



January 2016

TELECOMMUNICATIONS

Additional Coordination and Performance Measurement Needed for High-Speed Internet Access Programs on Tribal Lands

Accessible Version

GAO Highlights

Highlights of [GAO-16-222](#), a report to congressional requesters

Why GAO Did This Study

High-speed Internet service is viewed as a critical component of the nation's infrastructure and an economic driver, particularly to remote tribal communities. However, in 2015, FCC reported that the lack of service in tribal areas presents impediments. GAO was asked to review the status of high-speed Internet on tribal lands. The report examines (1) perspectives of tribes and providers on high-speed Internet access and barriers to increasing this access; (2) the level of interrelation and coordination between federal programs that promote high-speed Internet access on tribal lands; and (3) existing data and performance measures related to high-speed Internet on tribal lands. GAO visited or interviewed officials from a non-generalizable sample of 21 tribal entities and 6 service providers selected to provide diversity in size, location, and poverty levels. GAO also reviewed FCC and USDA fiscal year 2010 through 2014 program data, funding, and materials and interviewed federal officials.

What GAO Recommends

GAO recommends that FCC (1) develop joint training and outreach with USDA; (2) develop performance goals and measures for tribal areas for improving broadband availability to households; (3) develop performance goals and measures for improving broadband availability to tribal schools and libraries; and (4) improve the reliability of FCC data related to institutions that receive E-rate funding by defining "tribal" on the program application. FCC agreed with the recommendations.

View [GAO-16-222](#). For more information, contact Mark Goldstein at (202) 512-6670 or goldsteinm@gao.gov.

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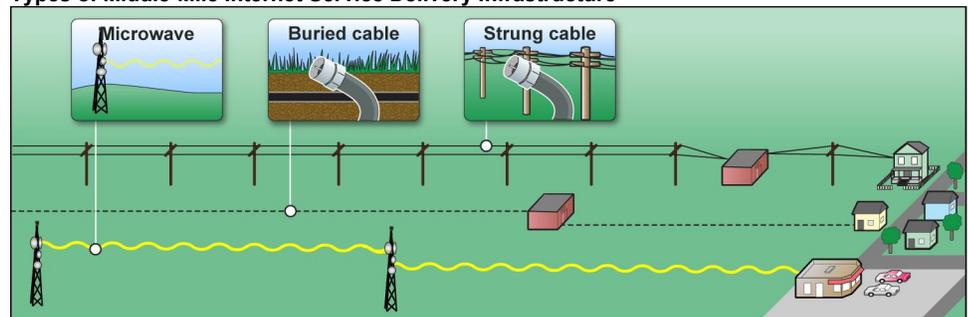
TELECOMMUNICATIONS

Additional Coordination and Performance Measurement Needed for High-Speed Internet Access Programs on Tribal Lands

What GAO Found

Although all 21 tribes GAO interviewed have some access to high-speed Internet, tribes and providers GAO interviewed cited barriers to increasing access. For example, high poverty rates and the high costs of connecting remote tribal villages to core Internet networks—called middle-mile infrastructure—limit high-speed Internet availability and adoption on tribal lands (see fig.). About half of the tribes GAO interviewed also said that the lack of sufficient administrative and technical expertise among tribal members limits their efforts to increase high-speed Internet access.

Types of Middle-Mile Internet Service Delivery Infrastructure



Source: GAO. | GAO-16-222

The Federal Communications Commission's (FCC) Universal Service Fund subsidy programs and the U.S. Department of Agriculture's (USDA) Rural Utilities Service grant programs are interrelated in that they seek to increase high-speed Internet access in underserved areas, including tribal lands. GAO's previous work on overlap, duplication, and fragmentation has shown that interagency coordination on interrelated programs can help ensure efficient use of resources and effective programs. However, FCC and USDA do not coordinate to develop joint outreach and training. This could result in an inefficient use of federal resources and missed opportunities for resource leveraging between FCC and USDA.

FCC has placed special emphasis on improving Internet access on tribal lands following the issuance of the National Broadband Plan, which called for greater efforts to make broadband available on tribal lands. However, FCC has not developed performance goals and measures for improving high-speed Internet availability to households on tribal lands. Without these goals and measures FCC cannot assess the impact of its efforts. The National Broadband Map includes data on Internet availability on tribal lands that could allow FCC to establish baseline measures for Internet availability on tribal lands. Further, FCC also lacks performance goals and measures for tribal institutions—such as schools and libraries. Specifically, FCC's E-rate program provides funds to ensure that schools and libraries have affordable access to modern broadband technologies, but FCC has not set any performance goals for the program's impact on tribal institutions. Nor has FCC defined "tribal" on the E-rate application. Without such information, it will be difficult to accurately track progress in making broadband available in tribal institutions.

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Abbreviations

ACS	American Community Survey
CAF	Connect America Fund
DSL	Digital Subscriber Line
FCC	Federal Communications Commission
Mbps	Megabits Per Second
NTIA	National Telecommunications and Information Administration
OTSA	Oklahoma Tribal Statistical Areas
RUS	Rural Utilities Service
USDA	U.S. Department of Agriculture's
USF	Universal Service Fund

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January 29, 2016

Congressional Requesters

Increasingly, high-speed Internet service is viewed as a critical component of the nation's physical infrastructure and a driver of economic growth. High-speed Internet access provides a number of social and economic benefits including essential communications service for e-commerce, telemedicine, online courses, and other educational tools. The Internet is particularly useful to tribal communities—which are generally located in remote, rural locations—as access to it offers new opportunities for growth, productivity, and innovation. However, in 2012, the Federal Communications Commission's (FCC) Office of Native Affairs and Policy reported that the lack of service in rural and tribal lands presents impediments to efforts of tribal nations to build their internal structures for self-governance, economic opportunity, education, public safety, and cultural preservation.

The communications infrastructure that supports Internet access is, by and large, built and operated by private industry. However, from fiscal years 2010 to 2014, the federal government provided over \$33 billion in assistance to telecommunications service providers and municipalities to build or improve networks in order to further the national goal of universal high-speed Internet access. The federal government has provided this funding through the FCC's Universal Service Fund (USF) and the U.S. Department of Agriculture's (USDA) Rural Utilities Service (RUS).

In January 2015, FCC reported that Americans living in rural areas and on tribal lands disproportionately lack access to high-speed Internet. FCC's data indicate that, as of December 2013, high-speed Internet was available to 37 percent of households on tribal lands—compared to 47 percent of U.S. households in rural areas and 92 percent of U.S. households in urban areas. You asked us to review the availability of high-speed Internet access on tribal lands. This report examines (1) perspectives of selected tribes and providers on the importance of high-speed Internet access for tribes and any barriers to increasing this access on tribal lands; (2) the level of interrelation and coordination between federal programs at FCC and USDA that promote high-speed Internet access on tribal lands; and (3) existing data and FCC performance goals and measures related to access to high-speed Internet service on tribal lands and for tribal institutions.

To determine perspectives of selected tribes and providers on the importance of high-speed Internet access and any barriers to increasing this access on tribal lands, we reviewed relevant literature and interviewed officials from 18 tribal governments in the continental United States, 3 Alaska Native regions, and 6 service providers operating on tribal lands. For the three Alaska Native regions, we visited villages within each region and spoke with officials from the Regional Corporation, regional nonprofit, Village Corporation, tribal government, and city government. To identify tribes to interview, we reviewed the types and amounts of assistance provided by FCC and USDA between fiscal years 2010 and 2014 and Bureau of the Census (Census) 2013 data regarding population and poverty rates. We selected tribes to have a range of population, poverty rates, and locations, both remote and closer to urban areas. For reporting purposes, we developed the following series of indefinite quantifiers to describe the tribal responses from the 21 tribal entities we interviewed.

- 5 of the 21 is described as “a few”;
- 5 to 9 is described as “some”;
- 10 to 12 is described as “about half”;
- 13 to 16 is described as “many”; and
- 17 or more is described as “most”.

We selected service providers to interview using initial tribal interviews and FCC data for fiscal years 2010 through 2014 to identify providers that serve tribal lands and receive federal subsidies or loans to do so. These interviews are not generalizable to all tribes or all service providers. Furthermore, we identified and interviewed industry stakeholders such as research groups and telecommunications associations on their views regarding the barriers to increasing high-speed Internet access to broadband on tribal lands.

To determine the level of interrelation and coordination between federal programs at FCC and USDA that promote high-speed Internet access on tribal lands, we reviewed FCC and USDA program funding and guidance materials for fiscal year 2010 through 2014, interviewed FCC and USDA officials, and interviewed tribal officials from the selected 21 tribal governments or Alaska Native regions and six service providers operating on tribal lands. These interviews are not generalizable to all tribes or all service providers. We evaluated USF and RUS program coordination

based on criteria for implementing interrelated programs developed in previous GAO work on fragmentation, overlap, duplication, and interagency coordination within the federal government.¹

To determine what data and FCC performance goals and measures, if any, exist related to access to high-speed Internet service on tribal lands and to tribal institutions, we analyzed fiscal year 2010 through 2014 data from USF programs providing assistance, reviewed applications and the guidance materials for those programs, and the agencies' performance reports. We also reviewed Census' American Community Survey 5-year data on population, poverty rates, and telecommunication access; and interviewed FCC and Census officials. We determined that FCC and Census data were sufficiently reliable for our purposes by interviewing FCC and Census officials on their data collection and validation efforts. Finally, we reviewed performance goals and measures for USF programs according to criteria established in the Government Performance and Results Act of 1993, as amended² and in federal standards for internal control.³ Appendix I contains a more detailed discussion of our objectives, scope, and methodology. Appendix II provides a list of the Native American Tribes, including Alaska Native Villages; Internet service providers; and other organizations we interviewed.

We conducted this performance audit from February 2015 to January 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

¹ GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, [GAO-15-49SP](#), (Washington, D.C.: April 14, 2015). GAO, *Managing for Results: Barriers to Interagency Coordination*, [GAO/GGD-00-106](#), (Washington, D.C.: March 29, 2000). GAO, *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms*, [GAO-12-1022](#), (Washington, D.C.: September 27, 2012).

² Pub. L. No. 103-62, 107 Stat. 285 (Aug. 3, 1993) as amended by GPRA Modernization Act of 2010, Pub. L. No. 111-352 (2010).

³ GAO, *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: Nov. 1999).

