visits to 9 tribal lands. When we selected these tribes, we considered variation in location, level of

⁶ We defined federally recognized tribal lands consistent with FCC's definition in its 2018 Broadband Deployment Report. Specifically, we considered tribal lands to be: (1) Joint Use Areas; (2) legal federally recognized American Indian area consisting of reservation and associated off-reservation trust land; (3) legal federally recognized American Indian area consisting of reservation only; (4) legal federally recognized American Indian area consisting of off-reservation trust land only; (5) Statistical American Indian area defined for a federally recognized tribe that does not have reservation or off-reservation trust land, specifically a Tribal Designated Statistical Area (TDSA) or Oklahoma Tribal Statistical Area (OTSA); (6) Alaskan Native village statistical area; and (7) Hawaiian Home Lands established by the Hawaiian Homes Commission Act of 1921. See 33 FCC Rcd 1660 (2018).

⁷ We reviewed the data reliability assessment from GAO, *Broadband: Additional Stakeholder Input Could Inform FCC Actions to Promote Competition*, [GAO-17-742](#) (Washington, D.C.: Sept. 19, 2017).

broadband deployment according to FCC, land mass, and population size and density. The results of our interviews are not generalizable to all tribal governments or tribally owned broadband providers. In addition to tribal governments and tribally owned providers, we interviewed six organizations that include tribal entities and four stakeholders who work with tribes on broadband issues. For reporting purposes, we developed the following series of indefinite quantifiers to describe the tribal responses from the 35 entities representing tribal stakeholders we interviewed.

- 3 to 7 is defined as “a few.”
- 8 to 15 is described as “some,”
- 16 to 20 is described as “about half,”
- 21 to 27 is described as “most”; and
- 28 to 34 is described as “almost all.”

Further, to obtain industry perspectives, we reviewed public comments submitted by providers and industry associations in relevant FCC rulemaking proceedings and interviewed 10 non-tribally owned fixed and mobile broadband providers and three industry associations. We selected providers to reflect a range of carrier size, as well as the technologies used to provide broadband service. In addition, we interviewed representatives from other government entities, as well as private companies that collect and report broadband data. The results of these interviews are not generalizable. A full list of the stakeholders we interviewed can be found in appendix I.

In addition, to identify the extent to which FCC’s approach to collecting broadband data accurately captures Americans’ ability to access broadband Internet services on tribal lands, we identified factors that affect broadband access by interviewing tribal stakeholders, as described above, and reviewing FCC documents and previous GAO work.⁸ We also reviewed relevant statutes and FCC’s proceedings, plans, and broadband

⁸ [GAO-16-222](#).

deployment and progress reports.⁹ We compared the Form 477 process to FCC's strategic goals and to factors affecting broadband access to determine the extent to which the Form 477 collects information on those factors and aligns with FCC's goals. We further evaluated this information against the *Government Performance and Results Act (GPR)*, as enhanced by the *GPR Modernization Act of 2010 (GPRAMA)* and *Standards for Internal Control in the Federal Government*.¹⁰

To determine the extent to which FCC obtains tribal input on the accuracy of provider-submitted broadband data for tribal lands, we reviewed FCC's policies for working with tribal governments and interviewed tribal stakeholders, among other entities.¹¹ We compared this information to recommendations from FCC's *National Broadband Plan*, and *Standards for Internal Control in the Federal Government*.¹² For additional details on our scope and methodology, see appendix II.

We conducted this performance audit from June 2017 to September 2018 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

⁹ *Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, 32 FCC Rcd 6329 (2017); *Connect America Fund Universal Service Reform – Mobility Fund*, Order on Reconsideration and Second Report and Order, 32 FCC Rcd 6282 (2017); *Instructions for Filing 4G LTE Coverage Data to Determine Areas Presumptively Eligible for Mobility Fund II Support*, Public Notice, 32 FCC Rcd 7023 (2017). FCC, *Strategic Plan 2018-2022* (Washington, D.C.); FCC, *Connecting America: The National Broadband Plan*; 33 FCC Rcd 1660 (2018); *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2016 Broadband Progress Report, 31 FCC Rcd 699 (2016) "Broadband Progress Report."

¹⁰ Government Performance and Results Act, Pub. L. No. 103-62, 107 Stat. 285 (1993), as enhanced by GPR Modernization Act of 2010, Pub. L. No. 111-352, 124 Stat. 3866 (2011); GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

¹¹ *Statement of Policy on Establishing a Government-to-Government Relationship with Indian Tribes*, Policy Statement, 16 FCC Rcd 4078 (2000); 47 C.F.R. § 54.313 (a)(5); *Further Guidance on Tribal Government Engagement Obligation Provisions of the Connect America Fund*, Public Notice, 27 FCC Rcd 8176 (2012).

¹² *Connecting America: The National Broadband Plan*, Notice of Inquiry and Notice of Proposed Rulemaking, 25 FCC Rcd 6657 (2010) and GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

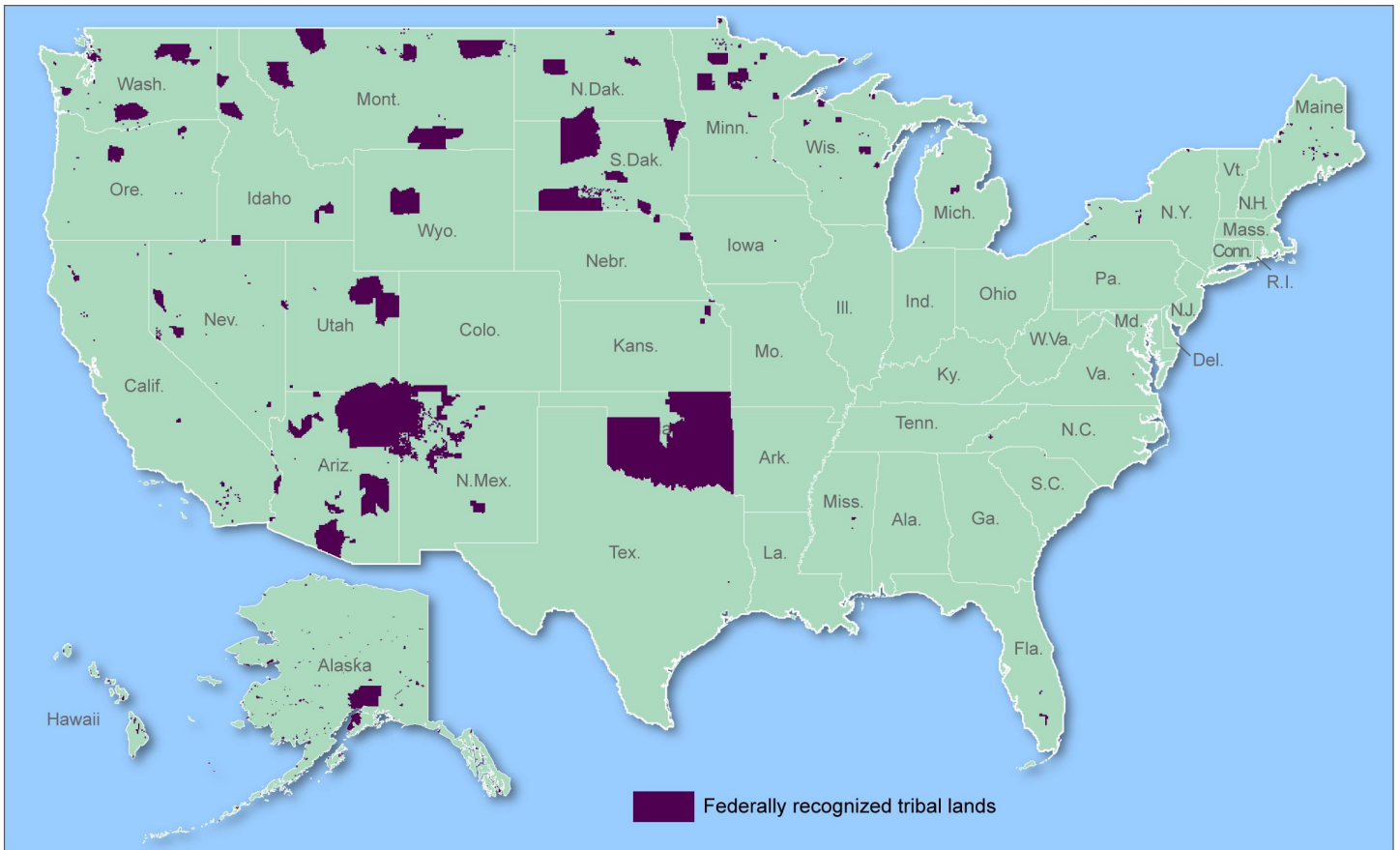
the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The federal government has recognized 573 Indian tribes as distinct, independent political communities with tribal sovereignty. There are different categories of tribal lands, with differing implications with respect to ownership and administration. Reservations are defined geographic areas with established boundaries recognized by the United States.¹³ Tribal lands vary in size, demographics, and location. For example, those lands smallest in size are less than one square mile, and the largest, the Navajo Nation, is more than 24,000 square miles (the size of West Virginia). Tribal land locations can range from extremely remote, rural locations to urban areas. Figure 1 shows tribal lands in the United States according to the 2010 Census.

¹³The land within the reservation's boundaries may include a mixture (or checkerboard) of tribal, individual Indian, and non-Indian land. Tribal and individual Indian land may be held in trust, restricted, or fee status. The allotment and assimilation period, which began with The General Allotment Act in 1887 (also known as the Dawes Act) included a number of federal efforts to divide tribal lands into individual parcels, give each tribal member a parcel, and sell the "surplus" parcels to non-Indians. In some cases, the United States government still holds individual allotments in trust, while others have transferred to private (Indian and non-Indian) ownership. In addition, restricted status, or restricted fee lands, are lands for which the title to the land is held by an individual Indian person or a tribe and "which can only be alienated or encumbered by the owner with the approval of the Secretary of the Interior because of limitations contained in the conveyance instrument pursuant to federal law." In addition, some tribes have purchased land within and outside of their reservation's boundaries.

Figure 1: Map of Federally Recognized Tribal Lands



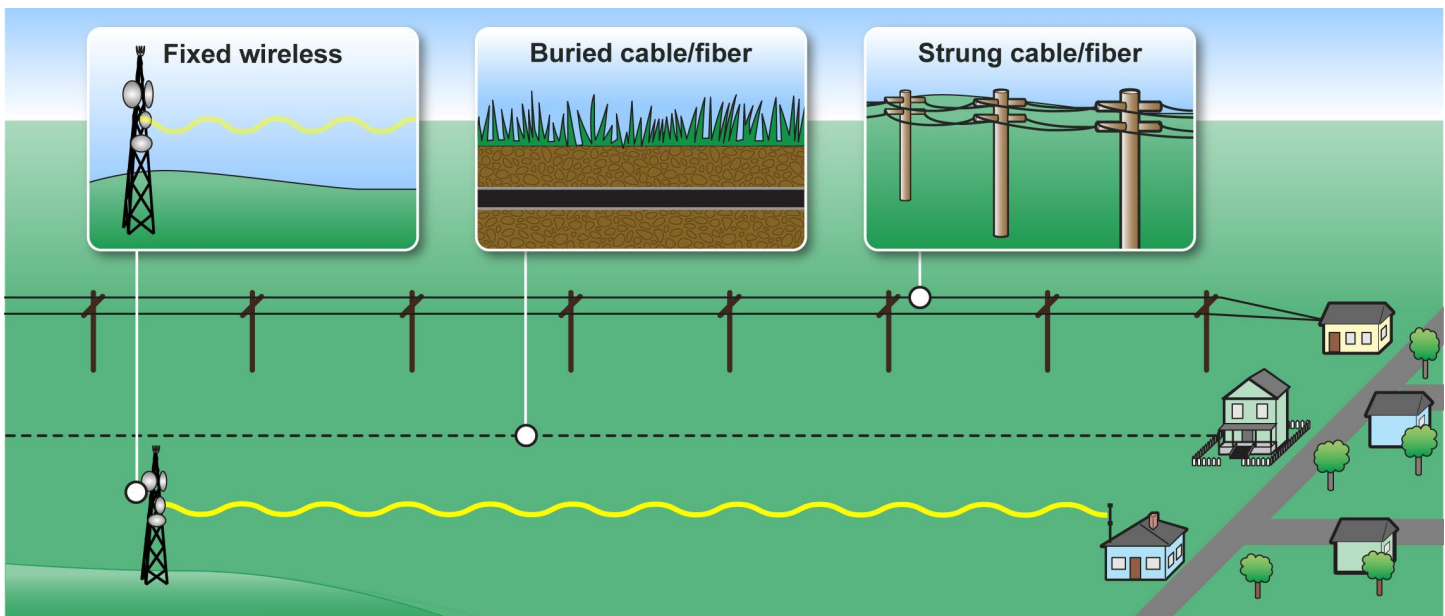
Source: GAO, based on U.S. Census Bureau data and the Federal Communications Commission's definition of tribal lands. | GAO-18-630

The term “broadband” commonly refers to Internet access that is high speed and provides an “always-on” connection, so users do not have to reestablish a connection each time they access the Internet. Broadband service may be “fixed”—that is, providing service to a single location, such as a customer’s home—or “mobile,” that is, providing service wherever a customer has access to a mobile wireless network, including while on the move, through a mobile device, such as a smartphone. Fixed and mobile broadband providers deploy and maintain infrastructure to connect consumers to the Internet.

