



INTERNET FOR ALL

Five-Year Action Plan Oklahoma



U.S. Department of Commerce
National Telecommunications and Information Administration

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Internet For All

1 Executive Summary

Oklahoma has made progress in broadband coverage in recent years, but major coverage gaps remain. People and areas left on the wrong side of the digital divide are experiencing increasing disadvantages due to society's shift to greater reliance on the internet. A surge in federal broadband funding in recent years, channeled through multiple programs, promises to mitigate enormously the digital divide. The Oklahoma Broadband Office (OBO) faces a major challenge in administering and coordinating multiple programs so that they work together to achieve the common goal of universal broadband access and digital inclusion.

Closing coverage gaps starts with mapping, and here the release of new, more granular maps by the FCC through the Broadband Data Collection (BDC) process, launched in fulfillment of a new mandate arising from the Broadband DATA Act of 2020, has been very helpful. Nonetheless, the challenge process created as part of the new mapping methodology has revealed major imperfections in the FCC National Broadband Map. Oklahoma has been pro-active in developing its own broadband mapping portal to display to the public the best available information and invite the public to improve on it. This [mapping portal](#) will become an ideal platform on which to run the upcoming BEAD state challenge process. The Plan below describes the broadband competitive landscape and remaining coverage gaps in Oklahoma, as elucidated by analysis of FCC maps as well as Oklahoma's own mapping efforts.

In order to close the broadband coverage gaps revealed, multiple federal or federal-to-state programs are at various stages of implementation, including the FCC's Rural Digital Opportunity Fund (RDOF) program; the American Rescue Plan Act (ARPA) State and Local Fiscal Recovery Funds (SLFRF) money of which Oklahoma chose to channel part into broadband deployment; the Capital Projects Fund (CPF) program which was also authorized as part of ARPA with a more specific focus on broadband deployment as the principal program objective; and the Broadband Equity, Access and Deployment (BEAD) program, authorized by the Infrastructure Investment and Jobs Act (IIJA), which is the focus of this Plan; the Tribal Broadband Connectivity Program, which was also authorized as part of ARPA to be administered by tribes; as well as the Digital Equity Act, the Affordable Connectivity Program, and others.

The OBO faces a major challenge in coordinating all these programs. To cite a few of the coordination challenges:

- RDOF award areas should be excluded from BEAD eligibility, but some RDOF awards have defaulted or may do so in future. There is a risk that RDOF projects could render some locations BEAD ineligible and then default themselves, leaving coverage gaps unaddressed.
- CPF and SLFRF broadband grant projects should exclude the areas they target from BEAD eligibility. But that is only straightforward if the CPF and SLFRF project footprints are known. A variety of delays have created a situation where CPF and/or SLFRF may be

awarding grants concurrently with BEAD. This could necessitate real time alterations in the definition of BEAD eligible areas that would disrupt the BEAD subgrantee selection process.

- Tribes will be administering TBCP and utilizing, or awarding, funds in 2024. It is neither in the interests of the state nor of the tribes, nor does it seem consistent with the intent and rules of the programs, for BEAD and TBCP either to subsidize competitors to serve the same locations, or to layer funds that will be comingled to finance deployment to finance a single project that serves locations targeted by both programs. The programs should ultimately have distinct, non-overlapping footprints. To avoid collisions, close coordination between the state and the tribes will be necessary, which complicates both decision-making and maintenance of due confidentiality around subgrantee selection deliberations.

In preparing to meet these challenges, the OBO has conducted extensive engagement with the public, including listening tours, roundtable meetings, webinars, and a phone survey. Moreover, the OBO's own governance structure involves high-level executive input as well as regular structural involvement with critical stakeholders. The policymaking process has thus been participatory and well-informed, helping guide and legitimize decisions and enrich the OBO's understanding of Oklahomans' needs and industry's interests, plans, and concerns; but this has not dispelled the challenge of coordinating among federal programs. A recent setback occurred when data licensing issues caused the OBO to postpone its grantmaking process for SLFRF broadband funding, increasing the likelihood that concurrent grantmaking by ARPA, SLFRF, CPF, and BEAD will be necessary.

Oklahoma is unusual among states in the scale of its tribal presence, with 39 federally registered tribes that have jurisdiction over about half of the state's land, including most of its unserved and underserved locations. Broadband deployment on tribal lands requires permission from the tribes in the form of a resolution of consent. Given the large tribal presence in Oklahoma, the OBO was careful to share with the tribes an early draft of this Five-Year Action Plan and solicit their input. Their valuable feedback will inform the design of the Initial Proposal in a variety of ways, but for present purposes, two salient points warrant mention:

1. The OBO was advised that coverage maps in tribal areas often overstate coverage and need to be vetted through a robust challenge process; however, tribes may struggle to participate in using their own resources and financial support would be welcome.
2. The OBO was advised to develop the subgrantee selection process so that it features early involvement of tribes whose jurisdictions are affected and requires ISPs to secure the needed resolutions of consent for deployment in tribal areas before their projects are considered for award through the subgrantee selection process.