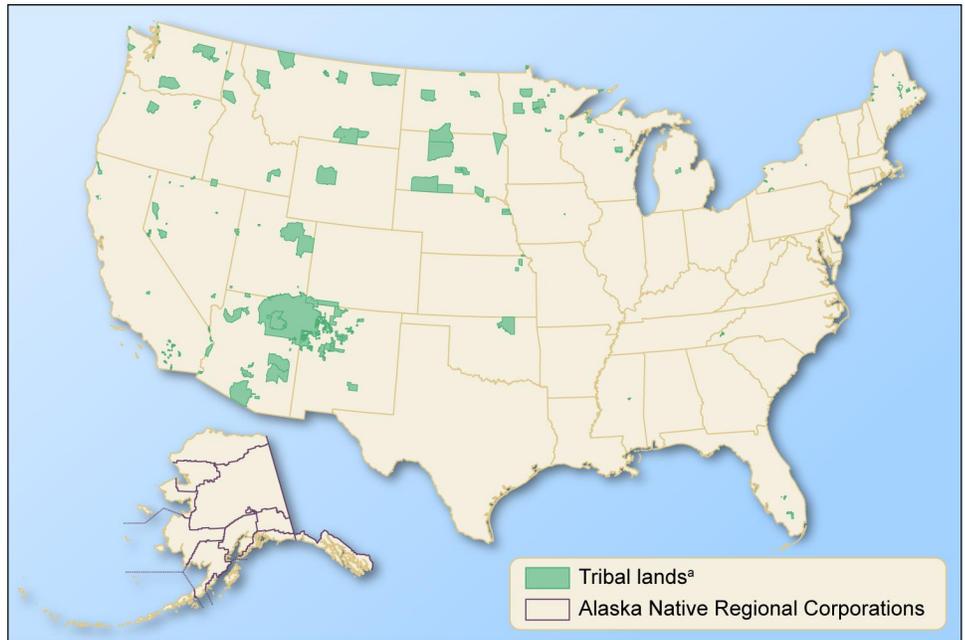
Background

According to 2013 Census estimates, more than 640,000 American Indians and Alaska Natives reside on tribal lands.⁴ The federal government has recognized many American Indian tribes and Alaska Native Villages as distinct, independent political communities with inherent sovereignty. Tribal lands vary in size, demographics, and location. The smallest are less than one square mile, and the largest, the Navajo Nation, is more than 24,000 square miles. Most tribal lands are in remote, rural locations, but some are located near urban areas. There are more than 300 Indian tribes in the continental United States and more than 200 Alaska Native Villages that are federally recognized. The tribal government has the option of forming entities that manage tribal affairs including schools, housing, health, and economic enterprises. Additionally, the Alaska Native Claims Settlement Act of 1971 directed the establishment of 12 regional corporations representing geographic regions of the entire state to, among other things, resolve long-standing aboriginal land claims and foster economic development in Alaska.⁵ These corporations distribute land and monetary benefits to Alaska Natives to provide a fair and just settlement of aboriginal land claims in Alaska. The regional corporations have corresponding nonprofit organizations that provide social services to the villages. Figure 1 shows tribal lands in the United States according to the 2010 Census, and the Alaska Native regions.

⁴ For this report, GAO has defined tribal lands as lands that include any federally recognized Indian tribe's reservation, off-reservation trust lands, pueblo, or colony, and Alaska Native regions established pursuant to the Alaska Native Claims Settlement Act, Pub. L. No. 92-203, 85 Stat. 688 (1971) (codified as amended at 43 U.S.C. §§ 1601 et seq.). Tribal lands do not include Oklahoma Tribal Statistical Areas (OTSA), and the population figure of 640,000 does not include the 401,000 Native Americans living on OTSAs.

⁵ In addition, a thirteenth corporation was established later for nonresident Alaska Natives. See 43 U.S.C. § 1606.

Figure 1: Map of Tribal Lands in the United States, According to the 2010 Census



Sources: United States Census Bureau and GAO. | GAO-16-222

^aFor this report, GAO has defined tribal lands as lands that include any federally recognized Indian tribe's reservation, off-reservation trust lands, pueblo, or colony, and Alaska Native regions established pursuant to the Alaska Native Claims Settlement Act, Pub. L. No. 92-203, 85 Stat. 688 (1971) (codified as amended at 43 U.S.C. §§ 1601 et seq.). Tribal lands do not include Oklahoma Tribal Statistical Areas (OTSA).

Native Americans are among the most economically distressed groups in the United States. According to the Census' 2014 American Community Survey (ACS), about 28.3 percent of Native Americans live in households with incomes below the federal poverty level—compared to 15.5 percent for the U.S. population as a whole. In addition, ACS data shows that residents of tribal lands often lack basic infrastructure, such as water and sewer systems, and telecommunications services. We reported in 2006 that tribal officials and government agencies said that conditions on tribal lands have made successful economic development more difficult than in other parts of the country because the high cost and small markets associated with investment on tribal lands deter business investment. We

found that this was particularly true for businesses such as Internet providers that must build out infrastructure to serve tribal lands.⁶

Customers generally subscribe to Internet through a fixed or mobile device. In-home fixed Internet plans are often sold as a monthly subscription by cable television or telephone companies. Consumers can connect a variety of devices to in-home fixed networks through a wired or wireless connection. Service is provided via different types of technology. Service from cable television companies is generally provided through the same coaxial cables that deliver television programming. Service from telephone companies is generally provided through traditional copper telephone lines—commonly referred to as digital subscriber line (DSL) service—or fiber-optic lines, which convert electrical signals carrying data into light and send the light through glass fibers. In areas where none of these wired connections exist, some carriers offer fixed wireless devices for home use. Advances in technology, such as the use of fiber optics and new wireless technologies have allowed providers to offer increasingly faster high-speed Internet that supports new services and applications such as streaming video. Only these faster speeds attained through fiber and other new technologies are considered high-speed Internet. In 2010, FCC stated that every household and business in America should have access to affordable advanced telecommunication service with a speed of at least 4 Mbps download and at least 1 Mbps upload and that this target should be re-set every four years. In January 2015, FCC adopted a speed benchmark at download speeds of at least 25 Mbps and upload speeds of at least 3 Mbps.⁷ Generally, only cable or fiber can deliver this level of broadband service to consumers' homes.

⁶ GAO, *Telecommunications: Challenges to Assessing and Improving Telecommunications for Native Americans on Tribal Lands*, [GAO-06-189](#) (Washington, D.C.: January 11, 2006).

⁷ In 2010, the National Broadband Plan stated that every household and business in America should have access to affordable broadband service with a speed of at least 4 Mbps download and at least 1 Mbps upload. In January 2015, FCC adopted a speed benchmark at download speeds of at least 25 Mbps and upload speeds of at least 3 Mbps. Inquiry Concerning the Deployment of Advanced Telecommunication Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 14-126, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, 30 FCC Rcd 1375, paras. 3 and 45 (2015 Broadband Progress Report).

Mobile service is provided through cell tower coverage with data transmitted over the radio spectrum.⁸ Traditionally, mobile service providers sold access to the Internet as an option to mobile telephone service plans. A number of devices may connect to mobile high-speed networks, such as smart phones, tablets, and mobile devices that enable laptops to connect to a wireless service.

The federal government has recognized the difficulties of providing services on tribal lands, and has maintained several ongoing programs to increase Internet availability and access in unserved areas. The USDA's Rural Utilities Service (RUS) and FCC are responsible for several programs designed to improve the nation's telecommunications infrastructure. RUS's programs focus on rural telecommunications development, while FCC's programs under the Universal Service Fund (USF) focus on providing support for areas where the cost of providing services is high, as well as for low-income consumers, schools, libraries, and rural health care facilities. All of these programs, which are discussed in more detail later in this report, seek to expand high-speed Internet access and can benefit tribal lands and their populations.

The American Recovery and Reinvestment Act of 2009 (Recovery Act)⁹ authorized other, one-time federal programs such as the Broadband Initiatives Program¹⁰ and the Broadband Technologies Opportunities Program¹¹ to expand high-speed Internet access in unserved areas, including on tribal lands. The Recovery Act also directed FCC to develop a national broadband plan to ensure every American had access to high-speed Internet service. In March 2010, FCC issued the National Broadband Plan that included a centralized vision for achieving affordability and maximizing use of high-

⁸ The radio spectrum is the radio frequency (RF) portion of the electromagnetic spectrum. In the United States, regulatory responsibility for the radio spectrum is divided between the Federal Communications Commission (FCC), which administers spectrum for non-federal use and the National Telecommunications and Information Administration (NTIA), which administers spectrum for federal use.

⁹ Pub. L. No. 111-5, 123 Stat. 115. (2009).

¹⁰ USDA's RUS awarded over \$3.2 billion for 320 projects under the Broadband Initiatives Program, primarily for projects expected to provide broadband service directly to end users in rural areas, including community facilities such as schools, libraries and hospitals.

¹¹ The Recovery Act provided \$4.7 billion to establish the Broadband Technology Opportunities Program through which the National Telecommunications and Information Administration awarded competitive grants to a variety of entities for broadband infrastructure, public computer centers, and to increase broadband access and adoption.

speed Internet to advance community development, health care delivery, education, job creation, and other national purposes.¹² With regard to tribal lands, the Plan recommended that the Commission increase its commitment to government-to-government consultation with tribal leaders and consider increasing tribal representation in telecommunications planning. In July 2010, FCC announced the creation of the Office of Native Affairs and Policy. The office was tasked to promote the deployment and adoption of communication services and technologies throughout tribal lands and native communities, by, among other things, ensuring the recommended consultation with tribal governments and native organizations. Officials from the Office of Native Affairs and Policy said that the office has helped to facilitate, draft, analyze, and advise on policy issues affecting Native communities as part of FCC's decision-making process.

Selected Tribes and Providers Identified Opportunities and Barriers Related to Increasing High-Speed Internet Access

Selected Tribes Identified the Importance of Internet to Their Communities and All Selected Tribes Had Some Internet Service

Tribal officials we interviewed said they place a high priority on institutional and personal Internet access because of the numerous benefits, including the following.

- **Economic Development:** Officials from most tribes said high-speed Internet is essential for economic development such as finding employment or establishing online businesses. FCC also found that community access to Internet services is critical in facilitating job placement, career advancement, and other uses that help to stimulate economic activity. For example, a resident of an Alaska Native Village operates a tour company and stated that the booking, communication, and advertising of the business are completely reliant on a satellite

¹² FCC, *Connecting America: The National Broadband Plan* (Washington, D.C.: 2010).

Internet connection. However, the unreliable Internet service quality made booking customers and working with online tourism companies challenging.