Providers offer fixed Internet service through a number of technologies, such as copper phone lines, fiber-optic lines, coaxial cables, wireless

antennas, satellites,¹⁴ or a mix of technologies (see fig. 2). To install fixed or wireless infrastructure, providers must obtain permits from government entities with jurisdiction over the land or permission from public utilities to deploy infrastructure on existing utility poles.

Figure 2: Examples of Fixed Broadband Technologies



Source: GAO. | GAO-18-630

The federal government has emphasized the importance of ensuring Americans have access to broadband, and a number of agencies, including FCC, currently provide funding to subsidize broadband deployment in areas in which the return on investment has not attracted private investment. The Communications Act of 1934, as amended by the Telecommunications Act of 1996, specifies that consumers in “rural, insular, and high-cost areas” should have access to telecommunication services and rates that are “reasonably comparable” to consumers in urban areas.¹⁵ To achieve this goal, FCC administers the High-Cost

¹⁴ We did not include satellite broadband in our assessment of broadband availability on tribal lands because FCC concluded in its 2016 Broadband Progress Report that this type of service had not yet reached FCC’s speed benchmark of 25 Mbps/3 Mbps. In the 2018 Broadband Deployment Report, FCC noted that some satellite services were reporting providing speeds of 25 Mbps/3 Mbps, but did not include these services in its data tables depicting broadband deployment on tribal lands.

¹⁵ 47 U.S.C. § 254(b)(3).

program, which provides subsidies to providers of phone service in rural, insular, and other remote areas.

In 2011, FCC launched a series of reforms to its High-Cost program, including adding support for broadband services, and created the Connect America Fund, which provides subsidies to fixed and mobile providers of telecommunications and broadband services in rural, insular, and other remote areas where the costs of providing service is high. To be eligible for Universal Service Fund support from FCC, a provider must be designated an Eligible Telecommunications Carrier by the appropriate state or by FCC and must meet certain service obligations.¹⁶ The Connect America Fund has distributed approximately \$4.5 billion per year, and has separate funding mechanisms targeted to specific goals. For example, there are funds for fixed-phone and broadband service and funds for mobile service, including a Tribal Mobility Fund (Phase 1) that awarded nearly \$50 million in 2014 for the provision of 3G and 4G service to unserved tribal areas.

In addition to FCC, a number of other agencies provide funding for broadband deployment in unserved or underserved areas. For example, the United States Department of Agriculture's Community Connect Program, which provides grants to rural communities to provide high-speed Internet service to unserved areas.¹⁷

The American Recovery and Reinvestment Act of 2009 (Recovery Act) mandated the development of a nationwide map of broadband availability.¹⁸ To implement the act, the National Telecommunications & Information Administration (NTIA)—an agency within the Department of Commerce—established a grant program to enable U.S. states and territories to collect state-level broadband mapping data. NTIA used these data to launch the National Broadband Map (www.broadbandmap.gov) in February 2011. As the funding for the NTIA's program came to an end in

¹⁶ 47 C.F.R. § 54.201(a)(1). The Universal Service Fund is paid for by contributions from providers of telecommunications based of an assessment on their interstate and international end-user revenues.

¹⁷ There are a variety of federal programs that can be used to fund broadband deployment, including additional USDA programs. NTIA maintains a list of funding resources at: NTIA, *Funding*, accessed May 29, 2018, <https://broadbandusa.ntia.doc.gov/funding-list>.

¹⁸ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009).

2014, NTIA stopped collecting data to update the map and, according to FCC officials, created a memorandum of understanding with FCC through which FCC agreed to maintain public access to the last version of the map. FCC issued rules in 2013 to begin collecting broadband deployment data, in addition to the broadband subscription data it had collected from providers since 2000. FCC sought, but did not receive, \$3 million to update the National Broadband Map in its fiscal year 2015 and fiscal year 2016 budgets. In 2018, Congress directed FCC to develop a report by March 23, 2019, evaluating broadband coverage in certain tribal lands (to include an assessment of areas that have adequate broadband coverage, as well as an assessment of unserved areas), and to complete a proceeding to address unserved areas by September 23, 2020.¹⁹ Currently, FCC requires broadband providers to report on their broadband deployment by filing a form twice a year (Form 477).²⁰

- Fixed broadband providers submit a list of the census blocks in which their broadband service is available, and
- mobile providers submit “shapefiles”—a geospatial depiction of the coverage area, which FCC refers to as “polygons”—of their coverage areas.

FCC uses providers’ 477 data to develop a statutorily mandated annual report on advanced telecommunications capability.²¹ In addition, in 2016, FCC began publishing its own maps of broadband deployment, using the information from providers’ Form 477 filings. In February 2018, FCC launched an updated map of fixed broadband deployment (<https://broadbandmap.fcc.gov/#/>). This map allows users to search for broadband deployment by address and provides summary-level statistics

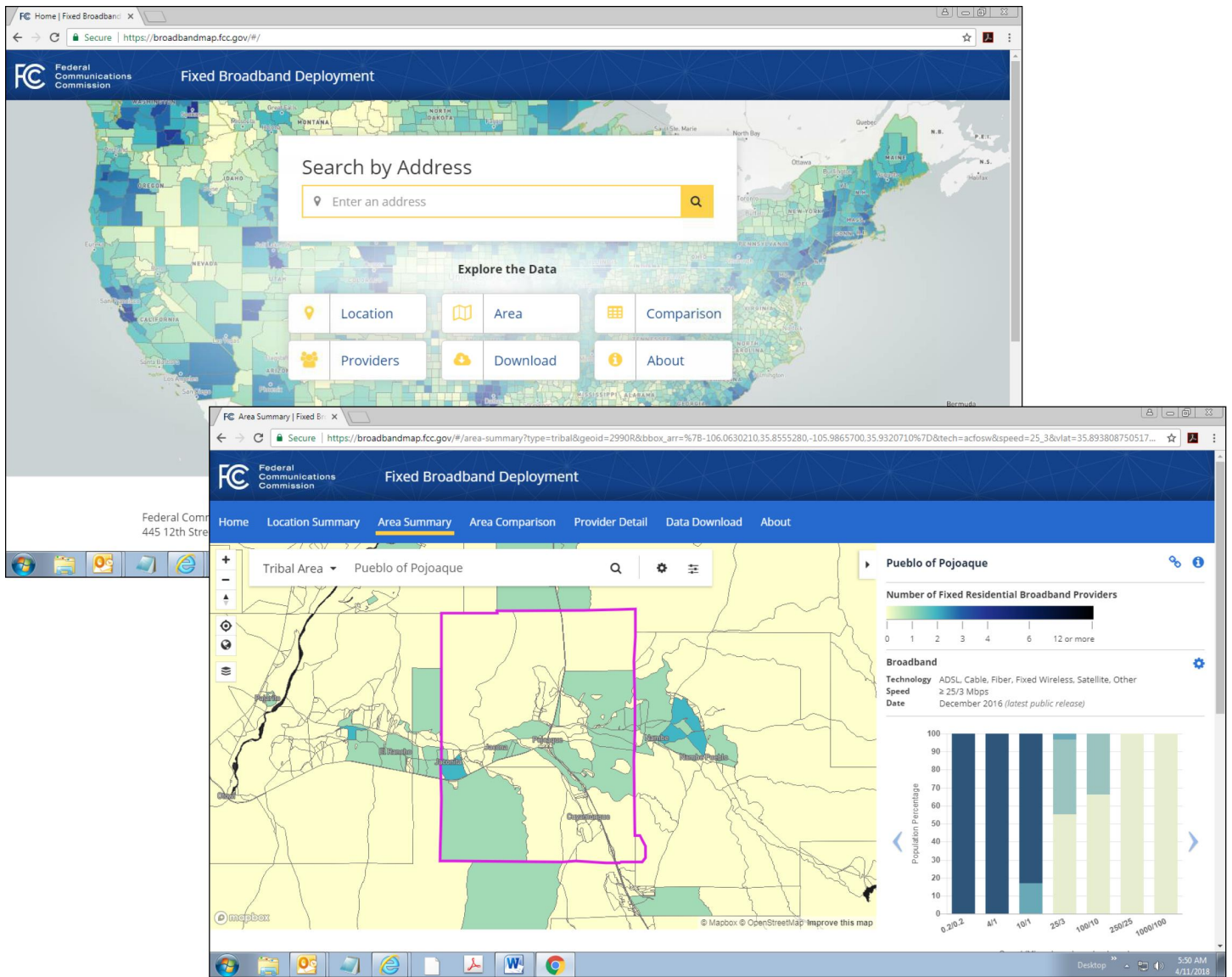
¹⁹ The act specifically referred to Indian country (as defined in section 1151 of title 18, United States Code) and land held by a Native Corporation pursuant to the Alaska Native Claims Settlement Act. Consolidated Appropriations Act, 2018, div. P, §§ 508(a)(1), (a)(2)(B), (b).

²⁰ The Form 477 also collects information on subscribership: fixed providers report their number of subscribers in each census tract and mobile providers report their number of subscribers by state.

²¹ Section 706 of the Communications Act of 1934, as amended by the Broadband Data Improvement Act, requires FCC to determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion, and regularly thereafter. 47 U.S.C. § 1302(b). Furthermore, advanced telecommunications capability is defined as high speed 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).

regarding broadband deployment in specific tribal lands (see fig. 3). According to FCC officials, this new map format will support more frequent data updates.

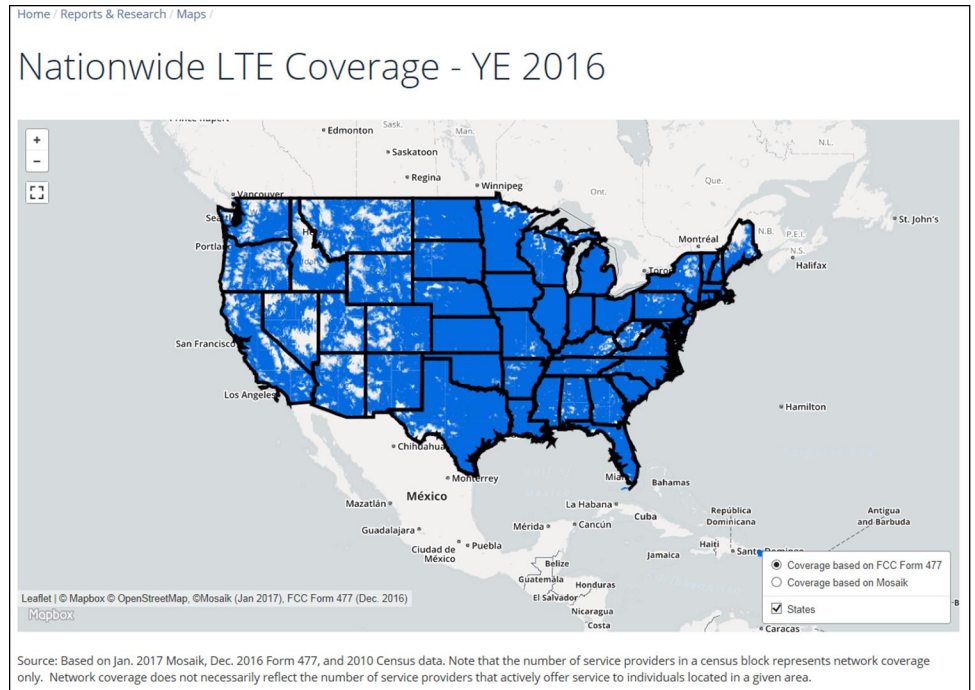
Figure 3: A Screenshot of FCC’s Map Interface for Fixed Broadband Deployment (Background) and an Example of a Specific Map for a Tribal Area (Foreground)



Source: Federal Communications Commission (FCC). | GAO-18-630

FCC also provides national maps of mobile LTE coverage; these maps do not allow users to access data at the same level of granularity as the maps of fixed broadband (see fig. 4).²²

Figure 4: Screenshot of FCC’s Map of Nationwide Mobile Long-Term Evolution (LTE) Coverage



Source: Federal Communications Commission (FCC). | GAO-18-630

²² See, for example: FCC, *Nationwide LTE Coverage – YE 2016*, (accessed May 30, 2018), <https://www.fcc.gov/reports-research/maps/nationwide-lte-coverage-ye-2016/>; and FCC, *LTE Coverage by Number of Providers – YE 2016*, (accessed May 30, 2018), <https://www.fcc.gov/reports-research/maps/lte-coverage-number-providers-ye-2016/>.