Due deference to tribal sovereignty may increase the time needed for BEAD program administration, both to give ISPs time to secure tribal resolutions of consent, and to give the OBO time to review them and confirm their validity.

Over the next few months, the OBO looks forward to developing a robust BEAD program design that targets the goal of universal broadband access while also honoring tribal sovereignty and meeting the need for real-time coordination with SLFRF, CPF, and TBCP programs that are also



in process at the same time. While the abundance and variety of funding is novel and welcome, it still appears to fall short of the need, given that average BEAD funds per still unserved or underserved location looks to be under \$3,000, well short of the subsidy cost per location that has usually proven necessary to secure broadband deployment in rural and digitally disadvantaged areas. The OBO looks forward to the provision by NTIA of access to CostQuest cost estimation data as a basis for projecting just how far the state can expect to advance towards the goal of universal broadband access with available funds, and considering that analysis, to define a well-grounded Extremely High Cost Per Location Threshold for regulating the extent of fiber prioritization, among other operationally critical decisions.

While efficient and widespread infrastructure deployment is the OBO's main goal in implementing the BEAD program, it also looks beyond infrastructure to the larger digital equity agenda of affordability, device access, skills, and meaningful use. The OBO's implementation of the BEAD program will contribute to digital equity not only by increasing, and hopefully rendering universal, basic internet access at modern speeds, but also promoting subscribership, affordability, device access, and digital skills. The design and implementation of the BEAD low-cost option can be helpful here, but it needs to be implemented in a way that doesn't undermine industry's incentive to participate in the BEAD program and raise matching capital to supplement state BEAD dollars that may fall short of what is needed to meet the needs statewide.



2 Overview of the Five-Year Action Plan

2.1 Vision

The Oklahoma Broadband Office (OBO) is committed to fully realizing a once-in-a-generation opportunity to provide reliable, affordable, high-speed internet access throughout Oklahoma. The OBO continues to build momentum toward an overarching structure that combines prudent, unbiased, and independent oversight with an effective, efficient implementation effort. These state planning efforts will accelerate broadband expansion, ultimately leading to universal broadband access for a more digitally equitable society. Closing the digital divide depends both on infrastructure investment and a broader digital equity program to make broadband accessible and affordable for every person in Oklahoma.

Infrastructure to Close the Digital Divide

Unprecedented private investment and federal program subsidies have delivered broadband service to many locations in recent decades, yet gaps and accessibility challenges remain in many of the state's more isolated areas.

Cable internet is available throughout the Oklahoma City and Tulsa areas, as well as in many smaller urban areas, such as Muskogee, Guymon, Lawton, Ardmore, and Duncan. Fiber-to-the-premises internet has less of a footprint in Oklahoma City and Tulsa than compared to smaller urban areas like Norman, Idabel, Okmulgee, and Tahlequah. Copper/DSL service is widely available, including in rural areas, but usually does not claim to meet the speed target of 100/20.

Fixed wireless internet service is widely available and covers most of the state. Almost 80% of broadband serviceable locations in Oklahoma have access to fixed wireless at the speed of 25/3 or faster; however, less than half of that coverage (approximately 38%) is at the speed of 100/20 or faster. Moreover, most of the fixed wireless broadband coverage in the state relies on unlicensed spectrum, which is not characterized as a "reliable" broadband service technology by the NTIA because coverage by unlicensed spectrum is vulnerable to interference from other ISPs or other common wireless devices and services. There are a few pockets of fast (>100/20) fixed wireless service using licensed spectrum, mostly around Oklahoma City, Altus, Durant, Miami, and Enid; but less than 30% of Oklahoma enjoys access to fixed wireless service by licensed spectrum.

Fixed wireless may often present itself as the most cost-effective way of closing the remaining broadband coverage gaps in Oklahoma, especially with the help of new spectrum releases and advancing technology. Further investment will be required if fixed wireless is to close Oklahoma's digital divide. In some ways, this is unfortunate — it is widely recognized that end-to-end fiber is the "future proof" highest standard in internet service delivery, and fixed wireless cannot offer the same network connection speeds and other performance measures. Areas in Oklahoma where fixed wireless is the BEAD solution will enjoy a new gateway to the 21st century and will benefit economically and socially from their improved connectivity. However, they will still foreseeably be on the wrong side of a new digital divide, having inferior access to cutting-edge internet speeds because of where they live. Currently, the 100/20 speed is sufficient to meet ordinary households' daily use, but data demand has risen steadily over time,

and speeds that are adequate today may leave households and regions stuck in the slow lane of inferior connectivity and limited online participation over the next decade. The OBO will seek to mobilize end-to-end fiber investment as much as it can; but ultimately, it seems clear that Oklahoma's BEAD allocation, even combined with ARPA and other available funding sources, will not suffice to achieve universal access to end-to-end fiber. Fixed wireless service, that at least meets minimum BEAD standards, may be the fallback to ensure that all, or as many as possible, unserved, and underserved Oklahomans have access to broadband service.