- Education: Officials from many tribes stated that high-speed Internet access at schools supports educational success. For example, access can allow students to conduct online testing or to watch online lectures, according to officials from two tribes we interviewed. In addition, officials from some tribes said that students who had access at school, but not at home were disadvantaged compared to their peers who had access at home.
- Health: About half of the tribes said that high-speed Internet access to support telemedicine was important to the tribe, particularly in rural or remote areas.

Officials from all of the tribes we interviewed also said that Internet service existed on at least some of their lands at varying connection speeds, ranging from less than 1 Mbps to over 25 Mbps. Some of the tribes we interviewed had at least some fiber optic high-speed Internet connections while the others had slower copper lines, only mobile service, or only satellite service. Moreover, while many of the tribal lands where we held interviews had some level of mobile Internet service, only a few tribal lands had 4G mobile high-speed Internet services and a few others had no mobile service. Further, officials from about half of the tribes we interviewed described important limitations to their Internet services, including higher than usual costs, small data allocations, slow download speeds, and unreliable connections. For example, officials from the Quileute tribe said that connection problems caused by heavily congested networks forced them to upload the required reports to federal grant websites after regular business hours.

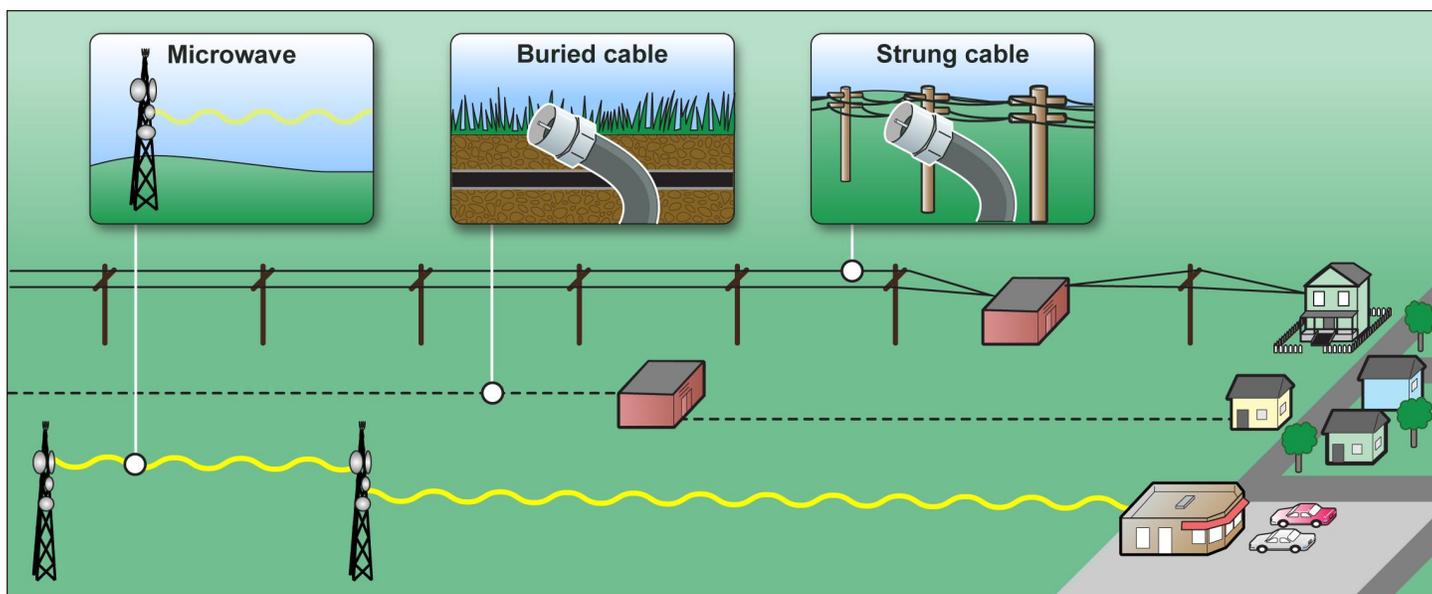
Selected Tribes and Providers Said that Rugged and Remote Terrain are Barriers for Increasing Internet Access on Tribal Lands

The interrelated barriers of rugged terrain and rural location characteristic of many tribal lands, as well as tribal members' limited ability to pay for high-speed Internet service were tribes' and private providers' most commonly cited impediments to improvements in high-speed Internet service. FCC's Office of Native Affairs and Policy reported in 2012 that rural, remote, and rugged terrain increase the cost of installing, maintaining, and upgrading Internet infrastructure.¹³ It also reported that

¹³ FCC Office of Native Affairs and Policy, *2012 Annual Report*, (Washington, D.C.: 2012).

affordability of these services among tribal members is affected by often endemic levels of poverty, as discussed later in this report. Internet providers said that these barriers can deter private investment in infrastructure needed to connect remote towns and villages to a service provider's core network—known as the middle mile. Middle-mile infrastructure may include burying fiber optic or copper cables, stringing cable on existing poles, or erecting towers for wireless microwave links, which relay wireless Internet connections from tower to tower through radio spectrum. Figure 2, below, illustrates some of the options for middle-mile Internet service delivery infrastructure.

Figure 2: Types of Middle-Mile Internet Service Delivery Infrastructure



Source: GAO. | GAO-16-222

Many tribal officials and all six providers we interviewed listed rugged terrain and the rural location of many tribal lands as challenges to deploying this infrastructure to tribal lands. Tribal lands located far from urban areas may not have middle-mile infrastructure necessary for high-speed Internet deployment to their lands. More specifically, interviewees discussed the remoteness or distance from existing high-speed Internet networks in urban and suburban centers; the vastness of reservation lands; low population density; rugged terrain characteristics such as hills, forests, mesas, and rocks; and, in some places, a lack of basic services such as roads, addresses, and commercial power. Figure 3 from the remote village of Beaver, Alaska, which is not connected to a road

network and is only accessible by plane, illustrates some of these characteristics. The building shown is connected only via satellite, because there is no fixed or wireless Internet service in Beaver. Residents of Beaver told us that satellite Internet is a poor substitute for land-based middle-mile infrastructure because it is slower, less reliable, includes restrictive caps on data usage, and suffers from regular blackout periods.

Figure 3: A Building in Beaver, Alaska Serviced with a Satellite Internet Connection



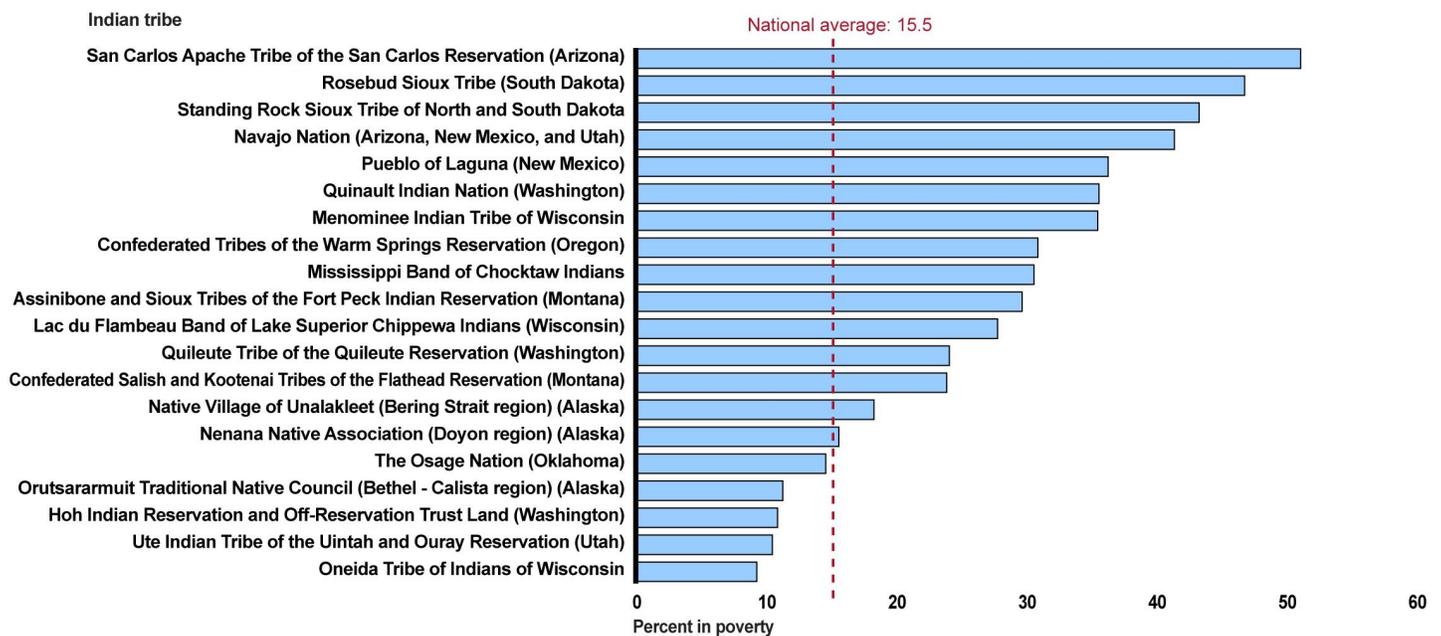
Source: GAO. | GAO-16-222

The terrain and lack of basic services tend to increase the cost of building and maintaining the middle-mile infrastructure, compared to costs in urban settings. For example, the Lac du Flambeau and Menominee tribes in Wisconsin live on reservations with dense, tall forests, and microwave towers must be tall enough—sometimes as high as 250 feet—in order to transmit the high-speed Internet signal above the tree canopy, according to tribal officials. Additionally, Alaska’s permafrost and seasonal thaw makes it difficult to lay fiber optic cables, according to service provider officials. Finally, one provider in the Southwest United States said it has only been able to deploy limited service on the Navajo Nation land because it spans more than 24,000 square miles, and many of the remote areas are not served by commercial power.

Selected Tribes and Providers Said that Poverty Constrains Internet Adoption on Tribal Lands

The limited financial resources available to tribal households were also cited by tribal officials and providers we interviewed as a barrier to high-speed Internet access. Of the 21 tribes we interviewed, many reported poverty and affordability as drivers of low subscribership to existing Internet services or as a barrier to broadening the availability of services. Poverty rates among the tribes we interviewed varied, but many were well above the 2014 national average of 15.5 percent, as is common for tribal lands. Figure 4 below shows the poverty rates for the 21 tribes we interviewed.