FCC Collects Data on Broadband Availability but Lacks Accurate and Complete Data on Broadband Access on Tribal Lands

FCC collects and uses data that capture broadband availability to measure broadband access on tribal lands, leading to overstatements of broadband access on tribal lands.²³ Specifically, FCC's method of collecting mobile and fixed broadband data from providers (the Form 477) does not accurately or completely capture broadband access on tribal lands because it (1) captures nationwide broadband *availability* data—areas where providers may have broadband infrastructure—but does so in a way that leads to overstatements of availability, and (2) does not capture information on factors that FCC and tribal stakeholders have stated can affect broadband access on tribal lands, such as affordability, service quality, and denials of service.²⁴ Nonetheless, FCC uses its Form 477 broadband availability data in annual broadband deployment reports to measure the percentage of Americans living on tribal lands with or without access to broadband, and to measure progress toward FCC's strategic goal of increasing all Americans' access to affordable broadband.²⁵ By using broadband *availability* data to measure broadband access on tribal lands, FCC overstates broadband access on tribal lands.

²³ We use the term broadband availability to refer to broadband deployment. FCC officials noted that the data collected by the Form 477 reflects broadband deployment. We use the term broadband availability because FCC's Form 477 instructs fixed broadband providers to report fixed broadband deployment by submitting a list of census blocks in which the filer makes broadband connections available.

²⁴ FCC officials we interviewed stated that FCC has not defined the term "broadband access," and noted that the use of the term may vary across FCC documents. However, FCC and tribal stakeholders have noted that broadband access can be affected by factors such as the affordability and quality of the broadband services being offered and the extent to which providers deny service to those who request it. For example, see 2016 Broadband Progress Report 31 FCC Rcd 699 ¶ 62 (2016); FCC, *National Broadband Plan*; FCC, *Strategic Plan 2018-2022*. This is discussed in further detail below. FCC officials also identified the cost of deployment and regulatory barriers as important factors when determining whether an area has access to broadband.

²⁵ See 33 FCC Rcd 1660 ¶ 2 (2018). See also, for example, Appendix G – Americans (Thousands) Living on Tribal Lands with Access to Fixed Terrestrial 25 Mbps/3 Mbps Services and/or Mobile LTE with a Minimum Advertised Speed of 5 Mbps/1 Mbps by State. Prior to 2018, FCC referred to these reports as "Broadband Progress Reports." *Connecting America: The National Broadband Plan*, Notice of Inquiry and Notice of Proposed Rulemaking, 25 FCC Rcd 6657 (2010).

FCC Collects Broadband Availability Data, but Its Collection Method Leads to Overstatement of Availability on Tribal Lands

FCC's Form 477, its primary method of collecting nationwide broadband data, collects information on broadband availability, which identifies where providers have broadband infrastructure and could potentially provide broadband services but not where consumers can actually access those services. Moreover, the Form 477's mobile broadband data-collection methods are not standardized, and its fixed broadband data-collection methods are not sufficiently granular to provide information about broadband availability on tribal lands.

Mobile Broadband Data Collection

FCC's Form 477 requires mobile broadband providers to report their coverage areas by submitting geospatial data depicting the areas in which consumers could expect to receive the minimum advertised speed.²⁶ FCC has previously noted the importance of collecting nationally standardized, uniform broadband data from providers to assess broadband availability and allow for easy comparison across providers. However, the Form 477 does not require that providers use a standardized method with defined technical parameters (such as signal strength, or amount of interference) when determining their coverage area, resulting in data that cannot be meaningfully compared across providers, according to FCC. To map their coverage areas, providers may use predictive models based on different measurement methods and a variety of factors known to affect mobile broadband service such as topography, tree cover, and buildings, among other factors.

Providers and tribal stakeholders have expressed concern with the accuracy of FCC's mobile broadband data, and FCC has acknowledged concerns that the lack of a standardized method resulted in data that were unreliable for the purposes of determining mobile broadband coverage for specific geographic areas, such as tribal lands. About half of

²⁶ Mobile providers also submit a list of all census tracts in which the providers' service is advertised and available to actual and potential subscribers. FCC's requirement only applies to facilities-based mobile broadband providers, which are providers that provide services using their own network facilities and spectrum for which they hold a license, manage, or have obtained the right to use via a spectrum leasing arrangement. This would not include mobile voice service resellers.

the tribal government representatives we interviewed told us that they believe FCC's data overstate mobile LTE broadband availability on their lands. For example, a few representatives expressed concerns with the accuracy of the mobile data in areas with varied terrain, such as mountains and valleys. In comments to FCC, broadband providers have also raised concerns regarding the accuracy of the mobile coverage data generated by the Form 477 for the purposes of identifying areas eligible for funding through FCC's Mobility Fund Phase II program, which provides federal funding to increase mobile broadband services in unserved areas.²⁷ In 2017, in response to such concerns, FCC reversed its prior decision to use the Form 477 data to identify specific areas eligible for federal funding through the Mobility Fund Phase II program.²⁸ Instead, FCC undertook a one-time special data collection, for which it required providers to measure their coverage based on a common set of standards, in order to better identify unserved areas that would be presumptively eligible for funding.²⁹ FCC plans to allow parties, including tribal governments, to challenge the data where they believe the data overstate mobile broadband coverage through August, 2018.³⁰ Additionally, in an August 2017 Notice of Proposed Rulemaking, FCC requested comment on potential changes to modernize its Form 477 data collection, including whether it should require all providers to use a standardized method when submitting mobile coverage data on the form. FCC officials told us that they do not have a timeline for the development

²⁷ See 32 FCC Rcd 6282 (2017).

²⁸ As part of its universal service reforms, FCC established the Mobility Fund to target support for mobile service. For the Mobility Fund Phase 1, FCC identified unserved areas and held a reverse auction in 2012. In the reverse auction, eligible telecommunications carriers submitted "bids," outlining how much support they needed to serve specific unserved areas, and FCC awarded support based on the lowest bid as well as the number of road miles covered by the bids. In March 2017, FCC announced that it would be conducting another reverse auction to distribute up to \$4.53 billion to providers that will deploy service to areas lacking LTE service (Mobility Fund Phase 2). FCC has not announced a date for the auction.

²⁹ Only providers that previously reported 4G LTE services on the Form 477 were required to submit data for FCC's Mobility Fund data collection. According to FCC, limiting the scope of the special data collection reduced the burden on providers, especially smaller providers. 32 FCC Rcd 6282 ¶ 11 (2017).

³⁰ In February 2018, FCC completed its initial analysis of the special data collection and released a map of areas it initially deemed eligible for the Mobility Fund Phase II auction based on the data. According to FCC, 64 entities have access to the challenge process as of May 2018, including 11 tribal governments.

of a final rule, and as of August 2018, FCC had not yet issued a final rule on modernizing the Form 477.

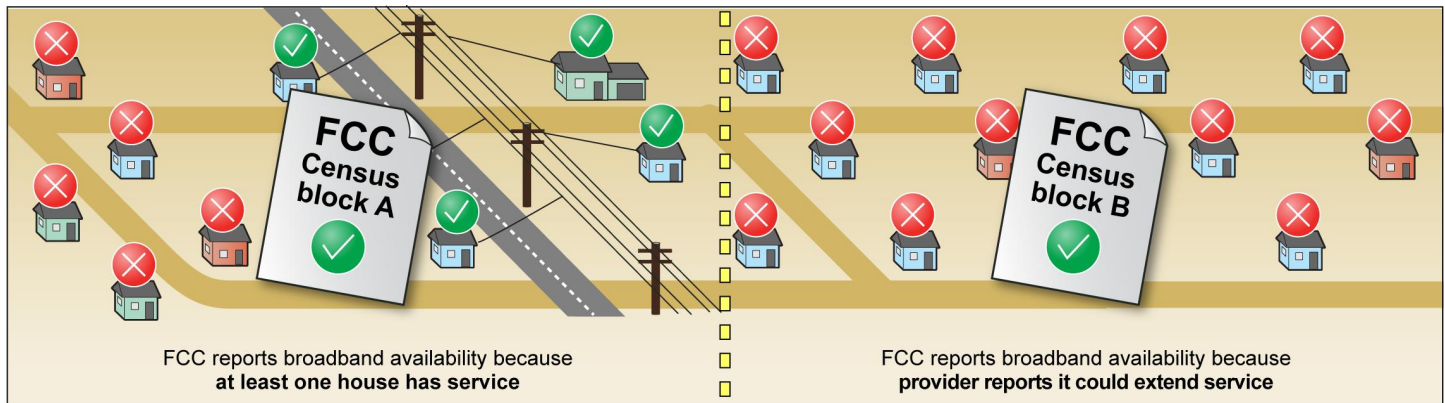
Fixed Broadband Data Collection

The Form 477 collects fixed broadband data that are not sufficiently granular to accurately depict broadband availability on tribal lands. Specifically, FCC directs fixed broadband providers to submit a list of census blocks where service is available on the Form 477. FCC defines “available” as whether the provider does—or could, within a typical service interval or without an extraordinary commitment of resources—provide service to *at least one* end-user premises in a census block.³¹ Thus, in its annual reports and maps of fixed broadband service, FCC considers an entire block to be served if a provider reports that it does, or *could offer*, service to *at least one* household in the census block. FCC does not define a typical service interval or an extraordinary commitment of resources in its Form 477 instructions. However, FCC officials stated that providers should not report service in areas in which major construction would be required to provide service. A few providers told us that the lack of clear guidance from FCC regarding how to determine where broadband is available has led different providers to interpret the Form 477 directions in different ways, which can affect the accuracy and consistency of reporting from provider to provider. For example, in a filing with FCC, one provider stated that it had misapplied the definition of “available” and, as a result, overstated the availability of its services by almost 3,000 census blocks.³² As shown in figure 5, FCC’s definition of availability leads to overstatements of fixed broadband availability on tribal lands by: (1) counting an entire census block as served if only one location has broadband, and (2) allowing providers to report availability in blocks where they do not have any infrastructure connecting homes to their networks if the providers determine they could offer service to at least one household. Almost all the providers and private companies, and most of the representatives of tribal governments and organizations we spoke with told us that due to these issues, FCC’s definition of availability results in data that overstate broadband availability.

³¹ A “typical service interval” refers to the amount of time between when a customer requests service, and when a provider is able to begin providing service.

³² ³¹ FCC Rod 7790 (2016). FCC officials noted that there are more than 11 million total census blocks nationwide.

Figure 5: Overstatement of Broadband Availability in the Federal Communications Commission’s Form 477 Data



Source: GAO analysis of Federal Communications Commission (FCC) documents. | GAO-18-630

According to FCC officials, FCC requires providers to report fixed broadband availability where they could provide service within a “typical service interval” and without “an extraordinary commitment of resources” in order to: (1) ensure that it captures instances in which a provider has a network nearby but has not installed the last connection to the homes, and (2) identify where service is connected to homes, but homes have not subscribed. FCC officials also told us that FCC measures availability at the census block level because sub-census block data may be costly to collect. In 2013, FCC considered collecting more granular nationwide data on broadband deployment but decided against collecting these data because it determined that the burden would outweigh the benefit.³³

However, FCC, tribal stakeholders, and providers have noted that FCC’s approach leads to overstatements of availability. For example, in its 2017 Notice of Proposed Rulemaking on modernizing the Form 477 data collection, FCC acknowledged that by requiring a provider to report where it *could* provide service, it is impossible to tell whether the provider would be unable or unwilling to take on additional subscribers in a census block it lists as served. According to FCC, this limits the value of the data to inform FCC policies. In addition, several providers and tribal stakeholders we interviewed said that some “digital subscriber line” (DSL) and fixed wireless providers may overstate their service areas on the Form 477 because they may not take into account technological or terrain

³³ *In the Matter of Modernizing the FCC Form 477 Data Program*, Report and Order, 28 FCC Rcd 9887 ¶ 35 (2013).

limitations that would affect their ability to actually provide service.³⁴ FCC has also recognized that by measuring availability at the census block level, not every person will have access to broadband in a block that the data show as served, and FCC has noted that in rural areas, such as tribal lands, census blocks can be large and providers may only deploy service to a portion of the census block.³⁵ A few representatives for tribal governments and organizations noted that the use of census blocks may uniquely overstate broadband availability on tribal lands when census blocks contain both tribal and non-tribal areas, because availability in the non-tribal portion of the block can result in the tribal area of the census block also being counted as served.