With all this in mind, broadband coverage gaps in Oklahoma can be thought of as areas lacking internet service (a.) at speeds of 100/20 or even 25/3, or (b.) by means of the NTIA-defined short list of "reliable broadband technologies," namely, end-to-end fiber, cable, DSL, and fixed wireless using licensed or licensed by rule spectrum. By this standard, roughly 10% of Oklahoma locations are unserved and 8% of Oklahoma locations are underserved. The principal goals of the BEAD program in Oklahoma will be to get broadband infrastructure built that closes these gaps and deliver reliable high-speed internet service to all locations in the state.

Along the same lines, figures discussed at a meeting of the Oklahoma Broadband Expansion Council in May 2023 indicate that 22% of the state's population is either unserved or underserved, suggesting as many as 340,000 locations and up to 800,000 Oklahomans lacking adequate service. Additionally, 275,000 households subscribe to the ACP, with roughly 8,000 more being added each month. New data releases will occur in the next few months, and the facts on the ground are changing as new deployments occur; therefore, an exact determination of the number of households served, unserved, and underserved is a complex endeavor that is planned for completion in the Initial Proposal later in 2023. Clearly, far too many Oklahomans lack access to adequate broadband.

Fortunately, many locations in Oklahoma that are currently unserved or underserved are already scheduled to receive service from one of several existing federal programs that have a footprint in Oklahoma. These programs are:

- USDA Rural e-Connectivity Program (ReConnect)
- FCC Connect America Fund II
- FCC Rural Digital Opportunity Fund
- NTIA Broadband Infrastructure Program
- NTIA Tribal Broadband Connectivity NOFO 1
- USDA Community Connect
- USDA Telephone Loan Program

Taken together, these programs have a large footprint in all parts of Oklahoma with commitments to deploy speeds of 100/20 or faster, except the Panhandle and an area between Clinton and Woodward. Despite that, almost every part of the state has at least some locations that are neither currently served by reliable broadband technologies at 100/20 or faster, nor enjoy scheduled service commitments under any existing federal program. These unserved/underserved, *and unfunded*, locations need to be targeted by the BEAD program to realize the promise of internet for all in Oklahoma.

The BEAD guidance recognizes that a promising source of broadband investment in many rural areas is electric companies, particularly member-owned rural electric cooperatives, many of which were founded early in the 20th century as part of a drive to bring electrification to rural America. Many electric co-ops today see echoes of history in the generational challenge of rural broadband and are striving to rise to the challenge today as they did then. Others reasonably feel that they need to focus on the still indispensable task of delivering electricity and not jeopardize that by taking on a new and difficult challenge involving substantial financial risk. Electric co-ops must make their own decisions, but they should be aware that the BEAD program is built to accommodate them if they choose to pursue the broadband challenge. For example, the operational capabilities needed by a potential BEAD subgrantee are described as follows:

Prospective subgrantees must certify that they possess the operational capability to qualify to complete and operate the Project. A prospective subgrantee that has provided a voice, broadband, and/or electric transmission or distribution service for at least the two (2) consecutive years prior to the date of its application submission or that it is a wholly owned subsidiary of such an entity, must submit a certification that attests to these facts and specifies the number of years the prospective subgrantee or its parent company has been operating.

From this, it appears to be the intention of the NTIA that even an electric co-op with no broadband experience can be a subgrantee candidate and, if uncontested or successful in competition, receive BEAD funding and deploy to its members. The OBO hopes electric co-ops will consider this opportunity and decide to enter this new line of business and be part of Oklahoma's statewide broadband solution.

BEAD grant subsidies will be awarded competitively, and a major planning task that Oklahoma will need to complete in the next few months is to design the process by which competition among ISPs for BEAD grant subsidies will play out, including "gating" criteria that will be used to decide which ISPs are considered as valid candidates for grants, and the "scoring" criteria the OBO will use to choose which valid candidates will get funded. The mature BEAD subgrantee selection process will be elucidated in the Initial Proposal and submitted for NTIA approval.

After approval of the Initial Proposal, the BEAD grantmaking process will result in some ISPs being awarded BEAD subgrants in return for commitments to deploy broadband to defined serviceable locations on agreed-upon terms, in fulfillment of their proposed network designs, within a specified time. The ISPs will then lay fiber-optic cable, build communication towers, connect with backhaul, make drops at customer premises, advertise, and do all that is necessary to stand up a functional broadband network that can quickly provide broadband service to residential and business addresses upon receiving an order for service.

Together, the networks to be built by the BEAD program, combined with existing coverage networks and other networks currently under construction, should suffice to achieve complete broadband coverage of the state of Oklahoma by the time the BEAD program has run its course.