Figure 4: 2013 Poverty Rates among Tribes GAO Interviewed



Source: GAO analysis of Census Bureau data. | GAO-16-222

Note: Because no poverty rate data exist for the Bad River Band of Lake Superior Tribe of Chippewa Indians, they were omitted from this chart.

For example, the Menominee reservation and Pueblo of Laguna each have poverty rates of 35-36 percent according to Census' 2013 American Community Survey, which collects demographic, social, economic and housing data. For the Rosebud Sioux, the poverty rate is 47 percent. Officials from the Menominee tribe said tribal households still cannot afford Internet service. For the Pueblo of Laguna, tribal officials reported that residents often choose mobile Internet options because they cannot

afford separate phone and Internet service. Officials from the Confederated Tribes of Salish and Kootenai said that when tribal households can afford Internet, they can afford only the slowest download speeds available.

Some tribes we interviewed said they are served by a single provider, and officials from five of those tribes reported their provider charging what they described as high prices for limited service. In Bethel, Napaskiak, and Oscarville, Alaska, residents reported that while they had Internet access through a regional service provider, this provider's services had low data allocations that subscribers routinely exceeded and paid penalties as a result. Moreover, officials from Bethel said that applicants for tribal housing assistance with outstanding debt of more than five percent of their income from unpaid mobile Internet bills were ineligible for this assistance. Also according to these officials, when an Internet customer had an outstanding bill, the local provider would shut off their phone. The customer had to pay back this outstanding balance before they could get their phone turned back on and qualify for housing assistance. In the housing application round for Bethel that occurred just before our June 2015 visit, 13 of 38 applicants were rejected due to their delinquent Internet bills, according to data provided by the tribe. Tribal officials said that this was typical, and that it can take up to a year to pay off these bills due to the limited income opportunities in the region.

Two of the providers we interviewed discussed non-payment among tribal households as a disincentive to Internet service provision. One provider said that the customers it serves on tribal lands had non-payment rates double that of other customer groups, and that these rates often follow seasonal employment patterns. Officials from another Internet provider said that high poverty had led tribal customers' accounts to fall into delinquency and be subsequently disconnected from service. According to some of the tribes we interviewed, limited finances led many tribal households to opt out of purchasing service or not being able to keep up payments for service they did purchase.

About Half of Tribes Reported That They Lack the Capacity to Apply for Federal funds or Design High-Speed Internet Networks

About half of the tribes we interviewed told us that a lack of tribal members with sufficient bureaucratic and technical expertise is a barrier to increasing high-speed Internet access on tribal lands. Tribal officials said that tribal members do not always have the bureaucratic expertise required to apply for federal funds, which can lead to mistakes or the need to hire consultants. Officials of the Ute tribe, for example, described submitting application paperwork for federal funding several times before being accepted because of multiple federal officials asking for different edits. Some tribes reported spending resources on outside consultants to

handle the application process. For example, the Mississippi Choctaw told us they hired a full-time grant writer to manage their E-rate application when they had difficulty applying for E-rate on their own.¹⁴ The consultant confirmed that there is a steep learning curve to the process and not all tribes would have the money or time to have a member overcome the learning curve while fulfilling other tribal responsibilities. Further, according to officials, Unalakleet's regional school district contracts out the E-rate application process to a consultant for \$22,000 annually. The district receives about \$5 million in E-rate funding annually to subsidize its schools' high-speed Internet connection. Additionally, Lac du Flambeau officials said they spent funds on lawyers, consultants, and engineers who they had hired to assist them in applying for federal funding.

Lack of technical expertise also affects tribes' ability to interact with private-sector Internet providers. For the seven tribes we interviewed that either had a tribally owned provider or were in the process of establishing one, three of them said that the lack of expertise in the tribe was a challenge to establishing a tribally-owned telecommunications provider for high-speed Internet deployment. In addition, Salish and Kootenai officials recounted a meeting with several providers as part of a federal assistance application requirement. The officials said that none of the tribal officials understood the providers' plans and as a result were not able to represent the tribe's best interests. Further, officials from the Pueblo of Laguna highlighted that they will need ongoing investment in employee training to ensure that their knowledge keeps pace with technological developments and infrastructure upgrades.

The National Broadband Plan recognized the challenges of administrative and technical capacity and recommended that FCC and Congress support technical training and capacity development on tribal lands, such as by considering additional funding for tribal leaders to participate in FCC training at no cost. In the early 2000s, FCC held a number of Indian Telecommunications Initiatives Regional Workshops and Roundtables. In fiscal year 2012, the Office of Native Affairs and Policy consulted with about 200 tribal nations, many during six separate one- to three-day telecommunications training and consultation sessions on tribal lands. These included the Native Learning Labs, where attendees could, for

¹⁴ FCC's Universal Service Program for Schools and Libraries, commonly known as the E-rate program, helps schools and libraries to obtain affordable broadband.

example, learn about data the FCC has available on spectrum licensing and USF programs, among other things. Recently, the Office held seven training workshops in fiscal year 2014 and fiscal year 2015, and plans to offer more in fiscal year 2016. The goal of this new series of sessions is to provide tribal officials with information about funding opportunities and policy changes with respect to high-speed Internet, USF programs, and spectrum issues.

Interrelated Federal Programs Promoting High-Speed Internet Access on Tribal Lands Are Not Always Well Coordinated

FCC and USDA High-Speed Internet Programs are Interrelated

FCC and USDA implement mutually supportive interrelated high-speed Internet access programs that offer assistance to tribes and the providers that serve tribal lands. FCC's and USDA's programs have similar goals to increase access to Internet on tribal lands and they both offer funding to either tribal entities or service providers to achieve this goal of increased access. Further, both FCC and USDA programs have eligibility requirements based on the need of an area as well as deployment requirements. Tribes sometimes qualify for benefits from more than one of these programs, either directly or through private-sector Internet providers. Tribal officials we interviewed said that both FCC's and USDA's programs were important for the expansion of high-speed Internet service on their lands.

The FCC has programs that provide subsidies or discounts to improve telecommunications services, including services on tribal lands. These programs have a longstanding goal of making communications services available "so far as possible to all the people of the United States." The Telecommunications Act of 1996 extended the scope of federal universal service to support and make advanced telecommunications services available to eligible public and nonprofit elementary and secondary schools, libraries, and nonprofit rural health care providers at discounted rates. Today, the goals of these programs include increasing access to Internet service for all consumers at reasonable and affordable rates. Three universal service programs subsidize telecommunications carriers

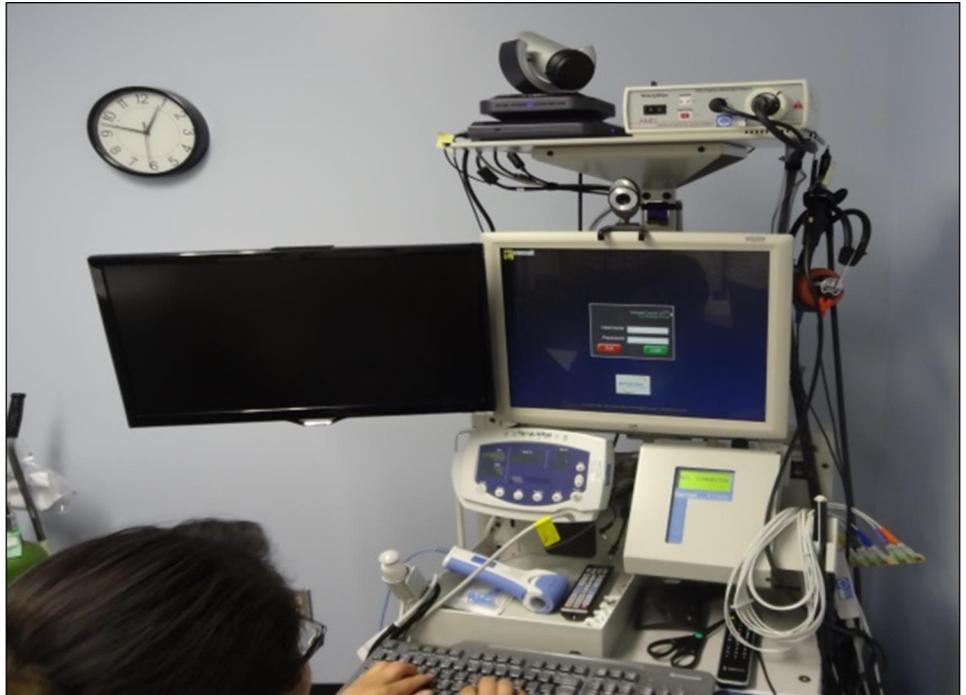
that provide high-speed Internet and other telecommunications services to areas that include tribal lands.¹⁵

- The Connect America Fund (CAF)—formerly the High Cost Program—was established to extend high-speed Internet service to those areas that lack service, while preserving voice service. CAF provides subsidies to Internet providers to supplement their operating costs for providing high-speed Internet in unserved or high-cost areas. In total, the High Cost and Connect America Fund distributed about \$20 billion in subsidies to providers between 2010 and 2014, portions of which went to providers that serve tribal lands.¹⁶
- The USF Schools and Library Support Program, also known as E-rate, provides discounts to eligible schools and libraries on telecommunications services, Internet access, and internal connections. In total, the E-rate program provided about \$13 billion in discounts to schools and libraries between 2010 and 2014, portions of which went to schools and libraries on tribal lands.
- The Healthcare Connect Fund provides assistance to ensure eligible rural health care providers have access to high-speed Internet services and supports the formation of regional health care provider networks. Although the Healthcare Connect Fund does not specifically target tribal institutions, assistance may be provided to a service provider (or group of providers) that serve tribal lands. The Healthcare Connect Fund started in 2014 and provided about \$52 million to healthcare facilities in fiscal year 2014, a portion of which went to tribal lands. For example, tribal officials said that the Healthcare Connect Fund helped fund telemedicine carts that access high-speed Internet connections to send patient data including pictures and X-rays to regional hospitals to reduce costs, (see figure 5).

¹⁵ The Lifeline and Link-Up Program provides subsidies to low-income customers so that telecommunications service is more affordable. In the Lifeline Modernization Order and FNPRM, adopted in June 2015, the FCC sought comment on expanding Lifeline to support broadband.

¹⁶ Due to a lack of specific data, we were unable to determine the portion that went to tribal lands from each of the USF programs.