FCC is considering requiring providers to report whether they are willing and able to serve additional customers in a census block and collecting sub-census block data in its 2017 proposed rulemaking on modernizing the Form 477.³⁶ About one-third of the parties that commented on FCC's proposals were not in favor of FCC collecting these more granular data on the Form 477, stating that the data would be less accurate and more burdensome for providers to collect and report, among other reasons, and questioned whether more detailed information on nationwide broadband availability is necessary.³⁷ We heard similar concerns from a few of the providers and trade associations we interviewed. However, about one-third of the parties that commented on FCC's proposals were in favor of collecting more granular data, stating that such data would be more useful for policymakers and more accurate. Additionally, a few tribally owned and non-tribal providers we interviewed told us that providers

³⁴ "Digital subscriber line" (DSL) service typically refers to internet services delivered over traditional copper phone lines.

³⁵ *Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, 32 FCC Rcd 6329 (2017).

³⁶ FCC requested comment on the cost and burden of requesting more detailed data from providers, namely, whether to require fixed broadband providers to submit information identifying areas where: (1) there are existing customers and a provider could add new customers within a standard time interval upon request; (2) existing customers are served but providers cannot add new customers; and (3) there are no existing customers but new customers could be added within a standard time interval upon request. FCC also requested comment on whether to collect more granular data, such as data by street address. 32 FCC Rcd 6329 (2017).

³⁷ For example, commenters raised concerns that the lack of addresses in rural areas, such as tribal lands, would impose a burden on providers that are required to file a Form 477 and that the use of inconsistent geolocation methodologies would result in inaccurate data.

already maintain data for business purposes that would allow them to report more granular information on broadband availability. One stakeholder we spoke with pointed out that, as the federal government and states work to ensure the last remaining unserved areas—rural, low-population density areas including tribal lands—have service, sub-census-block-level data are needed to ensure that governments are making wise and accurate investments.

FCC Does Not Collect Data on Several Factors That Affect Broadband Access on Tribal Lands

FCC does not collect information on several factors that FCC and tribal stakeholders have stated can affect broadband access. FCC and tribal stakeholders have noted that broadband access can be affected by factors such as the affordability and quality of the broadband services being offered, and the extent to which providers deny service to those who request it. By collecting and using data on factors that can affect broadband access, FCC would have more complete information on the extent to which Americans living on tribal lands have access to broadband Internet services.

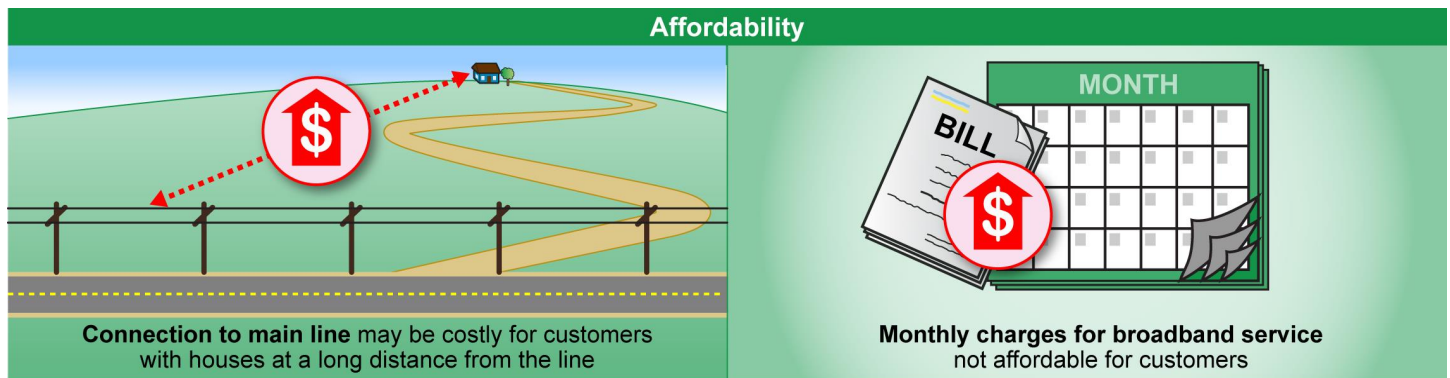
- *Affordability*: FCC has noted that affordability of broadband services can affect broadband access but does not collect information on the cost of broadband service on tribal lands on the Form 477. For example, in the *National Broadband Plan*, FCC cited affordable access to robust broadband service as a long-term goal, and in its *Strategic Plan 2018–2022*, FCC acknowledged that affordability is an important factor affecting broadband access and a key driver of the digital divide.³⁸ Moreover, most of the representatives of tribal governments and organizations we spoke to told us that the affordability of broadband services is an important factor for understanding whether or not people on tribal lands could realistically access broadband services.³⁹ Tribal government officials from one tribe we spoke with told us that residents on their lands cannot access broadband because it is too costly. For example, a provider that

³⁸ FCC officials also noted that affordability is a key factor that affects whether people choose to subscribe to broadband services—known as “broadband adoption.” As a result, according to officials, availability alone may be an incomplete indicator of broadband adoption.

³⁹ We have previously reported that tribal officials and providers identified affordability as a barrier to broadening the availability of services on tribal lands. [GAO-16-222](#).

advertises services on the tribe's land charges \$130 per month for broadband services, approximately one-and-a-half times the average rate providers charge for comparable services in urban areas, according to FCC (see fig. 6).⁴⁰

Figure 6: Examples of Scenarios That Affect Broadband Access: Affordability



Source: GAO. | GAO-18-630

In the 2018 Broadband Deployment Report, FCC acknowledged that affordability can influence a consumer's decision on whether to purchase broadband, but FCC did not consider cost in its assessment of broadband access on tribal lands, stating that pricing does not go to the congressional requirement to assess deployment and availability in conducting its inquiry as required by Congress under section 706 of the Telecommunications Act and also citing a lack of reliable comprehensive data on this issue. In addition, FCC officials we interviewed acknowledged that while broadband service may be technically available, it may be prohibitively expensive for some, which may make availability alone an incomplete indicator of broadband access.

- **Quality of Service:** In the *Telecommunications Act of 1996* Congress recognized the importance of service quality by defining advanced telecommunications capability as any technology that enables users

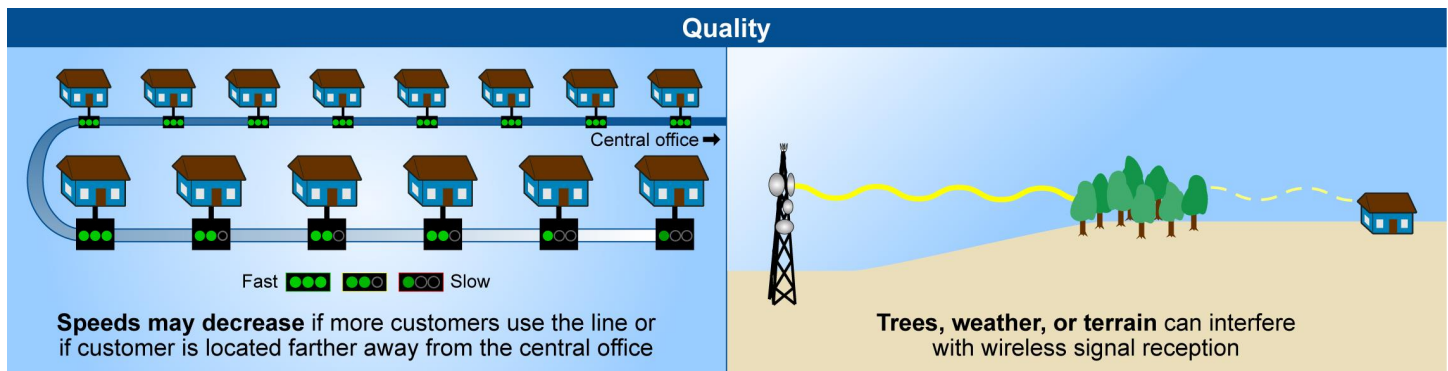
⁴⁰ Tribal government officials told us that this was the cost for services with maximum speeds of 10 megabits per second (Mbps)/4 Mbps. FCC's Urban Rate Survey collects information on the prices providers charge for fixed services in urban areas, in order to determine the benchmark rate Universal Service Fund recipients can charge customers. In its 2018 Urban Rate Survey, FCC surveyed providers to identify fixed broadband rates in urban areas and determined that the average rate plus two standard deviations for 10 Mbps/1 Mbps services ranged from \$87.68 to \$88.13. FCC uses the Urban Rate Survey to set rate benchmarks, and requires recipients of high-cost and/or Connect America Fund support to offer broadband services at rates that are at or below the relevant reasonable comparability benchmark.

to originate and receive *high-quality* voice, data, graphics, and video telecommunications. In keeping with this legislation, FCC has consistently set thresholds for speeds that qualify as broadband services and has stated that “latency” and consistency of service figure prominently into whether a broadband service is able to provide advanced capabilities and thus whether users can access high-quality telecommunications.⁴¹ Likewise, almost all of the representatives for tribal governments or organizations we interviewed told us that quality of service is a key component of access to broadband and that routine outages, slow speeds, and high latency keep people on tribal lands from consistently accessing the Internet. Most tribal stakeholders and a few providers we interviewed told us that factors such as terrain, weather, and type of technology can all affect the quality of service an end user receives and, ultimately, the subscribers’ ability to access the Internet (see fig. 7). For example, some representatives of tribal governments and organizations told us issues like oversubscription—when a provider signs up more customers than its equipment can handle—and outdated or limited infrastructure result in low-quality services that cannot support advanced and, in some cases, basic functions.⁴²

⁴¹ “Latency” refers to the amount of time it takes for data to travel from a computer to a server and back again. A high-latency network connection experiences long delay times, which can affect the performance of videoconferencing, phone, and streaming media services. In the 2016 Broadband Progress Report, FCC noted that latency may make a variety of applications unusable, regardless of the download/upload speeds being offered. 31 FCC Rcd 699 ¶ 62 (2016); FCC has made similar statements in other contexts as well. See also *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2015 Broadband Progress Report, 30 FCC Rcd 1375 ¶ 24 (2015); FCC, *National Broadband Plan*; FCC, 2016 *Measuring Broadband America Fixed Broadband Report: A Report on Consumer Fixed Broadband Performance in the United States* (Washington, D.C.: 2016).

⁴² Advanced functions include, for example, Voice over Internet Protocol (VOIP), videoconferencing, and video streaming. Basic functions would include, for example, e-mail.

Figure 7: Examples of Scenarios That Affect Broadband Access: Quality of Service



Source: GAO. | GAO-18-630

Though FCC uses the Form 477 to collect some data on advertised speeds from providers, FCC does not collect data on actual speeds, service outages, and latency on the form.⁴³ In its 2018 Broadband Deployment Report, FCC stated that it did not consider FCC data on actual speed, latency, or consistency of service when evaluating broadband access due to the lack of appropriate data. FCC noted that the lack of Form 477 data on actual speeds in particular constrained evaluation of mobile broadband access.⁴⁴

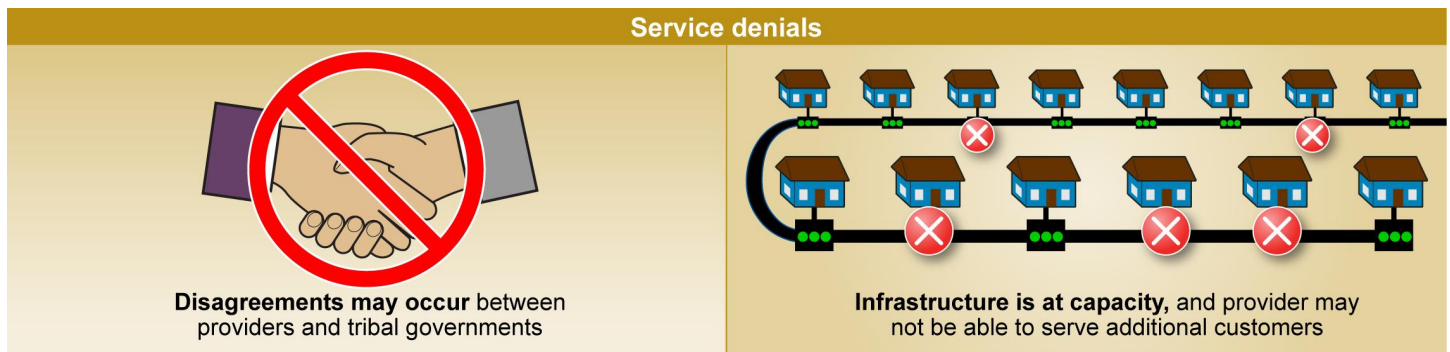
- **Service Denials:** FCC has recognized that information on denials of service is pertinent to understanding actual broadband access but does not collect data on service denials in the Form 477. Specifically, in the *National Broadband Plan*, FCC recommended that FCC collect data to determine whether broadband service is being denied to potential residential customers based on the income of the residents

⁴³ On the Form 477, FCC collects data from providers on maximum advertised speeds for fixed broadband, and minimum advertised speeds for mobile broadband. In a 2011 Notice of Proposed Rulemaking on modernizing the Form 477 data program, FCC requested comment on whether to include measures of service quality, including service outages and latency, on the Form 477. In its subsequent 2013 Rule on the Form 477 program, FCC did not address the collection of service quality data, noting that this issue remained open for consideration. FCC did not address this issue in the 2017 Notice of Proposed Rulemaking on the 477 program. *Modernizing the FCC Form 477 Data Program*, Notice of Proposed Rulemaking, 26 FCC Rcd 1508 ¶¶ 91, 97-98 (2011); and *In the Matter of Modernizing the FCC Form 477 Data Program*, Report and Order, 28 FCC Rcd 9887 FN 29 (2013).