Universal broadband access is the goal. This goal masks a certain nuance; namely, that because the program prioritizes reaching the unserved (lacking 25/3) first, and the underserved (lacking 100/20) second, it may achieve "universal broadband access" in different senses depending on how far the BEAD funding proves to go. Specifically:

1. If the BEAD funding suffices to deliver service to all *unserved* locations in Oklahoma, then the BEAD program will achieve “universal broadband access” in the sense that all Oklahoma locations will have access to 25/3 internet service.
2. If the BEAD funding suffices to deliver service to all the *underserved* locations in Oklahoma as well, then the BEAD program will achieve “universal broadband access” in the sense that all Oklahoma locations will have access to 100/20 internet service.

Even (1.) above would constitute “universal broadband access” under the FCC’s current definition, which defines “broadband” as internet service at a speed of 25/3 or faster. But this definition is now widely seen as obsolete and likely to be changed, in which case outcome (1.) would no longer officially constitute the achievement of “universal broadband access.” It would be unfortunate if BEAD funding proves insufficient to deploy coverage to all underserved areas and leaves some Oklahomans with no way to access 100/20 internet service at home via reliable broadband technologies. Skillful program implementation should channel money to ISPs that can cost-effectively deploy and raise private matching capital, to maximize the impact of BEAD funds.

By administering the BEAD program in conjunction with CPF, RDOF, and other federally funded broadband programs, the hope is that the OBO can achieve, in this decade, the ambitious goal of universal 100/20 broadband access in Oklahoma. Unfortunately, it’s not clear that the Oklahoma BEAD funding provided per location is sufficient to achieve this, at least in a satisfying way. The BEAD NOFO mandates that states economize funding by setting an “Extremely High Cost Per Location Threshold” which, if exceeded, triggers a search for alternative, cheaper technologies, stepping down from end-to-end fiber, as the “priority” technology, to the other “reliable” technologies of cable, DSL, and licensed fixed wireless, and failing that, to the non-“reliable” technologies of unlicensed fixed wireless and satellite. There would appear to be scenarios, therefore, in which the BEAD program would in some manner fund unlicensed fixed wireless or satellite services **that are already available** and allow states to claim they have achieved “universal broadband access” based on funding these. Further guidance might be needed to clarify this possibility. Except in this rather reductive sense, it is uncertain whether BEAD funds will suffice to achieve universal broadband access in Oklahoma. The OBO looks forward to working with the NTIA to assess whether its declared goals for the BEAD program in Oklahoma are realistic, and based on this assessment, to envision how BEAD funds can be deployed most impactfully.

The Broader Digital Equity Goal

While universal broadband access is a key component of a digitally equitable society, it is only the beginning. It’s not much use if good internet service is offered in the area but at too high a price to subscribe, or if suitable devices for getting online or the skills to use the internet to meet basic needs are lacking. It’s time for society to become more intentional about getting everyone ready to thrive online, as the internet becomes a key — if not the principal — medium for all kinds of interactions among citizens, their employers, educators, the government, and much of their shopping and entertainment. That includes helping people to afford broadband subscriptions and acquire devices, and inculcating knowledge and good habits of internet use.

This broader digital equity agenda is not yet well-defined, nor do we know much about how government and civil society can foster it. This is a time for experimentation and discovery, and the OBO looks forward to funding valuable pilot projects to promote digital equity, opportunity, participation, and skills through the parallel State Digital Equity Capacity Grant program.

Those plans will be more fully articulated in the State Digital Equity Plan, but they are also relevant here for several reasons.

First, if there are any BEAD funds leftover, after commitments sufficient to achieve universal 100/20 broadband access are secured and after gigabit service is secured for all community anchor institutions, they may be channeled into projects identified as part of the Digital Equity Plan. It is not clear whether there will be any leftover funds, but the possibility of that heightens the relevance of digital equity planning for the BEAD program. Even a small BEAD residual, relative to the total, might increase State Digital Equity Capacity Grant activity by multiples.

Second, the manner in which the BEAD program is administered will affect broadband affordability. This is directly built into the BEAD program as a feature, notably through the low-cost option — however it gets defined by the state — that BEAD subgrantees will be required to offer to some or all customers in the project footprints where BEAD funds are deployed. The BEAD program will also have indirect effects on affordability, e.g., where BEAD-subsidized networks increase broadband competition or perhaps, in some cases, reduce it.

Third, effective digital equity work in unserved and underserved areas may raise take rates and thereby ease the business case for BEAD-funded broadband expansion projects. Digital equity efforts that improve ACP and Lifeline enrollment, access to internet-enabled devices, and/or digital skills that increase the internet's value to people, should help BEAD subgrantees cover operating and maintenance costs, thereby boosting private willingness to co-invest, or even making networks commercially sustainable that otherwise would fail.

2.2 Goals and Objectives

The present OBO was created by [HB 3363 of 2022](#), lasting until June 30, 2028, to be governed by the Broadband Governing Board and advised by the Broadband Expansion Council, with an ambitious mandate that includes creating and maintaining a Statewide Broadband Plan that “shall include, but not be limited to, detailing a pathway for ninety-five percent (95%) of the state’s population to be adequately served by June 30, 2028.”