Figure 5: Picture of High-Speed Internet-Enabled Telemedicine Cart from the Village of Nenana, AK



Source: GAO. | GAO-16-222

In addition to general programs that include tribal beneficiaries, FCC has also implemented efforts designed specifically to address concerns of Tribal and Native Communities. For example, in 2000 FCC began its Tribal Lands Bidding Credit Program to provide incentives to wireless providers to deploy wireless services on tribal lands. FCC is authorized to auction radiofrequency spectrum to be used for wireless services in the United States. Under the Tribal Lands Bidding Credit program, FCC grants bidding credits to a winning bidder in a spectrum auction if the bidder deploys facilities and provides telecommunications services to qualifying tribal lands.¹⁷ In total, the program has awarded credits to 53

¹⁷ The agreement under the program includes constructing and operating a wireless system that offers service to at least 75 percent of the tribal land area covered by the credit within 3 years of the grant of the license. Tribal lands with telephone subscribership below 85 percent are eligible for the program.

licensees that have pledged to deploy facilities and provide telecommunications services on 13 tribal lands.

More recently, in 2012 when FCC made reforms to universal service, it created the Mobility Fund under the Connect America Fund. Phase I of the Mobility Fund, which began in fiscal year 2012, provided \$300 million of one-time support to extend the availability of wireless voice and high-speed Internet networks in areas where they were not available, including tribal lands. It also established a separate, one-time Tribal Mobility fund, which awarded \$50 million in fiscal year 2014. Phase II of the Mobility fund will have a budget of \$500 million, of which \$100 million is designated as support for tribal lands. FCC has not set a date for the awarding of these funds.

According to some tribes and five of the six service providers we interviewed, FCC's USF subsidies have helped expand high-speed Internet throughout tribal lands for tribal institutions, such as schools, libraries, and clinics. Further, building out the Internet service delivery infrastructure for schools and clinics with USF support allows service providers to begin offering household access in remote areas as well, according to two providers we interviewed. For example, one service provider said that Internet service would not exist in the majority of Alaska without USF's E-rate and Healthcare Connect Fund programs. FCC's programs made Internet service possible in the remote villages of Napaskiak and Oscarville, Alaska. These villages were only accessible by boat or plane and did not have roads or running water, but they did have Internet. According to officials, the best connections in both villages were in the USF supported schools and clinics, and officials from the regional school district serving the two villages said students rely on the high-speed Internet networks and the schools hope to use e-books since flying textbooks to rural Alaska is expensive. Figure 6 depicts the microwave tower in Oscarville, Alaska, which completes the middle-mile wireless signal that it conveys to the school, clinic, and households in the village.

Figure 6: Wireless Microwave Internet Tower in Oscarville, Alaska



Source: GAO. | GAO-16-222

RUS programs also provide support to improve rural telecommunications infrastructure—including high-speed Internet—through grants, loans, and loan guarantees. RUS programs seek to extend high-speed Internet access in rural communities, where it is least likely to be commercially available, but where it can improve the quality of life, education, healthcare, and community development. Eligible participants in RUS programs can include federally recognized tribes. Assistance from RUS can be used to build out new or improve existing telecommunication infrastructure in rural areas, which include many of the tribal lands, through two programs:

- The Distance Learning and Telemedicine program provides grants to rural communities to acquire technologies that use the Internet to link educational and medical professionals with people living in rural areas. In total, the Distance Learning and Telemedicine program provided about \$128 million in grants and loans between 2010 and 2014, almost \$3 million of which went to tribal lands.
- The Community Connect Program provides grants to rural communities to provide high-speed Internet service to unserved areas. In total, the Community Connect Program provided about \$53

million in grants between 2010 and 2014, almost \$3 million of which went to tribal lands.

Officials from some tribes, three of which operate tribally owned service providers, said that USDA RUS grant and loan programs or RUS stimulus funding efforts through the Recovery Act were important in the expansion of Internet throughout tribal lands for tribal institutions. In addition, officials from one Internet provider in Alaska said that RUS funding was important for allowing them to build high-speed Internet infrastructure in rural areas, including Native Villages.

Outreach and Training Efforts for Interrelated Programs Are Not Always Well Coordinated

FCC's and USDA's programs that promote high-speed Internet access in tribal lands are interrelated in that they all seek to increase this access in areas that include tribal lands. For example, FCC's Health Care Connect and USDA's Distance Learning and Telemedicine programs both seek to assist clinics connect to the Internet, including those on tribal lands. These programs are not always well coordinated. Our body of work has shown that interagency coordination can help agencies with interrelated programs ensure efficient use of resources and effective programs.¹⁸ Agencies can enhance and sustain their coordinated efforts by engaging in key practices, such as establishing compatible policies and procedures through official agreements.¹⁹ Agencies can also develop means to operate across agency boundaries, including leveraging resources across agencies for joint activities such as training and outreach.²⁰

One area lacking coordination between FCC and USDA is their outreach and technical assistance efforts when planning visits to tribes or conference attendance. Synchronizing these activities could be a resource-saving mechanism. However, both FCC and USDA independently conduct outreach and training efforts for related programs promoting Internet access. For example, FCC was authorized to spend up to \$300,000 on tribal consultation and training in fiscal year 2015. While FCC officials said they invite USDA officials to FCC training workshops and are sometimes invited to USDA training workshops, they

¹⁸ GAO, *Managing for Results: Barriers to Interagency Coordination*, [GAO/GGD-00-106](#), (Washington, D.C.: March 29, 2000).

¹⁹ GAO, *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms*, [GAO-12-1022](#), (Washington, D.C.: September 27, 2012).

²⁰ GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, [GAO-15-49SP](#), (Washington, D.C.: April 14, 2015).

said that they do not coordinate to develop joint outreach or training events. This could result in an inefficient use of limited federal resources and missed opportunities for resource leveraging between the two agencies and cost-savings to the tribes attending training events. For example, while USDA held a training event in Washington State in fiscal year 2015, FCC hosted a training event in Oregon the same year. The two agencies could have planned a joint training event in the Pacific Northwest Region and each contributed towards the costs of the event while reducing the cost burdens for tribes, who would not have had to travel twice or choose between the two training events given limited budgets. Officials from one tribe said that multiple federal programs offering similar grants were confusing and that a federal one-stop-shop for outreach and training would help them better target the right programs for their situation. Officials from a different tribe said that the tribe benefits from FCC programs but not USDA programs, in part, because tribal officials did not have a strong understanding of the USDA programs that might benefit their community's Internet access. Better coordination on conferences, as feasible, could help FCC and USDA reach a broader audience and increase the value of their outreach to tribes.

Federal Government is Gathering Data, but FCC Lacks Performance Goals and Measures for the Internet on Tribal Lands

The Federal Government is Gathering Data on Internet Availability and Adoption in Households on Tribal Lands

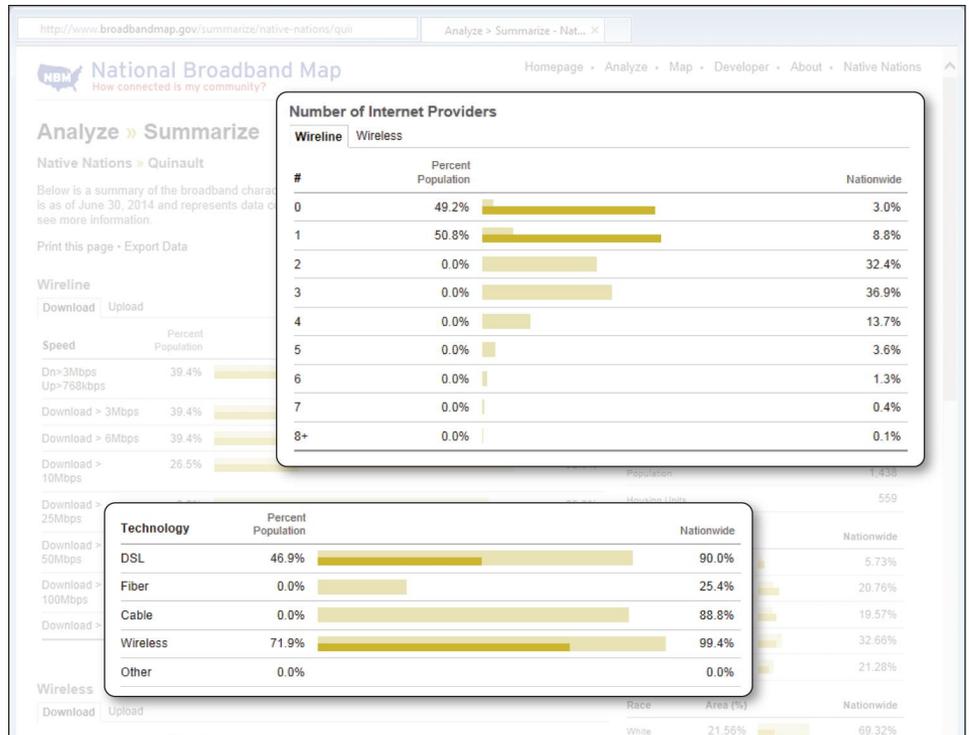
In 2006, we found that the rate of Internet access on tribal lands was unknown because no federal survey had been designed to capture this information. We recommended that additional data be identified to help assess progress towards providing access to telecommunications, including high-speed Internet, for Native Americans living on tribal lands.²¹ Since then, the federal government has started collecting data on Internet availability and access on tribal lands.

²¹ [GAO-06-189](#).

Data on Internet Availability in Households on Tribal Lands

The National Telecommunications and Information Administration (NTIA) and FCC have collected data on high-speed and broadband Internet availability nationwide, including on tribal lands. Specifically, in 2011, NTIA, in cooperation with the FCC and the states began publishing the National Broadband Map, an interactive website that allows users to view information on high-speed Internet availability across the United States, including tribal lands. The website provides several types of maps including the availability of high-speed Internet based on the type of technology (DSL, copper, fiber, or wireless); maximum advertised upload and download speeds; the number of service providers; and provider service areas. In addition, the website allows users to analyze data by specific speeds, availability, or geographic location, as well as other characteristics and supporting data. The data to support the National Broadband Map is collected from service providers, including those offering service to federally recognized Indian tribes, including Alaska Native Villages. From 2010 through June 2014, the service providers submitted data to the states, which then submitted the data to NTIA. NTIA then passed the data to the FCC to be processed and incorporated. Currently, service providers submit the broadband deployment data directly to FCC. The website provides data on Internet availability on approximately 318 federal Indian reservations and associated trust lands, including upload and download speeds for both wireline and wireless service; technology for Internet delivery; and the number of Internet service providers. Figure 7 below shows selected National Broadband Map website information for the Quinault Indian Nation in Washington State.