⁴⁴ 33 FCC Rcd 1660 ¶¶ 31-32 (2018). FCC also considered third-party data on actual speeds in its 2018 Report, but noted that these data have some limitations because they were not collected pursuant to statistical sampling techniques.

in a particular geographic area. Some representatives of the tribal governments or organizations told us that that they were aware of a provider denying service to residents of tribal lands, despite the provider reporting broadband availability on at least a portion of those lands, according to our analysis of the Form 477 data. These representatives told us that they believed service was denied because of disputes with the tribal government, low demand for service, or the high costs of extending services to the home on tribal lands. Some representatives of tribal governments or organizations we spoke with also told us that providers may have denied service because their equipment was at capacity and could not accommodate new users (see fig. 8).

Figure 8: Examples of Scenarios That Affect Broadband Access: Service Denials



Source: GAO. | GAO-18-630

For example, on three of the tribal lands we visited, we observed fiber optic cable located close to government and residential structures that did not have broadband access via fiber. According to tribal government officials, despite the physical proximity of the fiber optic cable, the tribal government and residents could not access it because the provider was not offering service or was unwilling or unable to build to the structures. A few providers we interviewed stated that they may not provide services to individuals who request them because of high-costs, administrative

barriers, or technical limitations. However, FCC does not collect data on service denials on the Form 477.⁴⁵

FCC Uses Broadband Availability Data to Measure Broadband Access on Tribal Lands, Overstating Access on Tribal Lands

In its *Strategic Plan 2018–2022* and the *National Broadband Plan*, FCC identified increasing all Americans' access to affordable broadband as a long-term, strategic goal.⁴⁶ Congress has similarly directed FCC to develop policies and programs aimed at increasing access to affordable broadband in all regions of the United States, including tribal lands, and required FCC to report annually on its progress.⁴⁷ According to the *Government Performance and Results Act (GPRA)*, as enhanced by the *GPRA Modernization Act of 2010 (GPRAMA)*, agencies should use accurate and reliable data to measure progress toward achieving their goals. Additionally, *Standards for Internal Control in the Federal Government* state that agencies should use quality information—information that is complete, appropriate, and reliable—to inform decision-making processes and evaluate the agency's performance in achieving goals. According to these standards, agencies should also communicate quality information externally to achieve the agency's goals.

However, FCC has used its Form 477 data, which do not accurately or completely measure broadband access on tribal lands, as its primary source to evaluate progress toward FCC's strategic goal of increasing broadband access and to develop maps and reports intended to depict broadband access on tribal lands. For example, in its 2018 Broadband Deployment Report, FCC found that 64.6 percent of Americans residing on tribal lands have access to fixed broadband services. By using these

⁴⁵ Separate from the Form 477 process, FCC used to collect information on “unfulfilled service requests,” as part of an effort to determine whether certain broadband providers receiving funding were meeting obligations to offer broadband service upon a customers' reasonable request. However, FCC stopped requiring that providers submit data on unfulfilled requests after modifying the obligations to outline specific deployment thresholds, rather than requiring that service be available at a customer's “reasonable request.” *In the Matter of Connect America Fund, ETC Annual Reports and Certifications*, Report and Order, 32 FCC Rcd 5944 ¶ 6 (2017).

⁴⁶ See FCC, *Strategic Plan 2018—2022*, Strategic Goal 1, and; FCC, *Connecting America: The National Broadband Plan*, Long-Term Goal No. 3.

⁴⁷ 47 U.S.C. § 1302(b); 47 U.S.C. §§ 254(b)(1), (b)(2).

data, FCC has overstated the extent to which Americans living on tribal lands can actually access broadband Internet services and FCC's progress toward increasing broadband access. As a result, the digital divide may appear less significant as a national challenge, and FCC and tribal stakeholders working to target broadband funding to unserved or underserved tribal lands will be limited in their ability to make informed decisions. This increases the risk that residents living on tribal lands will continue to lack broadband access. Some tribal officials stated that inaccurate data have affected their ability to plan their own broadband networks and obtain federal broadband funding, and most of the tribal stakeholders we interviewed identified a pressing need for accurate data on the gaps in broadband access on tribal lands in order to ensure that tribes can qualify for federal funding and to effectively target the areas that need it most. For example, representatives for one tribal government that is providing broadband services said the government will not be able to use a federal grant to build broadband infrastructure in areas of their reservation that lack access, because the Form 477 data overstate actual access on the tribe's land. As more than three quarters of the tribal governments we spoke to are working to provide broadband services on their lands in some capacity, overstating broadband access on tribal lands could affect the ability of a number of tribes to access federal funding to increase broadband access on their lands.

As previously discussed, FCC is considering proposals to modify its Form 477 data collection as part of a 2017 Notice of Proposed Rulemaking, but FCC officials told us that the Commission does not have a timeline for issuance of a final rule. While some of FCC's proposals could help address some of the limitations identified above by, for example, collecting more granular nationwide broadband availability data, FCC has not addressed specifically the collection of more accurate and complete data on broadband access for tribal lands in this proceeding. FCC has identified the need to improve broadband data for tribal lands in particular, and as previously noted, in 2018 Congress directed FCC to develop a report evaluating broadband coverage in certain tribal lands and initiate a proceeding to address the unserved areas identified in the report.⁴⁸ FCC officials told us that FCC has not determined how it will address this requirement, but it is currently considering its options, including potentially addressing the requirement as part of its ongoing proposed rulemaking on modernizing the Form 477 data collection. An evaluation of broadband

⁴⁸ FCC, *Connecting America: The National Broadband Plan*; Consolidated Appropriations Act, 2018, div. P, §§ 508(a)(1), (a)(2)(B), (b).

coverage on tribal lands that relies on the current Form 477 data would be subject to the limitations described above, including the overstatement of broadband access on tribal lands.

Additionally, FCC has demonstrated that it is possible in some circumstances to collect more granular data when such data collection is targeted to a specific need or area. For example, in 2017 FCC began requiring certain providers that receive funding through the Connect America Fund to report the latitude and longitude of locations where broadband is available, and FCC has noted that these more granular data are extremely useful to the Commission, especially for rural areas where census blocks can be quite large.⁴⁹ A few large providers and trade associations similarly stated in public comments on FCC's proposed rulemaking to modernize the Form 477 process that FCC should target its collection of more granular broadband data to areas where the data are most likely to be overstated—specifically, large, rural census blocks with low population densities, such as those on tribal lands. Additionally, as discussed above, FCC undertook a one-time special data collection for Mobility Fund II to ensure that the mobile broadband data it collected would be reliable for the intended use. By developing and implementing methods for collecting and reporting accurate and complete data on broadband access specific to tribal lands, FCC would be able to better identify tribal areas without access to broadband and to target federal broadband funding to the tribal areas most in need.

⁴⁹ This requirement applies only to locations that were deployed or upgraded with Connect America Funds after May 25, 2016. Under this data collection, FCC requires providers to report broadband as available at locations where (1) there is a current subscriber, or (2) a provider could offer service within 10 days upon request, and to report maximum available—not actual—speeds. FCC began collecting geolocation data from some carriers in 2016 and is expanding this requirement to remaining recipients of Universal Service Funds on a rolling basis. 32 FCC Rcd 6329 (2017).

FCC Does Not Have a Formal Process to Obtain Tribal Input on Its Broadband Data, and Tribal Stakeholders Reported a Lack of Provider Engagement

FCC Does Not Have a Formal Process to Obtain Tribal Input on Its Broadband Data

FCC uses data submitted by broadband providers via the Form 477 process to develop maps and datasets depicting broadband services nationwide, and in specific locations, such as tribal lands, but does not have a formal process to obtain input from tribes on the accuracy of the broadband data. FCC's 2010 *National Broadband Plan* noted the need for the federal government to improve the quality of data regarding broadband on tribal lands and recommended that FCC work with tribes to ensure that any information collected is accurate and useful. It also noted that tribal representatives should have the opportunity to review mapping data about tribal lands and offer supplemental data or corrections. Similarly, federal internal control standards note the need for federal agencies to communicate with external entities, such as tribal governments, and to enable these entities to provide quality information to the agency that will help it achieve its objectives.⁵⁰ FCC officials told us that they address questions and concerns regarding provider coverage claims submitted to the Office of Native Affairs and Policy, which will work with tribal governments to help them identify inaccurate broadband data for tribal lands, and share tribal questions and concerns with the appropriate FCC bureaus.⁵¹ However, FCC does not have a formal process for tribes (or other governmental entities) to provide input to ensure that the broadband data FCC collects through the 477 process, or the resulting maps that FCC creates to depict broadband on tribal lands, are accurate. Similarly, FCC does not use other methods to verify

⁵⁰ [GAO-14-704G](#).

⁵¹ FCC officials also stated that they conducted a more proactive outreach campaign to inform tribes of the ability to participate in the Mobility Fund Phase II challenge process, which is discussed earlier and later in this report.

provider-submitted Form 477 data on tribal lands against other sources of information, such as on-site tests or data collected by other agencies.⁵²

When discussing the lack of a formal process for tribal representatives or other governmental entities to provide feedback on the accuracy of the 477 broadband data, FCC officials noted that if consumers and local officials have information on individual locations that lack broadband service, such information does not indicate that the entire census block lacks broadband service. Additionally, FCC officials noted that providers attest to the accuracy of the data and that FCC staff validate the data by conducting internal checks to identify possible errors, such as unlikely changes in a providers' coverage area, and may follow-up with a provider to discuss such changes. However, these checks do not include soliciting input from tribes.

About half of the tribal stakeholders we spoke to raised concerns that FCC's broadband deployment data rely solely on unverified information submitted by providers. Additionally, most tribal stakeholders we interviewed told us that consistent with the recommendations in the *National Broadband Plan*, FCC should work directly with tribes to obtain information from them to improve the accuracy of its broadband deployment data for tribal lands. These stakeholders identified several ways in which FCC could work with tribes on this issue, including:

- conducting on-site visits with tribal stakeholders to observe the extent to which broadband infrastructure and services are present;⁵³
- conducting outreach and technical assistance for tribal stakeholders to raise awareness and use of FCC's broadband data; and
- providing opportunities for the tribes to collect their own data or submit feedback regarding the accuracy of FCC's data.

⁵² For example, USDA's Rural Utilities Service sends field representatives to verify the presence or absence of broadband infrastructure before funding broadband grant projects. The field representatives may meet with local representatives as well as local providers, in addition to identifying any existing broadband infrastructure and testing the performance of the services provided. However, FCC officials said that they do not have the resources to conduct field tests of the data.

⁵³ FCC has done such site visits in the past and reported on discrepancies between their observations of broadband infrastructure on tribal lands and the National Broadband Map, noting, "[w]e walked along a route where a carrier had reported broadband service via fiber on the National Broadband Map, yet saw none." Federal Communications Commission, Office of Native Affairs and Policy, *2012 Annual Report* (2012).

FCC's *National Broadband Plan* notes the importance of supporting tribal efforts to build technical expertise with respect to broadband issues, and federal internal control standards state that federal agencies should obtain quality information from external entities.⁵⁴ Officials we interviewed in FCC's Office of Native Affairs and Policy told us that they provide some outreach and technical assistance to tribal officials at regional and national workshops, and FCC officials stated that they conducted specific outreach to tribal entities regarding the Mobility Fund Phase II challenge process,⁵⁵ while, about half of the tribal representatives we spoke to stated that they were not aware of the Form 477 data or corresponding maps, or raised concerns about a lack of outreach from FCC to inform tribes about the data. Some tribal stakeholders stated that if FCC were to solicit tribal input as part of its verification of the broadband data and maps, technical training and assistance could help tribes use and provide feedback on the data, or improve the collection and submission of their own data. A few of the stakeholders we interviewed noted that tribes can face difficulties when they attempt to challenge FCC's broadband availability data. For example, in 2013, prior to the auction that distributed Tribal Mobility Fund Phase 1 support, FCC allowed interested parties to challenge FCC's preliminary determinations regarding which census blocks lacked 3G or better service and would be eligible for support in the auctions.⁵⁶ However, all of the tribal entities that challenged the accuracy of FCC's data were unsuccessful in increasing the number of eligible areas. According to FCC officials, the tribal entities did not provide sufficient or sufficiently verifiable information to support their challenges. A few tribal stakeholders provided varying reasons for this, one of which was the need for more technical expertise to help the tribe meet FCC's requirements.