This mandate resembles, yet is imperfectly aligned with, the goals and timeframes of the BEAD program. It seems, however, that the OBO can satisfy both by adopting the more ambitious of the two mandates in each case.

Thus, instead of HB 3633’s goal of 95%, the OBO must aim for 100% coverage to satisfy BEAD. But the HB 3633 target date of June 30, 2028, is earlier than the BEAD deadline will fall. However, the OBO might use its discretion within the BEAD program framework to target 100% coverage early, by June 30, 2028, thus meeting its state-defined goals while still beating the BEAD deadline.

The OBO tentatively proposes to do this and target 100% complete deployment by June 30, 2028, a few months in advance of the BEAD deadline. However, an alternative approach to

reconciling the timelines would be to set 95% coverage as a milestone to be achieved by June 30, 2028, on the way to 100% coverage in 2029. It's not clear, however, how the statewide milestone would be enforced against specific BEAD subgrantees, many of whom might want the extra time to complete their deployments. Therefore, for the sake of clarity and simplicity, we set a goal of 100% complete state coverage by the date of June 30, 2028, that was defined in HB 3633, with the option of adjusting this if state law changes.

Within the vision of universal broadband access, certain priorities and definitions have been settled by the NTIA, and Oklahoma embraces this more detailed BEAD vision.

First, broadband is still defined by the FCC as 25/3, which is arguably adequate for most everyday online functions. Therefore, areas lacking even 25/3 broadband access are the top priority for broadband expansion. However, infrastructure investment should look to the future, and rising data demand will foreseeably make 25/3 increasingly inadequate over time. Therefore, new deployments in these areas should not offer merely 25/3, but 100/20, the speed standard that targeted by the BEAD program.

Once all unserved areas are on track to be served, the state can proceed to target underserved areas that have 25/3 but lack 100/20. There, too, the BEAD program will seek upgrades that raise speed to at least 100/20.

Since broadband technologies differ across many performance factors, not just speed, and these become complex to quantitatively define, the NTIA has retreated somewhat from the tradition of technology neutrality in broadband grantmaking, and adopted an explicit scheme of technological prioritization, which Oklahoma will follow, targeting first end-to-end fiber, then, where it is too costly, looking for less expensive alternatives such as cable (hybrid fiber-coax-HFC) systems, DSL, and fixed wireless using licensed spectrum, but *not* satellite or fixed wireless using unlicensed spectrum unless cable, DSL, and licensed fixed wireless are also too expensive. These technologies, although their widespread availability is certainly welcome, often do not reliably meet the performance standards necessary for full participation in the 21st century society and economy, and therefore should not be the only options for internet service.

A secondary goal is to ensure that community anchor institutions (CAIs), a term for which a more refined definition is forthcoming by the OBO, but that will certainly include K-12, higher education, libraries, local, state and federal governments, public safety, public housing, and others to be determined by the state, should enjoy a faster service standard than what is normative for private households and ordinary businesses. CAIs can help non-subscribers to home internet service get occasional access, as well as meet the needs of people on the go, or provide help, training, and coaching for people who lack basic digital skills and struggle to use the internet on their own. CAIs may need to accommodate many users at the same time, so it's appropriate, and in the public interest, that they receive greater speed.

Other objectives include making internet service more affordable, both through inducing ISPs to charge less, particularly to low-income consumers when possible, and by encouraging people in need to participate in programs such as Lifeline and ACP. While the OBO plans to avoid subsidizing competitors that serve the same area, which can be inefficient and cause projects to



fail as competition erodes the business case for them, competition is still welcomed in general, and the OBO will look for ways to encourage it.



3 Current State of Broadband and Digital Inclusion

3.1 Current State of Broadband and Digital Inclusion

Table 1: Existing Programs

Activity Name	Description	Intended Outcome(s)
OSU-IT	Fiber optic training program	Meet demand for fiber optic technicians
Career Tech Workforce Program	Broadband infrastructure installation training program	Meet demand for broadband technicians
ACP Outreach	Enabling partners to do face-to-face ACP outreach and signup	Increased affordability
Rural Telehealth Expansion Program	Places telehealth booths in rural communities	Increased accessibility in communities with low access

Table 2: Current and Planned Full-Time and Part-Time Employees

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	FT	Executive Director	Serves as the executive leader of the agency, as well as the primary liaison between the agency and the Oklahoma legislative and executive branches.
Current	FT	Chief of Staff	Manages the internal processes of the agency.
Current	FT	General Counsel	Advises the Executive Director and the office on all legal matters, including, but not limited to, ethical grant processes and procedures.
Current	FT	Deputy Director	Research-based position focusing on workforce development and permitting.