Figure 7: Example of National Broadband Map Website Information About Tribal Lands



Broadbandmap.gov was initially created by the National Telecommunications and Information Administration (NTIA) and the Federal Communications Commission (FCC), and is currently maintained by FCC. It displays searchable broadband-related maps, statistics, and demographic information for areas from the national to local level. The above examples show some of the information available for the Quinault Indian Nation.

Source: broadbandmap.gov. | GAO-16-222

We did not examine the reliability of the National Broadband Map data, but we asked federal officials, service providers, and tribes about its accuracy. While the National Broadband Map provides information about high-speed Internet availability, according to NTIA officials, the map is based on Census blocks.²² If a service provider reported any availability of

²² Census blocks are the basis for all geographic boundaries for which the Census Bureau tabulates data. Census blocks are statistical areas bounded by visible features such as roads, streams, and railroad tracks, and by nonvisible boundaries such as property lines, city, township, school district, county limits, and short line-of-sight extensions of roads.

high-speed Internet in a Census block, the entire block was counted as served. This could create misrepresentations of service in rural areas, which generally constitute large Census blocks. Because much of tribal land is rural, the reported broadband service is shown to be greater than actual service available on tribal lands, according to NTIA officials. Further some tribal officials said that some areas were inaccurate. For example, the map showed the Lac du Flambeau reservation as covered, because two providers reported that they provide Internet service on the reservation. According to tribal officials, the National Broadband Map exaggerated the level of service on their reservation making them unable to compete for some USF and RUS programs. Tribal officials said that they canvassed the area and documented coverage problems in an unsuccessful effort to correct the map. However, five of the six providers we interviewed said that the reliability of the National Broadband Map has improved over time. One provider indicated that in rural areas, it is more difficult to get accurate data because in some cases addresses are not used, making it difficult to link service to a census block. However, in the future, this provider indicated that they planned to utilize GPS information to provide more accurate data.

Data on Internet Adoption by Households on Tribal Lands

In 2008, Congress passed the Broadband Data Improvement Act,²³ which required the Bureau of the Census to collect information from residential households, including those on tribal lands, on Internet adoption, as to whether a computer is owned or used at the residence, if the household subscribes to Internet service, and if so, whether that service is dial-up or a high-speed connection.

Census began collecting the required data on Internet adoption beginning with the 2013 American Community Survey (ACS). The survey collects information on demographic, social, economic and housing characteristics. The ACS is distributed to approximately 295,000 addresses across the country each month (over 3.5 million per year). According to Census officials, five years of ACS data must be collected to provide data for areas with smaller populations; the first data release with five years' worth of computer and internet use data will be the 2013-2017 5-year ACS, which will be released in late 2018. Census officials said that this data will provide an estimate for Internet adoption nationwide, including the first estimates for hard to reach populations such as Native Americans.

²³ Pub. L. No. 110-385, 122 Stat. 4096 (2008).

FCC Has Not Established Performance Goals and Measures for Internet Availability to or Adoption in Households on Tribal Lands

FCC has made an important distinction between Internet availability and Internet adoption. Availability relates to the presence of Internet Service in an area, and adoption relates to people in the area subscribing to the Internet service. FCC's strategic plan for fiscal years 2015-2018 includes a strategic goal related to Internet availability and ensuring that "all Americans can take advantage of the service...without artificial impediments." This goal has a strategic objective to "maximize the availability of broadband Internet to all—including low income Americans, those in rural areas and tribal lands, and individuals with disabilities." As we reported in June 2015, this represented a change from the previous strategic plan, which included a strategic objective to "maximize" broadband adoption with a related performance goal to "support and facilitate" broadband adoption. Noting that the change in the strategic plan from adoption to availability made it unclear as to which was the priority, we recommended that FCC revise its strategic plan to more clearly state if addressing adoption is a major function of the Commission and, if so, specify what outcomes they intend to achieve.²⁴ In response, FCC commented that broadband adoption remains a significant focus. However, as of December 2015, FCC has not identified the performance goals and measures it intends to achieve for broadband availability or adoption.

Agency performance measurement is the ongoing monitoring and reporting of program accomplishments, particularly towards pre-established goals. Performance measurement allows organizations to track progress in achieving their goals and provides information to identify gaps in program performance and plan any needed improvements. The GPRA Modernization Act of 2010 requires annual performance plans to include performance measures to show the progress the agency is making in achieving its goals. Further, we have identified best practices in articulating goals that include (among others):

- Showing baseline and trend data for past performance and

²⁴ GAO, *Broadband: Intended Outcomes and Effectiveness of Efforts to Address Adoption Barriers Are Unclear*, [GAO-15-473](#), (Washington, D.C.: June 2, 2015).

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- Identifying projected target levels for performance for multi-year goals.²⁵

The National Broadband Map is the most detailed source of Internet availability on tribal lands and the reliability of the data is improving. Providers are updating information and incorporating GPS information to correct inaccuracies, and FCC has a formal process for the public to report complaints. Map data are widely used by FCC currently to describe the availability of broadband nationwide. For example, FCC uses data gathered for the National Broadband Map in its annual Broadband Progress report provided to Congress as required by the Telecommunications Act of 1996.²⁶ Data supporting the National Broadband Map could be used, for example, to establish a baseline of high-speed Internet availability nationwide and on tribal lands. Making high-speed Internet, including broadband Internet, available to all Americans is FCC's stated goal, but FCC has not set goals to demonstrate or measure progress toward achieving it. While the National Broadband Map does have some weaknesses, it provides the best current tool for setting goals and measuring progress toward increasing the availability of high-speed Internet on tribal lands.

Data Collected Does Not Allow FCC to Measure the Outcomes of its E-rate Program for Tribal Institutions

Although Census is gathering baseline information on household internet adoption, and the National Broadband Map provides data on high-speed Internet availability across the country, FCC lacks information to measure the outcomes of its E-rate program at tribal schools and libraries. FCC's E-rate program provides assistance to schools, school districts, and libraries to obtain telecommunications technology, including high-speed Internet. E-rate does not specifically target tribal schools and libraries, although some are eligible and receive benefits. Since 2010, E-rate has committed more than \$13 billion in service provider customer fees to schools and libraries, and according to data provided by FCC, and at least \$1 billion of that amount supports tribal institutions.

²⁵ GAO, Agency Performance Plans: Examples of Practices that Can Improve Usefulness to Decisionmakers, [GAO/GGD/AIMD-99-69](#), (Washington, D.C.: Feb. 1999). While the Government Performance and Results Act is applicable to the department or agency level, performance goals and measures are important management tools applicable to all levels of an agency, including the program, project, or activity level, consistent with leading practices and internal controls related to performance monitoring.

²⁶ Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996).

FCC's strategic plan sets forth an objective for the E-rate program to ensure that all schools and libraries have affordable access to modern broadband technologies. Communicating what an agency intends to achieve and its programs for doing so are fundamental aims of performance management. Under the GPRM Modernization Act of 2010, an agency is expected to communicate the outcomes of its efforts. Specifically the act requires the agency to have outcome oriented goals for major functions and operations and an annual performance plan consistent with that strategic plan with measurable, quantifiable performance goals. Similarly, Federal Internal Control Standards state that operational and financial data are needed to determine whether or not an agency is meeting its strategic and annual performance goals.²⁷ However, FCC has not set any quantifiable goals and performance measures for its E-rate efforts to extend high-speed Internet in schools and libraries nationwide, or more specific performance measures for the same institutions on tribal lands.

FCC has noted the additional difficulties that tribal entities have in securing high-speed Internet on their lands, and directed efforts to address these difficulties in the *E-rate Modernization Orders* in 2014. According to federal internal control standards, management should ensure there are adequate means of obtaining information from external stakeholders that may have a significant impact on the agency meeting its goals. FCC collects information on E-rate recipients nationwide through questions on its application for E-rate assistance, including the type of organization requesting funding and the types of institutions served, such as public, private, tribal, or Head Start, among others. Several different types of institutions on tribal lands can qualify for E-rate funding, including schools operated by the tribe or Bureau of Indian Education, private schools operating on a reservation, as well as public school districts that serve the reservation.²⁸ FCC's E-rate application provides for applicants to self-identify whether recipients of service on the application are tribal, but in this instance, provides no definition of "tribal." We found that not all schools and libraries on tribal lands identify themselves as such during the application process. FCC provided us with information on E-rate

²⁷ GAO, *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: Nov. 1999).

²⁸ The Indian Self-Determination and Education Assistance Act of 1975 (ISDEA), Pub. L. No. 93-638 (1975), as amended, directs the U.S. Department of the Interior, at the request of a tribe, to contract with Indian tribes or tribal organizations to carry out the services and programs the federal government provides to Indians.

recipients between 2010 and 2014 that self-identified as tribal, and the amounts committed to those recipients. These data may understate the amount of funds supporting schools on tribal lands. Specifically, we identified more than 60 additional school districts, private schools, and public libraries on the lands of the 21 tribes we studied that received E-rate assistance but were not included in FCC's information on tribal recipients. FCC officials stated that they do not provide a definition because the increased formality might give applicants the incorrect impression that being a "tribal" institution has an effect on funding decisions. However, because FCC does not provide a definition for tribal in its E-rate application, it is unclear what level of tribal involvement or participation in an institution would cause it to be considered "tribal" on an application. For example, applicants may be unsure if a public school district, a private school, or public library that serves the general public on a reservation should indicate it is a tribal recipient on an application even if most students or patrons are tribal members. Further, according to FCC officials, it would be appropriate for such institutions to identify as tribal. Consequently, FCC does not have accurate information on the number of federally recognized tribes or Alaska Native Villages receiving E-rate support, or the amount being provided to them. Without more precise information and direction from FCC, the extent to which E-rate assistance is provided to tribal institutions cannot be reliably determined, nor can FCC rely on the information to develop quantifiable goals and performance measures for improving high-speed Internet access in tribal schools or libraries. It is important to understand how these programs affect tribal institutions because FCC has made improving high-speed Internet access in tribal institutions a priority following the National Broadband Plan, with the establishment of the Office of Native Affairs and Policy in 2010, and its current Strategic Plan.