⁵⁴ [GAO-14-704G](#).

⁵⁵ In commenting on a draft of this report, FCC described its outreach to tribal entities regarding the Mobility Fund Phase II challenge process as sending e-mails to the leaders and information technology managers of all 573 federally recognized tribes, conference calls and webinars open to all tribes, formal presentations at multiple inter-tribal conferences around the country, and a session at a tribal workshop conducted at the Lac du Flambeau Reservation in Wisconsin that was open to all tribes.

⁵⁶ In 2011, as part of its reform to the Universal Service Fund programs and the establishment of new funding mechanisms, FCC decided to use data from a third-party source to identify census blocks without wireless coverage, stating that it could not use Form 477 data due to a lack of census block-level data for wireless service or data from the National Broadband Map due to concerns regarding inconsistencies in how wireless services were reported.

Because FCC lacks a formal process to obtain tribal input on its broadband data, FCC is missing an important source of information regarding areas in which the data may overstate broadband service on tribal lands. Tribal stakeholders are able to provide a first-hand perspective on the extent to which service is available within their lands and the extent to which factors like affordability, service quality, and service denials affect residents' ability to access broadband. FCC plans to award nearly \$2 billion in support from the Connect America Fund to areas that it has identified as lacking broadband, including tribal lands. Any inaccuracies in its broadband data could affect FCC's funding decisions and the ability of tribal lands to access broadband in the future.⁵⁷ Additionally, in its 2017 report on tribal infrastructure, the National Congress of American Indians stressed the importance of including tribal governments in a leadership role with respect to collecting data on local infrastructure needs.⁵⁸ Specifically, it stressed the need for the federal government to invest in tribal data systems and researchers to generate useful, locally specific data that can inform the development and implementation of infrastructure development projects and assess the effectiveness of those projects over time. By establishing a process to obtain input from tribal governments on the accuracy of provider-submitted broadband data that includes outreach and technical assistance, as recommended in the *National Broadband Plan*, FCC could help tribes develop and share locally specific information on broadband access, which would in turn improve the accuracy of FCC's broadband data for tribal lands. The success of such an effort may rely on the tribes' knowledge of, and technical ability to participate in, the process.

⁵⁷ As part of Connect America Fund Phase II, FCC is conducting a reverse auction by which providers submit bids for support to provide fixed broadband service to specific unserved areas. The auction is scheduled to begin July 24, 2018. FCC is not conducting a challenge process to determine whether any census blocks are incorrectly listed as having fixed broadband service, although it has conducted challenge processes in the past before awarding funds. In explaining this decision, FCC stated that a prior challenge process was time consuming and administratively burdensome, and it was difficult for challengers to prove that a company was not serving an area it claimed to serve. FCC also stated that the 477 data was reliable because providers are required to file the data and attest to its accuracy. *In the Matter of Connect America Fund, ETC Annual Reports and Certifications, Rural Broadband Experiments*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5949 ¶¶ 58-59 (2016).

⁵⁸ National Congress of American Indians (NCAI), *Tribal Infrastructure: Investing in Indian Country for a Stronger America*, An initial report by NCAI to the Administration and Congress, 2017.

Half of the Tribal Stakeholders We Interviewed Reported a Lack of Provider Engagement

When discussing the need to improve data regarding broadband on tribal lands, FCC's 2010 *National Broadband Plan* recommended that FCC develop a process for tribes to receive information from providers about broadband services on tribal lands. In 2011, FCC required that Eligible Telecommunications Carriers (providers receiving Universal Service Funds from FCC) serving tribal lands meaningfully engage with tribes regarding communications services (including broadband).⁵⁹ Specifically, the providers must file an annual report documenting that this engagement included a discussion of, among other things, a needs assessment and deployment planning for communications services, including broadband. FCC's 2012 guidance on fulfilling the engagement obligations, which FCC officials confirmed is still in effect, noted that the stated goal of the engagement requirement was to benefit tribal government leaders, providers, and consumers by fostering a dialogue between tribal governments and providers that would lead to improved services on tribal lands. The guidance further noted that the tribal engagement process "cannot be viewed as simply another 'check the box' requirement by either party," and states that a provider should "demonstrate repeated good faith efforts to meaningfully engage with the tribal government."⁶⁰ Finally, FCC noted in its 2012 guidance that the guidance would evolve over time based on the feedback of both tribal governments and broadband providers and that FCC would develop further guidance and best practices.⁶¹ This approach is consistent with federal internal control standards, which call for agencies to communicate with, and obtain quality information from, external parties.⁶²

About half of the tribal stakeholders we interviewed raised concerns about difficulties accessing information from providers regarding broadband deployment on their tribe's lands, a key part of the provider engagement

⁵⁹ *In the Matter of Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663 (2011).

⁶⁰ *Office of Native Affairs and Policy, Wireless Telecommunications Bureau, and Wireline Competition Bureau Issue Further Guidance on Tribal Government Engagement Obligation Provisions of the Connect America Fund*, Public Notice, 27 FCC Rcd 8176 (2012).

⁶¹ 27 FCC Rcd 8176 (2012).

⁶² [GAO-14-704G](#).

process, according to FCC's guidance. For example, a representative from one tribe stated that a provider declined his requests to meet more than once a year to discuss the provider's deployment of broadband services on the tribe's land. A representative from another tribal government stated that some providers are very focused and transparent about their broadband plans and work with the tribe, while other providers treat tribal engagement as a "box to check" and send the tribe broadband deployment information that is not useful because it is redacted. Similarly, some tribal stakeholders stated that providers heavily redacted deployment information (which providers may consider proprietary) or required the tribe sign non-disclosure agreements to access deployment data. According to one tribal stakeholder, these non-disclosure agreements could possibly require tribes to waive tribal sovereign immunity in order to view the data.

Some of the industry stakeholders we interviewed stated that they attempt to engage with tribes but the level of responsiveness from tribes varies. For example, some stakeholders stated that they send letters and do not hear back from tribes. One stakeholder stated that they make repeated attempts to contact tribes when they do not hear back after their initial contact, while another stated that a provider meets regularly with some tribes.

Although FCC stated in its 2012 guidance that it would update the tribal engagement guidance and develop best practices based on feedback from tribal governments and broadband providers, it has taken limited steps to obtain such feedback from providers and tribal governments to determine whether its guidance is enabling meaningful tribal engagement. Additionally, FCC has not updated the guidance or issued best practices.⁶³ Thus, FCC has limited information regarding whether its tribal engagement requirement is fulfilling its intended purpose. FCC officials we interviewed said that the Office of Native Affairs and Policy (ONAP) provided information and, in some cases, held training sessions about the tribal engagement obligation during workshops with tribal representatives, and encouraged representatives to contact ONAP with any concerns. ONAP officials also noted that they handle complaints from tribes regarding a lack of provider engagement and reach out to providers to

⁶³ *Office of Native Affairs and Policy, Wireless Telecommunications Bureau, and Wireline Competition Bureau Issue Further Guidance on Tribal Government Engagement Obligation Provisions of the Connect America Fund*, Public Notice, 27 FCC Rcd 8176 (2012).

address tribal concerns. ONAP officials stated that they have had internal discussions about whether the guidance is clear or needs revision, but this has not gone beyond internal discussions.⁶⁴ A few of the tribal stakeholders provided examples of the benefits of providers engaging with tribes to ensure tribal representatives have access to information regarding broadband availability on their lands. For example, one representative stated that this information could help the tribes plan deployments by focusing on areas that they know the provider does not plan to serve. Another representative stated that tribal engagement could help improve the accuracy of FCC's broadband maps. By obtaining feedback from both tribal stakeholders and providers on the effectiveness of FCC's tribal engagement guidance to determine whether changes are needed, FCC would be better positioned to ensure that tribal governments and providers are sharing information in a manner that will lead to improved services on tribal lands.

Conclusions

FCC has collected data and developed maps and reports depicting broadband on tribal lands and has noted the lower levels of broadband access on tribal lands, in comparison to other areas. However, limitations in FCC's existing process for collecting and reporting broadband data have led FCC to overstate broadband access on tribal lands. By taking steps to address these limitations and to collect data that more accurately and completely depict broadband access on tribal lands, FCC would have greater assurance that it is making progress on reducing the digital divide on tribal lands and targeting broadband funding to tribal lands most in need. Without taking these steps, FCC increases the risk that residents living on tribal lands will continue to lack broadband access.

Compounding the limitations in FCC's data collection process is FCC's lack of a formal process to obtain tribal input on the accuracy of provider-submitted broadband data for tribal lands. By developing a process to solicit tribal input and ensuring that tribes know about the process and are equipped with the technical skills and abilities necessary to provide this information, FCC would be better able to ensure the accuracy of its

⁶⁴ FCC officials also noted that industry stakeholders filed petitions for reconsideration of the tribal engagement obligation and FCC's 2012 guidance (these petitions cited concerns with FCC's process for developing the requirements, among others), but noted that these petitions remain pending.

broadband data for tribal lands. Moreover, FCC would be able to obtain firsthand, locally specific information on broadband access that could inform FCC's policies and funding decisions and help FCC achieve its goal of increasing broadband access for all Americans, including those living on tribal lands. Finally, by obtaining feedback from providers and tribal stakeholders on the effectiveness of FCC's tribal engagement guidance, FCC would be better positioned to assess whether its guidance is helping providers meet requirements and ultimately whether providers' engagement is fulfilling its intended purpose of fostering a dialogue between tribal governments and providers that would lead to improved services on tribal lands.

Recommendations

We are making the following three recommendations to the Chairman of the Federal Communications Commission.

- The Chairman of the Federal Communications Commission should develop and implement methods—such as a targeted data collection—for collecting and reporting accurate and complete data on broadband access specific to tribal lands. (Recommendation 1)
- The Chairman of the Federal Communications Commission should develop a formal process to obtain tribal input on the accuracy of provider-submitted broadband data that includes outreach and technical assistance to help tribes participate in the process. (Recommendation 2)
- The Chairman of the Federal Communications Commission should obtain feedback from tribal stakeholders and providers on the effectiveness of FCC's 2012 statement to providers on how to fulfill their tribal engagement requirements to determine whether FCC needs to clarify the agency's tribal engagement statement. (Recommendation 3)

Agency Comments

We provided a draft of this report to FCC for review and comment. In written comments provided by FCC (reproduced in appendix III), FCC agreed with our findings and recommendations. In its written comments, FCC described efforts, some of which are already under way, that it felt would address each recommendation and stated its intent to build upon those efforts. For example, FCC explained that it is exploring methods to

collect more granular broadband deployment data and noted the need to balance the burden on Form 477 filers. FCC also noted that it is starting work to address a statutorily-required evaluation of broadband coverage on certain tribal lands. We agree that increasing the granularity of deployment data is helpful in addressing data accuracy issues, but we also note that it is important to collect data related to factors that affect broadband access on tribal lands.

FCC also described informal efforts to collect tribal feedback on providers' broadband data and stated it would explore options for a formal process to collect feedback. Regarding our recommendation related to providers' engagement efforts, FCC outlined its existing methods by which tribal stakeholders can provide feedback on providers' engagement efforts and agreed that seeking additional feedback from tribal stakeholders and providers would be desirable. We agree that improving feedback in these ways could help FCC determine whether it needs to clarify its tribal engagement statement. FCC also provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Chairman of the Federal Communications Commission, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-2834 or GoldsteinM@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.