Current	FT	Director of Broadband Strategy	Serves as the primary liaison between the agency and the federal representatives from NTIA, the FCC, and the U.S. Department of Treasury. Oversees all grants for the agency.
Current	FT	Director of Communications and Media Relations	Serves as the primary contact for news media, both in and out of state. Helps to develop talking points and materials for Executive Director's speaking engagements.
Current	FT	Senior Director of Engagement	Manages all external facing engagement including, but not limited to, news stations, public interface, and tribal coordination. Additionally, creates media materials for public consumption.
Current	FT	Director of Finance	Manages all federal funding streams within the agency. Creates processes and procedures for agency financial spend and management.
Current	FT	Compliance and Monitoring Officer	Reviews internal processes and procedures to ensure the agency is in compliance with state and federal regulations.
Current	FT	Grants Analyst-Digital Equity	Acts as project manager for the Digital Equity Act program. Helps to create program and monitoring for post-grant agreement.
Current	FT	Policy and Communications Analyst	Assists the Senior Director of Engagement with social media management, press release materials, as well as helps track state and federal legislation pertinent to the agency and mission.



Current	FT	Tribal and Outreach Manager	Manages and schedules all outreach and tribal coordination events.
Current	FT	Executive Assistant	Helps the Executive Director with scheduling and other clerical assistance.
Current	FT	Office Manager	Manages office purchase orders, travel, office needs, and other clerical work as needed.
Planned	FT	Grants Analyst-BEAD	Acts as project manager for the BEAD program. Helps to create program and monitoring for post-grant agreement.
Planned	FT	Administrative Assistant	Assist with general office needs, including constituent assistance/services. Also acts as assistant to the Chief of Staff and General Counsel.
Planned	FT	Staff Assistant	Will work directly with the Deputy Director to support workforce programming and permitting.

Table 3: Current and Planned Contractor Support

Current/ Planned	Time	Position	Description of Role
Current	FT	Connected Nation, Grants Consultant	To assist with grant writing and management of both the BEAD and DE planning process.
Current	FT	AppGeo	Geospatial insight, data collection, analysis, and planning.

Planned	PT	Legislative Consulting	To assist with bill tacking at both the state and federal levels. Additionally, helps the office to craft effective state legislation.
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Table 4: Broadband Funding

Source	Purpose	Total	Expended	Available
NTIA	BEAD funding for infrastructure build.	\$797,435,691.25	\$0	\$797,435,691.25
NTIA	Digital Equity Act funding to be used to assist in closing the digital divide in literacy, affordability, and access.	TBD	\$0	TBD
American Rescue Plan (State and Local Fiscal Recovery Funding)	Funding awarded by the Oklahoma State Legislature to serve the unserved and underserved locations in Oklahoma based on the FCC map.	\$382,144,000	\$0	\$382,144,000
American Rescue Plan (Capital Project Funds)	Funding awarded by the U.S. Department of Treasury to provide service at speeds of 100/100	\$167,683,747	\$0	\$167,683,747

FCC	Funding used to conduct statewide outreach to enroll constituents in the Affordable Connectivity Program (ACP)	\$500,000	\$0	\$500,000
NTIA	BEAD planning	\$5,000,000		
NTIA	DEA planning	\$882,088		

More About Broadband Funding in the American Rescue Plan Act (ARPA)

The COVID-19 pandemic further highlighted and exacerbated the inadequacy of the state of Oklahoma’s broadband services in many areas, as it heightened demand for data and made online connectivity far more critical to the functioning of organizations and the meeting of people’s basic needs. Virtual services of all kinds, and the broadband connections needed to access them, became more critical than ever as businesses closed their doors to avoid spreading the virus. In recognition of this, Congress included extensive funding for broadband deployment in the pandemic relief bill that passed in January 2021, the American Rescue Plan Act. Although pandemic lockdowns have since been rolled back and the emergency needs of the pandemic are less salient today, pandemic resiliency, and resiliency in the face of emergencies generally, remains an important policy rationale for broadband expansion.

With more than 18% of Oklahomans still considered unserved or underserved in the most recent version of the FCC National Broadband Map, the lack of broadband creates social and economic hardships, including deterring companies from conducting businesses in these communities. Moreover, the pandemic has, in some respects, fast-forwarded a process of societal adjustment to the possibilities of a digital age and created a “new normal” of widespread telework, more telehealth, and in general, greater reliance on virtual ways of meeting and doing business for all sorts of purposes. This makes it more critical than ever for public policy to aim at universal access to adequate broadband.

Responding not only to the pandemic, but to society’s increased dependence on broadband, as well as to increased availability of federal funds for broadband deployment, the state of Oklahoma passed HB 3363 into law on May 6, 2022, which established the “Oklahoma Broadband Expansion Act.” This Act created the statutory authority to create a statewide competitive broadband program and established a statewide goal to achieve 95% broadband coverage by 2028. The Act also created and tasked the OBO as the central entity responsible for overseeing, conducting, and implementing state broadband activities and grant programs. The state later allocated, in HB 1011 of 2022, two separate grant programs using funds from the U.S. Treasury under the American Rescue Plan Act of 2021 (ARPA). These two ARPA grant programs



are called the Capital Projects Fund (CPF) and The Coronavirus State and Local Fiscal Recovery Funds (SLFRF).