Conclusions

Access to Internet on tribal lands varies but challenges to access and adoption remain. The high costs of infrastructure buildout on tribal lands, which tend to be remote and rugged terrain, work in tandem with tribal member poverty to create a barrier to high-speed Internet expansion on tribal lands. In addition, about half of the tribes we interviewed told us that the lack of tribal members with sufficient bureaucratic and technical expertise is a barrier to increasing high-speed access on tribal lands. FCC's USF subsidy program and USDA's RUS grant and loan programs seek to increase high-speed Internet access in underserved areas, including tribal lands, by assisting in building infrastructure and purchasing equipment as well as by paying for the ongoing operation of this infrastructure and equipment. While these programs have been important to improving high-speed Internet access on tribal lands, their efforts to further increase high-speed Internet on tribal lands could be

limited by a lack of interagency coordination on training and outreach. Officials from one tribe said that multiple federal programs offering similar grants were confusing and officials from another tribe said that they accessed FCC programs but lacked a strong understanding of the USDA programs designed to increase Internet access. Through better coordination where feasible on joint training efforts to build tribal administrative and technical capacity, FCC and USDA could better ensure that their programs are efficient and remain mutually supportive and accessible to tribal governments.

Despite the importance of FCC and USDA programs for expanding high-speed Internet on tribal lands, FCC has not established performance goals and measures related to improving Internet availability. However, data on broadband availability is readily available through the National Broadband Map to measure progress on efforts to improve broadband availability. Further, FCC's subsidy programs also seek to increase high-speed Internet access on tribal lands, but the E-rate program lacks reliable data specific to institutions on tribal lands as well as goals and performance measures to track the outcomes of efforts on tribal lands. Not defining "tribal" in the E-rate application makes it difficult to measure the program's impact on tribal lands as not all E-rate recipients serving these areas self-identify as tribal. Gathering such data is important for FCC because The National Broadband Plan has placed a special emphasis on improving access on tribal lands, and internal control standards call for management to be provided with data to determine whether or not it is meeting goals. Without such information, it will be difficult for FCC to determine the extent to which FCC is achieving its goals.

Recommendations for Executive Action

To help improve and measure the availability and adoption of high-speed Internet on tribal lands, we recommend that the Chairman of the Federal Communications Commission take the following four actions:

- Develop joint outreach and training efforts with USDA whenever feasible to help improve Internet availability and adoption on tribal lands;
- Develop performance goals and measures using, for example, data supporting the National Broadband Map, to track progress on achieving its strategic objective of making broadband Internet available to households on tribal lands;
- Improve the reliability of FCC data related institutions that receive E-Rate funding by defining "tribal" on the program application; and

-
- Develop performance goals and measures to track progress on achieving its strategic objective of ensuring that all tribal schools and libraries have affordable access to modern broadband technologies.

Agency Comments

We provided copies of the draft report to the Federal Communications Commission, the U.S. Department of Agriculture, The U.S. Department of the Interior, and the U.S. Department of Commerce for comment prior to finalizing the report. We received technical comments that we incorporated as appropriate. We received written comments from FCC, which are reproduced in appendix III. FCC concurred with our recommendations and noted that it has efforts under way to address them. Regarding our recommendation for greater coordination on training and outreach, FCC summarized the areas in which it coordinates with USDA and said that it will continue to work with USDA to ensure more strategic and routine coordination. Regarding our recommendation to develop performance goals and measures for making broadband Internet available to households on tribal lands, FCC summarized its efforts to track broadband deployment on tribal lands. Regarding our recommendation to improve data reliability by defining “tribal” on the E-rate funding application, FCC said that it plans to include guidance for E-rate applicants to self-report as tribal if they serve tribal populations beginning in fiscal year 2017. Regarding our recommendation to develop performance goals and measures to track tribal schools and libraries access to broadband, FCC said that its goal is to provide all schools and libraries with broadband Internet, including tribal schools and libraries and that its efforts will substantially improve the accessibility of modern broadband technologies for tribal schools and libraries.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 5 days from the report date. At that time, we will send copies to FCC, USDA, and other interested parties. In addition, the report is available at no charge on GAO’s website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-6670 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 major contributions to this report are listed in appendix III.

A handwritten signature in black ink, appearing to read 'Mark Goldstein', with a long, sweeping horizontal stroke extending to the right.

Mark Goldstein
Director, Physical Infrastructure Issues

List of Requesters

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

The Honorable Anna G. Eshoo
Ranking Member
Subcommittee on Communications and Technology
Committee on Energy and Commerce
House of Representatives

The Honorable Ben Ray Luján
House of Representatives

The Honorable Don Young
House of Representatives

The Honorable Tom Cole
House of Representatives

The Honorable Derek Kilmer
House of Representatives

The Honorable Suzan DelBene
House of Representatives

The Honorable Jared Huffman
House of Representatives

Appendix I: Objectives, Scope, and Methodology

You asked us to review the availability of broadband access on tribal lands. This report examines (1) perspectives of selected tribes and providers on the importance of Internet access for tribes and any barriers to increasing access to Internet on tribal lands; (2) the level of interrelation and coordination between federal programs at FCC and USDA that promote high-speed Internet access on tribal lands; and (3) existing data and FCC performance goals and measures related to access to Internet service on tribal lands and for tribal institutions.

To determine perspectives of selected tribes and providers on the importance of high-speed Internet and any barriers to increasing access to high-speed Internet on tribal lands, we reviewed relevant literature and interviewed officials from 18 tribal governments in the continental United States and 3 Alaska Native regions. For the three Alaska Native regions we interviewed, we visited villages within the region and spoke with officials from the Regional Corporation, regional nonprofit, Village Corporation, tribal government, and city government. Five of the 21 total tribes we interviewed operate their own Internet providers and two were considering forming a tribally-owned provider. We selected tribes to interview using FCC and USDA data from fiscal years 2010 through 2014 and Bureau of the Census (Census) 2013 demographic data such as population and poverty rates. We selected tribes to include a range of population, poverty rates and locations. We used the same semi-structured interview questions for all tribes. While we used the same questions, tribal officials may not have answered them in the same way. Additionally, we interviewed officials from six service providers operating on tribal lands. We selected service providers to interview using FCC High Cost Support data for fiscal years 2010 through 2014 and initial tribal interviews to identify providers that serve tribal lands and receive federal subsidies to do so. Furthermore, we identified and interviewed industry stakeholders such as research groups and telecommunications associations on their views regarding the barrier to increasing access to broadband on tribal lands. These stakeholders were selected based on their exposure to issues on tribal lands such as representing tribally owned service providers. These interviews are not generalizable to all tribes, all service providers or all industry stakeholders.

To analyze the information we collected on barriers and potential solutions in our interviews, we identified themes and trends based on a literature review of recent FCC and research organization publications and preliminary interviews and developed a set of codes. After agreeing on the coding strategy and rules for the appropriate use of each code, one reviewer coded each carrier, tribal, and stakeholder interview using the agreed codes. Another team member then reviewed the coding for

reasonable adherence to the strategy and rules. We then tallied coded responses and analyzed the themes identified through our interviews to determine the most prevalent challenges and solutions identified by our interviewees. For reporting purposes, we developed a series of indefinite quantifiers to describe the tribal responses from the 21 total tribal entities we interviewed that agreed with statements made in the report. Less than 5 of the 21 is “a few”, 5 to 9 is “some”, 10 to 12 is “about half”, 13 to 16 is “many”, and 17 or more is “most”.

To determine the level of interrelation and coordination between federal programs at FCC and USDA that promote high-speed Internet access on tribal lands, we reviewed FCC and USDA program guidance materials and program funding for fiscal years 2010 through 2014, interviewed FCC and USDA officials, and interviewed tribal officials from the selected 21 tribal governments or Alaska Native regions and 6 service providers about the federal government programs in which they participated. We evaluated USF and RUS program coordination based on criteria developed in previous GAO work.¹ First, we identified programs to examine. We selected FCC’s Universal Service Fund (USF) and USDA’s Rural Utilities Service (RUS) due to the high number of programs and the substantial appropriations amounts involved. Second, we gathered background information on these programs and identified relationships among the programs. Third, we identified areas of coordination and possible gaps in coordination. Finally, we communicated these options to FCC and USDA officials to determine the feasibility of our proposed recommendations.

To determine what data and FCC performance goals and measures exist related to access to high-speed Internet service on tribal lands and for tribal institutions, we analyzed fiscal year 2010 through fiscal year 2014 USF data from FCC for tribal grantees or use on tribal lands; reviewed USF program applications and guidance materials; reviewed Bureau of Census five year data on telecommunication access from the American Community Survey; and interviewed FCC and Census officials. We determined that FCC and Census data were sufficiently reliable for our purposes by interviewing FCC and Census officials on their data collection and validation efforts. Finally, we reviewed performance goals

¹ GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, [GAO-15-49SP](#), (Washington, D.C.: April 14, 2015); GAO, *Managing for Results: Barriers to Interagency Coordination*, [GAO/GGD-00-106](#), (Washington, D.C.: March 29, 2000); and GAO, *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms*, [GAO-12-1022](#), (Washington, D.C.: September 27, 2012).

and measures for USF programs according to criteria established in the Government Performance and Results Act of 1993, as amended² and in federal standards for internal control.³

We conducted this performance audit from February 2015 to January 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

² Pub. L. No. 103-62, 107 Stat. 285 (Aug. 3, 1993) as amended by GPRA Modernization Act of 2010, Pub. L. No. 111-352 (2010).

³ GAO, *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: Nov. 1999).

Appendix II: List of Tribes, Alaska Native Entities, Internet Service Providers, and Other Groups GAO Interviewed

Tribe or Alaska Native Village	State
Alaska Native region of Bering Strait: Native Village of Unalakleet	AK
Alaska Native region of Calista: Orutsarmiut Traditional Native Council, Native Village of Napaskiak, and Oscarville Traditional Village	AK
Alaska Native region of Doyon: Nenana Native Association and Beaver Village	AK
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation	MT
Bad River Band of Lake Superior Tribe of Chippewa Indians	WI
Confederated Salish and Kootenai Tribes of the Flathead Reservation	MT
Confederated Tribes of the Warm Springs Reservation	OR
Hoh Indian Tribe	WA
Lac du Flambeau Band of Lake Superior Chippewa Indians	WI
Menominee Indian Tribe of Wisconsin	WI
Mississippi Band of Choctaw Indians	MS
Navajo Nation	AZ, NM, and UT
Oneida Tribe of Indians of Wisconsin	WI
The Osage Nation	OK
Pueblo of Laguna	NM
Quileute Tribe of the Quileute Reservation	WA
Quinault Indian Nation	WA
Rosebud Sioux Tribe	SD
San Carlos Apache Tribe of the San Carlos Reservation	AZ
Standing Rock Sioux Tribe of North and South Dakota	ND and SD
Ute Indian Tribe of the Uintah and Ouray Reservation	UT

Internet Service Providers
ACS Communications
AT&T
Century Link
Frontier
GCI Inc.
Verizon

Other Groups
National Tribal Telecommunications Association
National Congress of American Indians
NTCA – The Rural Broadband Association
Arizona State University, American Indian Policy Institute and School of Public Affairs
Office of Rural Business and Intergovernmental Affairs, Office of Governor, Alaska

Source: GAO. | GAO-16-222

Appendix III: Comments from the Federal Communications Commission



Federal Communications Commission
Washington, D.C. 20554

January 20, 2016

Mr. Mark Goldstein
Director, Physical Infrastructure Issues
Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Goldstein:

Thank you for the opportunity to review and comment on the U.S. General Accountability Office (GAO) draft report entitled *Additional Coordination and Performance Measurement Needed for High-speed Internet Access Programs on Tribal Lands*. The Commission is committed to facilitating the expansion of 21st century communications to Tribal Nations across the United States.