Mark L. Goldstein
Director, Physical Infrastructure Issues

Appendix I: List of Interviewees

Representatives from tribal governments or tribally owned broadband providers

-
- Choctaw Nation of Oklahoma (OK)
-
- Confederated Tribes of the Colville Reservation (WA)
-
- Fond du Lac Band of Lake Superior Chippewa (MN)
-
- Fort Belknap Indian Community (MT)
-
- Gila River Telecommunications, Inc. (AZ)
-
- Hopi Telecommunications, Inc. (AZ)
-
- Jamestown S’Klallam Tribe (WA)
-
- Karuk Tribe (CA)
-
- Leech Lake Band of Ojibwe (MN)
-
- Makah Tribe (WA)
-
- Navajo Tribal Utility Authority (AZ, NM, UT)
-
- Nez Perce Tribe (ID)
-
- Osage Nation (OK)
-
- Pueblo of Acoma (NM)
-
- Pueblo of Pojoaque (NM)
-
- Pueblo of San Ildefonso (NM)
-
- Taos Pueblo (NM)
-
- Red Spectrum Communications (Coeur d’Alene Tribe (ID))
-
- Saint Regis Mohawk Tribe and Mohawk Networks, LLC (NY)
-
- San Carlos Apache Telecommunications Utility, Inc. (AZ)
-
- Southern California Tribal Chairmen’s Association - Tribal Digital Village Network (CA)
-
- Spokane Tribe of Indians and Spokane Tribe Telecom Exchange (WA)
-
- Standing Rock Telecommunications, Inc. (ND, SD)
-
- Warm Springs Telecommunications Co. (OR)
-
- Yurok Tribe and Yurok Connect (CA)

Representatives from tribal associations/consortiums that include tribes

-
- Affiliated Tribes of Northwest Indians
-
- Middle Rio Grande Pueblo Consortium
-
- National Congress of American Indians
-
- National Tribal Telecommunications Association
-
- Native American Finance Officers Association (NAFOA)
-
- REDINet
-

Appendix I: List of Interviewees

Representatives from companies/academic groups that work with tribes

AMERIND Risk

Arizona State University, American Indian Policy Institute and School of Public Affairs

Mobius Legal Group PLLC

Turtle Island Communications

Representatives from providers/trade associations (non-tribally owned)

AT&T

CenturyLink

CTIA

Commnet

Frontier

Inland Cellular

King Street Wireless

Kit Carson Electric Cooperative

NTCA

Pine Telephone Company

Rural Wireless Association

Verizon

^a

Representatives from companies that collect broadband data

Alexicon

Connected Nation

Government Agencies (non-tribal)

Census Bureau

U.S. Department of Agriculture's Rural Utilities Service

Federal Communications Commission

Department of Interior's Bureau of Indian Affairs

National Telecommunications and Information Administration

Housing and Urban Development

Indian Health Service

Minnesota Office of Broadband Development

Source: GAO. | GAO-18-630

^aOne broadband provider we interviewed did not want to be included in this appendix.

Appendix II: Objectives, Scope, and Methodology

This report discusses the extent to which: (1) the Federal Communications Commission’s (FCC) approach to collecting broadband availability data accurately captures the ability of Americans living on tribal lands to access broadband Internet services and (2) FCC obtains tribal input on the accuracy of provider-submitted broadband data for tribal lands.

To address both objectives, we analyzed FCC’s December 2016 fixed and mobile broadband availability data—the most recent data at the time of our review—to identify the speeds, technologies, and availability providers reported for federally recognized tribal lands.¹ Providers currently report this information to FCC by filing a “Form 477,” twice a year. We also used 2010 U.S. Census data to identify census blocks completely or partially on tribal lands. To assess the reliability of FCC’s data and 2010 U.S. Census data, we reviewed a previous GAO reliability assessment, and for FCC’s data we conducted electronic testing and analysis of the data, reviewed FCC guidance and documentation, and interviewed FCC officials.² Based on the results of our analysis, we determined the data to be reliable for our purposes, which were: (1) to inform our selection of tribal governments and providers for interviews and visits, as described below, and (2) to develop maps depicting fixed and mobile broadband availability for the nine tribal lands we selected for

¹ We defined federally recognized tribal lands consistent with FCC’s definition in its 2018 Broadband Deployment Report. Specifically, we considered tribal lands to be: (1) Joint Use Areas; (2) legal federally recognized American Indian area consisting of reservation and associated off-reservation trust land; (3) legal federally recognized American Indian area consisting of reservation only; (4) legal federally recognized American Indian area consisting of off-reservation trust land only; (5) Statistical American Indian area defined for a federally recognized tribe that does not have reservation or off-reservation trust land, specifically a Tribal Designated Statistical Area (TDSA) or Oklahoma Tribal Statistical Area (OTSA); (6) Alaskan Native village statistical area; and (7) Hawaiian Home Lands established by the Hawaiian Homes Commission Act of 1921. See 33 FCC Rcd 1660 ¶¶ 31-32 (2018).

² We reviewed the data reliability assessment from GAO, *Broadband: Additional Stakeholder Input Could Inform FCC Actions to Promote Competition*, [GAO-17-742](#) (Washington, D.C.: Sept. 19, 2017).

visits, in order to obtain tribal representatives' feedback on the data. Specifically, we mapped;

- fixed broadband data according to speed and technology, and
- mobile data for long-term evolution (LTE) services by provider for each tribal land.³

We used those maps during our visits to discuss the accuracy of the data with representatives for each tribal government or tribally owned provider. Though we analyzed all up and download speeds that providers reported in the Form 477, for the purposes of this report we defined "broadband" as fixed Internet service reaching at least 25 megabits per second (Mbps) download and 3 Mbps upload speeds, in accordance with FCC's advanced telecommunications capability benchmark in its 2018 Broadband Deployment Report.⁴ We also report on the availability of mobile broadband, which, for the purposes of this report, does not have a speed threshold and refers to long-term evolution (LTE) services.

To address both objectives and obtain tribal government representatives' feedback on the accuracy of FCC's broadband data for their lands, we interviewed representatives from 25 tribal governments or tribally owned providers, including visits to 9 tribal lands. We considered a range of factors when we selected tribal governments and tribally owned providers for interviews, including our analysis of Form 477 data, recommendations from tribal, industry, or government stakeholders regarding tribal and non-tribal representatives familiar with broadband data issues, and demographic and geographic characteristics, among others. For example, we considered demographic characteristics such as unemployment rate from the 2011–2015 American Community Survey data, and geographic characteristics such as rurality from the United States Department of Agriculture (USDA) Rural-Urban Commuting Area Codes data. The tribes included in our review vary with respect to location, level of broadband availability according to FCC, land mass, and population size and density. The results of our interviews are not generalizable to all tribal governments or tribally owned broadband providers. In addition to tribal governments and tribally owned providers, we interviewed six tribal organizations and four stakeholders who work with tribes on broadband

³ LTE is an industry standard that is part of the fourth generation of wireless telecommunications technology, which is currently in common use.

⁴ 33 FCC Rcd 1660 ¶¶ 31-32 (2018).

issues. For reporting purposes, we developed the following series of indefinite quantifiers to describe the tribal responses from the 35 entities representing tribal stakeholders we interviewed:

- 3 to 7 is defined as “a few;”
- 8 to 15 is described as “some;”
- 16 to 20 is described as “about half;”
- 21 to 27 is described as “most;” and
- 28 to 34 is described as “almost all.”

A full list of the tribal stakeholders we interviewed can be found in appendix I.

Further, to obtain industry perspectives, we reviewed public comments submitted by providers and industry associations in FCC’s ongoing 2017 *Notice of Proposed Rulemaking on Modernizing the Form 477 Data Program*.⁵ We also interviewed 10 non-tribally owned fixed and mobile broadband providers and three industry associations to understand providers’ views on the Form 477 and how providers interact with tribal governments. When selecting providers for interviews, we included providers that reported serving the lands of tribal governments we interviewed and selected providers that varied in the percentage of tribal lands they reported serving. The providers we interviewed represent large, nationwide carriers as well as small, local carriers, and offer broadband via a variety of technologies, including fiber optics, digital subscriber line (DSL), fixed wireless, and mobile LTE.⁶ The results of our interviews with providers are not generalizable to all broadband providers. In addition, to address both objectives, we interviewed representatives from other government entities, as well as private companies that collect and report broadband data. A full list of the industry stakeholders we interviewed can be found in appendix I.

To identify the extent to which FCC’s approach to collecting broadband availability data reflects the ability of Americans living on tribal lands to actually access broadband Internet services, we reviewed documentation

⁵ *Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, 32 FCC Rcd 6329 (2017).

⁶ Digital subscriber line (DSL) service typically refers to Internet services delivered over traditional copper phone lines.

of the Form 477 process, including submission guidance, and FCC's proposals and public comments in its 2017 *Notice of Proposed Rulemaking on Modernizing the Form 477 Data Program* and Mobility Fund Phase II proceedings.⁷ We also interviewed FCC officials, industry stakeholders, and tribally owned broadband providers to understand FCC's current process for collecting broadband data. To understand the purpose of the Form 477 data collection process and FCC's strategic goals, we reviewed relevant statutes, and FCC documents, including FCC's *Strategic Plan 2018—2022*, the *National Broadband Plan*, and FCC's broadband deployment and progress reports.⁸ Given the importance placed on broadband access in these documents, we interviewed tribal stakeholders, as described above and reviewed FCC documents to identify factors affecting the ability of Americans living on tribal lands to access broadband Internet services. We also reviewed previous GAO work that identified barriers to broadband access on tribal lands.⁹ We compared the Form 477 process to FCC's strategic goals and to factors affecting broadband access to determine the extent to which the Form 477 was designed to collect information on those factors and to meet FCC's goals. We further evaluated this information against the *Government Performance and Results Act, as enhanced by the GPRA Modernization Act of 2010* and *Standards for Internal Control in the Federal Government*.¹⁰ We also reviewed documentation for other FCC data collection programs, including the *Measuring Broadband America* program and the Urban Rate Survey, to determine the extent to which FCC collected data on factors affecting broadband access outside of the Form 477 process.

⁷ 32 FCC Rcd 6329 (2017); *Connect America Fund Universal Service Reform—Mobility Fund*, Order on Reconsideration and Second Report and Order, 32 FCC Rcd 6282 (2017); *Instructions for Filing 4G LTE Coverage Data to Determine Areas Presumptively Eligible for Mobility Fund II Support*, Public Notice, 32 FCC Rcd 7023 (2017).

⁸ Communications Act of 1934, Pub. L. No. 73-416, 48 Stat. 1064 (1934), as amended by *Telecommunications Act of 1996*, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996) (codified as amended at 47 U.S.C. § 151); FCC, *Strategic Plan 2018-2022* (Washington, D.C.); 33 FCC Rcd 1660 ¶¶ 31-32 (2018); 31 FCC Rcd 699 (2016).

⁹ GAO, *Telecommunications: Additional Coordination and Performance Measurement Needed for High-Speed Internet Access Programs on Tribal Lands*, [GAO-16-222](#) (Washington, D.C.: Jan. 29, 2016)

¹⁰ Government Performance and Results Act, Pub. L. No. 103-62, 107 Stat. 285 (1993), as enhanced by GPRA Modernization Act of 2010, Pub. L. No. 111-352, 124 Stat. 3866, 3867 (2011). (codified at 31 U.S.C. § 1115(b)(2), (6)); GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 2014).

To determine the extent to which FCC obtains tribal input on the accuracy of provider-submitted broadband data for tribal lands, we interviewed FCC officials and analyzed FCC documents regarding the collection procedures for the Form 477 data and FCC's policies for working with tribal governments, as well as Connect America Fund documents regarding requirements for providers to share information with tribal governments.¹¹ We also reviewed documents on past FCC Universal Service Fund processes to challenge broadband data and identified prior instances in which tribal governments or tribally owned providers challenged FCC's broadband data and the outcomes of those challenges. Additionally, we interviewed tribal stakeholders, as described above, to understand the extent to which: (1) FCC involves tribal governments and other stakeholders in the validation of Form 477 broadband data, (2) tribal governments can access broadband data from FCC or providers, and (3) FCC's Form 477 data accurately reflected broadband access on their lands. For the nine tribal lands we visited, we asked tribal governments or tribally owned providers to identify where the data do or do not accurately reflect broadband access on maps of FCC's data. Further, to identify how providers complied with FCC's tribal engagement requirement and obtain their perspectives, we interviewed providers and industry associations. We compared FCC's data validation procedures and tribal stakeholders' feedback on the process to FCC's policies for working with tribal governments, FCC recommendations from the *National Broadband Plan* and *Standards for Internal Control in the Federal Government*.¹² We also interviewed and received written comments from officials from other federal agencies that have broadband programs, including USDA Rural Utilities Service, the National Telecommunications and Information Administration (NTIA), and others, in addition to a state agency and three private companies that collect and report broadband data to understand how other entities collect and validate broadband data.¹³

We conducted this performance audit from June 2017 to September 2018 in accordance with generally accepted government auditing standards.

¹¹ *Statement of Policy on Establishing a Government-to-Government Relationship with Indian Tribes*, Policy Statement, 16 FCC Rcd 4078 (2000); 47 C.F.R. § 54.313 (a)(5); *Further Guidance on Tribal Government Engagement Obligation Provisions of the Connect America Fund*, Public Notice, 27 FCC Rcd 8176 (2012).

¹² *Connecting America: The National Broadband Plan*, Notice of Inquiry and Notice of Proposed Rulemaking, 25 FCC Rcd 6657 (2010); [GAO-14-704G](#)

¹³ We received written comments from one company that collects broadband data.

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.

Appendix III: Comments from the Federal Communications Commission



Federal Communications Commission

Washington, D.C. 20554

August 22, 2018

Mark L. Goldstein, Ph.D.
Director, Physical Infrastructure Issues
Government Accountability Office
441 G Street, NW
Washington, D.C. 20548

Dear Director Goldstein:

Thank you for the opportunity to review GAO's draft report, "FCC's Data Overstate Access on Tribal Lands." The Commission has long recognized the particular challenges associated with providing telecommunications services on Tribal lands, and we agree with GAO that accurate, comprehensive data are vital to the Commission's efforts to bridge the digital divide, including on Tribal lands. As described below, we have efforts underway to ensure that we collect the best possible data and, indeed, we believe that we already have work in progress to address each of the three recommendations GAO advances. We will continue with the work underway and re-double our efforts to close the digital divide for all Americans, including those on Tribal lands.