Capital Projects Fund (CPF)

To help close the broadband accessibility gap, the state of Oklahoma (through the Oklahoma Broadband Office) has planned to allocate its entire Capital Project Fund Allotment of \$167,683,747 toward the Oklahoma Broadband Infrastructure Grants (OBIG) Program. The primary focus of the OBIG Program is to use CPF funding to focus on more semi-rural areas — those locations with the ease to lay fiber but further from the metroplex areas. It is anticipated that the OBO will deploy CPF funds around Oklahoma in locations that have a high cost per mile of fiber, but also many households within each mile. The OBIG Program will incentivize ISPs, local governments, tribal entities, community anchor institutions, utilities, electric cooperatives, and other entities to increase reliable broadband availability in Oklahoma. The OBIG Program will subsidize up to 75% of costs for broadband infrastructure projects that bring high-speed broadband service to unserved and underserved residential and commercial properties. The OBO will be responsible for administration of the grant program including, but not limited to, publicizing the program, managing applications, evaluating, awarding grants, performing project monitoring activities, and enforcing all required federal reporting as determined by the U.S. Treasury's Capital Projects Fund Compliance and Reporting Guidance.

Although the OBO hopes to achieve agreement with the U. S. Treasury Department soon and launch a CPF grantmaking round by the end of the year, it anticipates that BEAD and CPF grant application and review windows will overlap. If so, program design for both BEAD and CPF will need to address that situation carefully to achieve synergy between the programs, rather than confusion and mutual interference. To avoid double funding any areas, and to ensure that CPF advances BEAD's goal of universal broadband access, the CPF and BEAD grant application review processes must be coordinated closely. CPF has a more aggressive timeline than BEAD — deployment by 2026 rather than 2028 — as well as a higher speed target, since “scalability” to 100 Mbps symmetric is required. There may be ways to have a joint CPF/BEAD review team study the same stack of grant applications, classifying as CPF-eligible the subset that promises 100/100 and deployment by 2026, with benefits in prioritization or awardable amounts. Details will be worked out when Oklahoma's CPF program is approved.

The Coronavirus State and Local Fiscal Recovery Funds (SLFRF)

The state of Oklahoma allocated from the Coronavirus State and Local Fiscal Recovery Funds (SLFRF) a total of \$385,009,068 to the Oklahoma Broadband Office to create, oversee, and administer four separate grant programs. The first of these four SLFRF grant programs is the “Broadband Investment” grant program, which was allocated \$382,144,000 for the OBO to establish the “State Broadband Grant Program” to develop the Broadband Investment competitive grant. The purpose of the Broadband Investment grant program is to award applicants that seek to expand access to broadband internet services in the state, focusing on areas considered unserved and underserved by the FCC. The OBO has established the grant selection criteria and anticipates having subrecipients selected by the end of October 2023.^[ns7]



The second SLFRF grant is called “Broadband Mapping,” which allocated \$2,000,000 to complete the State Broadband Map needed to create the Statewide Broadband Plan. The OBO has contracted with App Geo to complete the State Broadband Map and has thus far invested approximately \$400,000. The State Broadband Map is anticipated to be completed by August 2023 and will allow the state to effectively create and continuously update a mapping system that depicts resources, broadband coverage, connectivity speeds, and other vital features.

The third SLFRF grant program is the “OSU-IT Advanced Fiber Tech Training Program,” which allocated \$365,068 for the OBO to work with the Oklahoma State University Institute of Technology’s existing Advanced Fiber Technician Training Program.^[ns8] This program is vital to contributing to the broadband workforce and will directly impact 120 individuals (10 cohorts, 12 students per cohort) who are seeking opportunities for increased economic advancement. The program will further enhance the skill set of fiber technicians through the implementation of four advanced fiber courses that Oklahoma industry and subject matter experts have indicated a need for (i.e., fiber optics, certified fiber-to-the-home professional, OTDR and testing deep-dive workshop, and emergency restoration).

The fourth SLFRF grant program is “Broadband Administration,” which awarded the OBO \$500,000 to help establish the newly created entity in its efforts to carry out these broadband grants. These administrative expenses include office space, office supplies, software, and other essential expenses required for the OBO to administer federal grant programs efficiently and effectively.

3.2 Partnerships

Table 5: Partners

Partners	Description of Current or Planned Role in Broadband Deployment and Adoption
Oklahoma Broadband Governing Board (OBGB)	The Oklahoma Broadband Governing Board, composed of nine members, oversees the OBO, hires its Executive Director, and sets broadband expansion policy. Membership includes the Lieutenant Governor, State Treasurer, three appointees of the Governor, and two appointees each from the Speaker of the Oklahoma House of Representatives and the President Pro Tempore of the Oklahoma State Senate. The Governing Board has membership spanning multiple stakeholder groups and organizations, including two state agencies, ensuring a comprehensive and varied approach to broadband decision making and review procedures. The OBGB plays a critical role in keeping state and federal policymakers abreast of broadband timelines, spending, and priorities. OBGB leadership monitors broadband GIS data and mapping priorities ahead of the state’s summer map release. They also approve all grant applications prior to award.
Oklahoma Broadband Expansion Council (OBEC)	OBEC was created to improve, expand, and reduce the cost of high-speed internet connectivity in Oklahoma. To achieve this goal, the council advises the OBO and creates recommendations for new