In the draft report, GAO makes four recommendations for Commission action. We address each of GAO's recommendations below.

First, GAO recommends that the Commission "[d]evelop joint outreach and training efforts with USDA (U.S. Department of Agriculture) whenever feasible to help improve Internet availability and adoption on tribal lands."¹ We agree that coordination between the Commission and USDA is desirable in these areas. We note that the Commission has partnered with USDA on multiple occasions since 2012 to cooperatively develop and implement outreach and training for Tribal Nations. For example, from 2012 through 2015, staff from USDA headquarters in Washington, DC and USDA regional offices across the country have presented at FCC Tribal consultation and training workshops across Indian Country. USDA has provided information to workshop attendees on programs including Community Connect Grants, Distance Learning and Telemedicine Grants, and the Computers for Learning program. In September 2015, for instance, a representative from USDA presented on the Computers for Learning Program at the FCC Tribal Broadband, Telecom, and Broadcast Training and Consultation Workshop held in Rapid City, South Dakota. In addition, in November 2015, the Acting Chief of the Commission's Office of Native Affairs and Policy, Consumer and Governmental Affairs Bureau, presented on the E-rate program at USDA's Broadband Summit in the Choctaw Nation Promise Zone. The Commission will continue to work with USDA to ensure that all future coordination is even more strategic and routine.

Second, GAO recommends that the Commission develop "performance goals and measures using, for example, data supporting the National Broadband Map, to track progress on achieving its strategic objective of making broadband Internet available to households on tribal lands."² We agree on the importance of such performance goals and measures. In fact, the Commission has performance goals and tools in place that can be used to track progress in meeting this strategic objective, and the available data shows that the Commission is already making progress.

With respect to performance goals, the FCC's strategic objective of maximizing broadband availability on Tribal lands is fulfilled in part through its universal service programs established pursuant

¹ Draft Report at 28.

² *Id.* at 20.

Appendix III: Comments from the Federal Communications Commission

to its obligations under section 254 of the Communications Act,³ and section 706 of the Telecommunications Act of 1996.⁴ In order to meet its Section 254 obligations, in its *2011 USF/ICC Transformation Order* the Commission specifically expressed that its section 254 obligations ensured universal availability of broadband networks to all Americans, including Americans living on Tribal lands.⁵ To that end, the Commission has established a performance goal of bringing broadband at speeds of at least 10/1 Mbps to high-cost areas, including Tribal lands.⁶ The Commission has also adopted an outcome measure for this goal: the number of homes, businesses and community anchor institutions that newly gain access to broadband service.⁷

Regarding performance measures, the Commission has collected and published data regarding progress towards its strategic objective of maximizing broadband availability in Tribal lands and overall. Twice a year, through its Form 477, the FCC collects broadband availability data for each census block, including those on Tribal lands. The Commission uses that data to publish statistics on the availability of broadband service on Tribal lands in its annual broadband progress report, and to monitor progress towards its universal service goals of ensuring universal availability of broadband networks to all Americans and promoting broadband adoption. Indeed, in its most recent broadband progress report issued pursuant to section 706, the Commission quantified the increasing numbers of subscribers on Tribal lands that have access to broadband capable networks and that are adopting broadband, indicating progress towards our strategic objective.⁸ The Commission is scheduled to consider an updated broadband progress report at its upcoming open meeting on January 28, 2016, and in preparation for that meeting Chairman Wheeler has released the latest statistics concerning broadband availability on Tribal lands.⁹

Third, GAO recommends that the Commission “[i]mprove the reliability of its data related [to] institutions that receive E-rate funding by defining “tribal” on the program application.”¹⁰ We agree with this recommendation and will work with the Universal Service Administrative Company (“USAC”) to provide guidance to applicants about the term “Tribal” on program applications. While Commission rules

³ Section 254 of the Communications Act directs that consumers in all regions of the Nation have access to services “that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.”

⁴ Section 706(a) provides that the Commission shall “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans...” Section 706(b) further provides that the Commission “regularly determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”

⁵ See *Connect America Fund et al.*, WC Docket Nos. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17681, para. 51 (2011) (*USF/ICC Transformation Order*), *aff’d sub nom.*, *In re: FCC 11-161*, 753 F.3d 1015 (10th Cir. 2014).

⁶ See *Connect America Fund et al.*, Report and Order, 29 FCC Rcd 15644, 15649, para. 15 (2014).

⁷ Further information about the Commission’s performance goals and outcome measures for the high cost program is available at <https://www.fcc.gov/general/connect-america-fund-progress-portal>.

⁸ See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act at 1417*, Report and Notice of Inquiry, 30 FCC Rcd 1375, 1424, para. 85 (network availability); *id.* at 1432, para. 94 (adoption).

⁹ See Press Release, *Fact Sheet: 2016 Broadband Progress Report Chairman’s Draft*, (rel. Jan 7, 2016) http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0107/DOC-337173A1.pdf.

¹⁰ Draft Report at 28.

do not define "Tribal" for purposes of the E-rate application, we agree on the importance of collecting information on schools and libraries that are operated by Tribes or that serve Tribal members. Beginning in Funding Year 2017, we intend to amend the directions to the E-rate application to offer guidance to applicants in their self-reporting of Tribal affiliation.

Fourth, GAO recommends that the Commission "[d]evelop performance goals and measures to track progress on achieving its strategic objective of ensuring that all tribal schools and libraries have affordable access to modern broadband technologies."¹¹ We agree with the importance of goals and measures to track progress on achieving strategic goals, which is why the Commission adopted goals and measures in the *First E-Rate Modernization Order*. In that Order, the Commission adopted three goals for the E-rate program: (1) ensuring affordable access to high-speed broadband sufficient to support digital learning in schools and robust connectivity for all libraries; (2) maximizing the cost-effectiveness of spending for E-rate supported purchases; and (3) making the E-rate application process and other E-rate processes fast, simple and efficient.¹² For each of these goals, the Commission adopted associated performance measures and targets to determine whether we are successfully achieving these goals, which encompass all schools, including Tribal schools and libraries.¹³ Further, as part of the development of a robust performance management system, the Commission directed USAC to create a comprehensive and efficient data reporting structure, to develop information technology tools that facilitate analysis of all program data, and to increase public availability of such data.¹⁴ The Commission intended this action to increase transparency and enable beneficiaries and other stakeholders both to assess progress by schools and libraries in obtaining access to high-speed broadband connectivity.¹⁵

We believe that the goals and performance measures for the E-rate program, along with our enhanced Tribal consultation, training and outreach strategy, put in place by the *Second E-Rate Modernization Order*, will substantially improve the accessibility of modern broadband technologies for Tribal schools and libraries.¹⁶

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

Sincerely,



Matthew S. DelNero
Chief, Wireline Competition Bureau



Alison Kutler
Acting Chief, Consumer and Governmental
Affairs Bureau

¹¹ *Id.* 28.

¹² *Modernizing the E-rate Program for Schools and Libraries*, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 8870, 8880, para 22 (2014) (First E-rate Modernization Order).

¹³ *See id.*, at 8880-8894, paras. 22-62.

¹⁴ *Modernizing the E-rate Program for Schools and Libraries* et al., Second Report and Order and Order on Reconsideration, 29 FCC Rcd 15538, 15590, para. 128 (2014) (Second E-rate Modernization Order)

¹⁵ *See id.*

¹⁶ *See id.* at 8967-70, paras. 243-249.

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; Christopher Jones; Sarah Jones; Jeffery Malcolm; Josh Ormond; Cheryl Peterson; Carl Ramirez; Cynthia Saunders; Michelle Weathers; and Sarah Williamson made key contributions to this report.

Appendix V: Accessible Data

Agency Comment Letter

Text of Appendix III:
Comments from the
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Commission

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Federal Communications Commission

Washington, D.C. 20554

January 20, 2016

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441 G Street NW

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Sincerely,

Alison Kutler

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¹⁵ See *id.*

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Acting Chief, Consumer and Governmental Affairs Bureau

Matthew S. DeINero

Chief, Wireline Competition Bureau

Data Tables

Data Table for Figure 4: 2013 Poverty Rates among Tribes GAO Interviewed

Tribe	% in Poverty
San Carlos Apache Tribe of the San Carlos Reservation (Arizona)	51.0%
Rosebud Sioux Tribe (South Dakota)	46.7%
Standing Rock Sioux Tribe of North and South Dakota	43.2%
Navajo Nation (Arizona, New Mexico, and Utah)	41.3%
Pueblo of Laguna (New Mexico)	36.2%
Quinault Reservation (Washington)	35.5%
Menominee Indian Tribe of Wisconsin	35.4%
Confederated Tribes of the Warm Springs Reservation (Oregon)	30.8%
Mississippi Band of Choctaw Indians	30.5%
Assinibone and Sioux Tribes of the Fort Peck Indian Reservation (Montana)	29.6%
Lac du Flambeau Band of Lake Superior Chippewa Indians (Wisconsin)	27.7%
Quileute Tribe of the Quileute Reservation (Washington)	24.0%
Confederated Salish and Kootenai Tribes of the Flathead Reservation (Montana)	23.8%
Native Village of Unalakleet (Bering Strait Corp) (Alaska)	18.2%
Nenana Native Association (Doyon Corp) (Alaska)	15.5%
The Osage Nation (Oklahoma)	14.5%
Orutsararmuit Traditional Native Council (Bethel - Calista Corp) (Alaska)	11.2%
Hoh Indian Reservation and Off-Reservation Trust Land (Washington)	10.8%
Ute Indian Tribe of the Uintah and Ouray Reservation (Utah)	10.4%
Oneida Tribe of Indians of Wisconsin	9.2%

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