Methods to Collect and Report Data on Broadband Access to Specific Tribal Lands. GAO's first recommendation is that the FCC Chairman "should develop and implement methods—such as targeted data collection—for collecting and reporting accurate and complete data on broadband access to specific tribal lands." The Commission agrees with the importance of having access to quality data. For this reason, the Commission has initiated a rulemaking proceeding to explore ways in which it could improve aspects of the Form 477 collection.¹ In that proceeding, the Commission sought comment on a wide variety of issues related to making the Form 477 collection as efficient and effective as possible. Among these issues is whether the Commission should revise the Form 477 to collect deployment data on a more granular level than it does currently. Given a better understanding of the Form 477 instructions, the issue of granularity appears to underlie many of GAO's concerns in the draft report about Form 477 deployment data—the issue that individual locations might not have network coverage in a Census block with some deployment. We are cognizant that increasing granularity in the collection would require the Commission to resolve significant technical issues and would

¹ *Modernizing the FCC Form 477 Data Program*; Further Notice of Proposed Rulemaking; WC Docket 11-10 (2017).

likely increase the burden on Form 477 filers. If an appropriate method for such a collection can be identified, however, this may address many of the concerns GAO raises in the draft report by providing the Commission with a more precise picture of broadband deployment. We are continuing to work on these issues in the context of WC Docket 11-10.

Also relevant to GAO's first recommendation is the requirement in the *Consolidated Appropriations Act of 2018* that the Commission conduct an assessment regarding the availability of broadband services in Indian country and to report on the results by March 23, 2019.² Based on the results of that assessment, the legislation directs the Commission to conduct a rulemaking proceeding to address the unserved areas identified in the report. We have initiated work on that effort and will work with Tribal and other stakeholders to develop a clear picture of broadband deployment on Tribal lands and address unserved areas.

The Commission recognizes that the digital divide is all too real, especially in Indian country. That's why the Commission has primarily relied on Form 477 data for a limited purpose—identifying the too-many census blocks where “no” Internet service provider has deployed broadband infrastructure, and thus the areas that unambiguously need federal funding through the Connect America Fund to get broadband. This divide is particularly stark on Tribal lands, as GAO recognizes, with more than 35% of Tribal residents lacking “any” chance to access broadband infrastructure.

And the Commission has recognized that more granular data will be needed in the future. As our policies bring broadband deployment into wholly unserved blocks, it will be more important to understand availability in partially served blocks. That's why the Commission opened a proceeding into this issue last year, and the Commission remains dedicated to moving forward with a proceeding that explores ways to collect more granular data without unnecessarily burdening those who are deploying on Tribal lands and often with few resources to spare.

Process to Obtain Tribal Input on Provider-Submitted Broadband Data. The draft report's second recommendation is that the Chairman of the FCC “develop a process to obtain tribal input on the accuracy of provider-submitted broadband data that includes outreach and technical assistance to help tribes participate in the process.” The Commission agrees that tribal input on the accuracy of provider-submitted broadband data is important. Indeed, the FCC currently has in place a number of informal means by which Tribal and other stakeholders can raise any concerns. For example, Tribal stakeholders can, and do, raise concerns and questions about the data to the Commission's Office of

² *Consolidated Appropriations Act, 2018*, H.R. 1625, 115th Cong., Division P, *Ray Baum's Act*, § 508. (2018).

Native Affairs and Policy (ONAP), which shares them with the relevant bureaus. In addition, the Commission has given Tribes a direct role in evaluating and challenging providers' claims of service coverage in the ongoing Mobility Fund Phase II (MF-II) proceeding. ONAP and the Commission's Rural Broadband Auctions Task Force have cooperated on a number of initiatives to make Tribal leaders and others aware of the MF-II challenge process for the Mobility Fund II auction eligible areas and the importance of participating in that process. These efforts have included sending information in emails to the leaders and IT managers of all 573 federally recognized Tribes; conducting outreach, including conference calls and webinars open to all Tribes; formal presentations at multiple inter-tribal conferences around the country; and a session at a July 31 Tribal workshop conducted at the Lac du Flambeau Reservation in Wisconsin that was open to all Tribes. We agree that, in addition to these mechanisms, implementing a formal process for continuing Tribal engagement could have significant value in helping the FCC understand both the extent of, and the specific issues that drive or hinder, broadband deployment on Tribal lands. We will work with stakeholders to explore options for implementing such a formal process.

Feedback from Tribal Stakeholders and Providers on Providers' Tribal Engagement Requirements. Finally, the draft report recommends that the FCC Chairman "obtain feedback from tribal stakeholders and providers on the effectiveness of the FCC's 2012 statement to providers on how to fulfill their tribal engagement requirements to determine whether the Commission needs to clarify its tribal engagement statement." We agree that seeking additional feedback on the overall effectiveness of the Commission's Further Guidance Public Notice is desirable. We note that the Commission's ONAP solicits and receives feedback from Tribes on whether and how providers are fulfilling the requirements of the rule, the effectiveness of the Commission's guidance, and any problems encountered in the engagement process. ONAP regularly includes presentations on the Tribal engagement obligation at its Tribal workshops, which it conducts at different locations around the country throughout the year. Additionally, ONAP solicits and receives feedback on the engagement requirements from Tribes and other participants at inter-Tribal conferences and similar events. As a result of feedback concerning the availability of compliance reporting, the Commission has made changes to its filing requirements and Tribal Nations will soon be able to obtain providers' reports on their Tribal engagement efforts directly through a Universal Service Administrative Company online portal. We will continue to seek additional feedback from Tribal stakeholders, as

well as feedback from providers, regarding the effectiveness of the guidance provided by the Commission thus far on how providers may fulfill their Tribal engagement requirements.

Thank you for the opportunity to review GAO's recommendations. We look forward to working with GAO in the future.

Sincerely,


Kris Anne Monteith
Chief, Wireline Competition Bureau



Patrick Webre
Chief, Consumer and Governmental Affairs
Bureau

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Mark L. Goldstein, (202) 512-2834 or GoldsteinM@gao.gov.

Staff Acknowledgments

In addition to the contact named above, Keith Cunningham (Assistant Director); Crystal Huggins (Analyst in Charge); Katherine Blair; Lilia Chaidez; Camilo Flores; Adam Gomez; Serena Lo; Jeffery Malcolm; John Mingus; Joshua Ormond; Jay Spaan; James Sweetman, Jr.; Elaine Vaurio; and Michelle Weathers made key contributions to this report.

Appendix V: Accessible Data

Agency Comment Letter

Text of Appendix III: Comments from the Federal Communications Commission

Page 1

Dear Director Goldstein:

Thank you for the opportunity to review GAO's draft report, "FCC's Data Overstate Access on Tribal Lands." The Commission has long recognized the particular challenges associated with providing telecommunications services on Tribal lands, and we agree with GAO that accurate, comprehensive data are vital to the Commission's efforts to bridge the digital divide, including on Tribal lands. As described below, we have efforts underway to ensure that we collect the best possible data and, indeed, we believe that we already have work in progress to address each of the three recommendations GAO advances. We will continue with the work underway and re-double our efforts to close the digital divide for all Americans, including those on Tribal lands.

Methods to Collect and Report Data on Broadband Access to Specific Tribal Lands. GAO's first recommendation is that the FCC Chairman "should develop and implement methods-such as targeted data collection-for collecting and reporting accurate and complete data on broadband access to specific tribal lands." The Commission agrees with the importance of having access to quality data. For this reason, the Commission has initiated a rulemaking proceeding to explore ways in which it could improve aspects of the Form 477 collection. 1 In that proceeding, the Commission sought comment on a wide variety of issues related to making the Form 477 collection as efficient and effective as possible. Among these issues is whether the Commission should revise the Form 477 to collect deployment data on a more granular level than it does currently. Given a better understanding of the Form 477 instructions, the issue of granularity appears to underlie many of GAO's concerns in the draft report about Form 477 deployment data-the issue that individual locations might not have network coverage in a Census block with some deployment. We are cognizant that increasing granularity in the collection

would require the Commission to resolve significant technical issues and would likely increase the burden on Form 477 filers. If an appropriate method for such a collection can be identified, however, this may address many of the concerns GAO raises in the draft report by providing the Commission with a more precise picture of broadband deployment. We are continuing to work on these issues in the context of WC Docket 11-10.

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Also relevant to GAO's first recommendation is the requirement in the Consolidated Appropriations Act of 2018 that the Commission conduct an assessment regarding the availability of broadband services in Indian country and to report on the results by March 23, 2019.² Based on the results of that assessment, the legislation directs the Commission to conduct a rulemaking proceeding to address the unserved areas identified in the report. We have initiated work on that effort and will work with Tribal and other stakeholders to develop a clear picture of broadband deployment on Tribal lands and address unserved areas.

The Commission recognizes that the digital divide is all too real, especially in Indian country. That's why the Commission has primarily relied on Form 477 data for a limited purpose—identifying the too-many census blocks where “no” Internet service provider has deployed broadband infrastructure, and thus the areas that unambiguously need federal funding through the Connect America Fund to get broadband. This divide is particularly stark on Tribal lands, as GAO recognizes, with more than 35% of Tribal residents lacking “any” chance to access broadband infrastructure.

And the Commission has recognized that more granular data will be needed in the future. As our policies bring broadband deployment into wholly unserved blocks, it will be more important to understand availability in partially served blocks. That's why the Commission opened a proceeding into this issue last year, and the Commission remains dedicated to moving forward with a proceeding that explores ways to collect more granular data without unnecessarily burdening those who are deploying on Tribal lands and often with few resources to spare.

Process to Obtain Tribal Input on Provider-Submitted Broadband Data. The draft report's second recommendation is that the Chairman of the FCC “develop a process to obtain tribal input on the accuracy of provider-submitted broadband data that includes outreach and technical

assistance to help tribes participate in the process.” The Commission agrees that tribal input on the accuracy of provider-submitted broadband data is important. Indeed, the FCC currently has in place a number of informal means by which Tribal and other stakeholders can raise any concerns. For example, Tribal stakeholders can, and do, raise concerns and questions about the data to the Commission’s Office of Native Affairs and Policy (ONAP), which shares them with the relevant bureaus.

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In addition, the Commission has given Tribes a direct role in evaluating and challenging providers’ claims of service coverage in the ongoing Mobility Fund Phase II (MF-II) proceeding. ONAP and the Commission’s Rural Broadband Auctions Task Force have cooperated on a number of initiatives to make Tribal leaders and others aware of the MF-II challenge process for the Mobility Fund II auction eligible areas and the importance of participating in that process. These efforts have included sending information in emails to the leaders and IT managers of all 573 federally recognized Tribes; conducting outreach, including conference calls and webinars open to all Tribes; formal presentations at multiple inter-tribal conferences around the country; and a session at a July 31 Tribal workshop conducted at the Lac du Flambeau Reservation in Wisconsin that was open to all Tribes. We agree that, in addition to these mechanisms, implementing a formal process for continuing Tribal engagement could have significant value in helping the FCC understand both the extent of, and the specific issues that drive or hinder, broadband deployment on Tribal lands. We will work with stakeholders to explore options for implementing such a formal process.

Feedback from Tribal Stakeholders and Providers on Providers’ Tribal Engagement Requirements. Finally, the draft report recommends that the FCC Chairman “obtain feedback from tribal stakeholders and providers on the effectiveness of the FCC’s 2012 statement to providers on how to fulfill their tribal engagement requirements to determine whether the Commission needs to clarify its tribal engagement statement.” We agree that seeking additional feedback on the overall effectiveness of the Commission’s Further Guidance Public Notice is desirable. We note that the Commission’s ONAP solicits and receives feedback from Tribes on whether and how providers are fulfilling the requirements of the rule, the effectiveness of the Commission’s guidance, and any problems encountered in the engagement process. ONAP regularly includes presentations on the Tribal engagement obligation at its Tribal workshops, which it conducts at different locations around the country

throughout the year. Additionally, ONAP solicits and receives feedback on the engagement requirements from Tribes and other participants at inter-Tribal conferences and similar events. As a result of feedback concerning the availability of compliance reporting, the Commission has made changes to its filing requirements and Tribal Nations will soon be able to obtain providers' reports on their Tribal engagement efforts directly through a Universal Service Administrative Company online portal. We will continue to seek additional feedback from Tribal stakeholders, as well as feedback from providers, regarding the effectiveness of the guidance provided by the Commission thus far on how providers may fulfill their Tribal engagement requirements.

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Thank you for the opportunity to review GAO's recommendations. We look forward to working with GAO in the future.

Sincerely,

Kris Anne Monteith
Chief, Wireline Competition Bureau

Patrick Webre
Chief, Consumer and Governmental Affairs Bureau

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