	<p>policies and incentives. The 14-member council includes the Executive Director of the OBO, along with appointees by the Governor, Speaker of the Oklahoma House of Representatives, President Pro Tempore of the Oklahoma State Senate, and Oklahoma Corporation Commission. The council is composed of leaders in business, education, government, health care, research, and technology.</p>
Oklahoma Department of Commerce	<p>The Department of Commerce's goal is to bring jobs, investment, and economic prosperity to the state of Oklahoma. The <i>Business Expansion Incentive Program</i>, co-sponsored by the Oklahoma Department of Commerce and Oklahoma Development Finance Authority, is addressing broadband availability for communities. The program assists companies that are making major capital investments with essential items like buildings, equipment, and infrastructure, such as fiber broadband networking. This incentive is available to public entities that plan to partner with area businesses, with the purpose of expanding infrastructure to improve the local community.</p>
Oklahoma State Department of Education	<p>As the leading education agency in the state of Oklahoma, the Oklahoma State Department of Education sets the agenda and direction of the public school system. Together with the Oklahoma Department of Career and Technology Education and Oklahoma State Regents for Higher Education, the Department forms the core of Oklahoma's public education system. In response to the COVID-19 pandemic, OSDE launched <i>Ready Together Oklahoma</i>, an action plan for supporting students through the pandemic and beyond. The web forum hosts learning resources, health care information, and community programs.</p>
Oklahoma Department of Libraries (ODL)	<p>The ODL is the official state library of Oklahoma. ODL serves the information and records management needs of state government, assists with public library development, coordinates library and information technology projects for the state, and serves the public through specialized collections. Since the COVID-19 pandemic, ODL has played a critical role in outreach for the ACP, specifically providing library patrons with resources and enrollment assistance. Further, many of the stops on the "Let's Get Digital" Oklahoma Broadband Listening Tour were held in libraries, highlighting the important role of these community institutions. Oklahoma libraries offer a variety of resources and programs, including digital literacy training, telehealth booths, and workforce development courses. ODL is partnering with the Oklahoma Broadband Office on ACP outreach, as a key opportunity to ease affordability barriers and make progress towards closing the digital divide.</p>

Oklahoma State Department of Health	The Oklahoma State Department of Health's (OSDH) vision is to lead Oklahomans to prosperity through health. Broadband is a critical part of maintaining health in today's world, as technology allows health care workers to interact with and promote better health for patients. Work across the state includes mobilizing wellness units and vans, equipped with satellite dishes, to provide health services, especially in rural and underserved areas.
OK Office of Geographic Information (OGI)	The OGI is the source of some important map data that the OBO will use in administering the BEAD program. Also, OGI is partnering with the OBO on the state BSL layer effort, which will (upon completion) eliminate the restrictive, licensed CostQuest BSL data.
Oklahoma Digital Inclusion Alliance	The Oklahoma Digital Inclusion Alliance is composed of various nonprofit entities and local state agencies dedicated to bringing broadband access, affordable personal devices, and local technology training to the public. The alliance also provides financial and operational resources for digital inclusion programs while serving as a bridge for policymakers and the public.
Oklahoma Digital Equity Coalition	The digital equity coalition, formed by the OBO, provides insight and recommendations around barriers to accessing and using affordable, reliable high-speed internet. Representatives from research institutions, nonprofit organizations representing covered populations, state agencies, and tribal governments serve on the coalition.
Internet Service Providers (ISPs)	The state of Oklahoma will partner with ISPs to bring reliable and affordable connectivity to unserved and underserved locations.
OneNet	OneNet's mission is to advance research and education in communities across Oklahoma by delivering high-speed, affordable connectivity and technology solutions. Notably, OneNet operates the Oklahoma Community Anchor Network, which is infrastructure that brings connectivity to community anchor institutions across the state, including educational institutions, libraries, health care providers, research organizations, and local, state, national and tribal government agencies. In conjunction with the Oklahoma State Regents for Higher Education, OneNet led the effort to develop an <i>Oklahomans Virtually Everywhere</i> program.
Tribal Governments	There are 39 tribal nations in Oklahoma. Tribal governments provide critical resources in health care, education, economic development, and government services to citizens. In an effort to collect feedback from tribal leaders, the OBO conducted independent tribal consultations across the state. Meetings were held with all 39 tribes, including the Chickasaw Nation, Choctaw Nation, Kickapoo Tribe, Sac and Fox Nation, Fort Sill Apache Tribe, Osage Nation, Shawnee Tribe, Kiowa Tribe, Cheyenne and Arapaho Tribe, Apache Tribe, Caddo Nation, and Wichita and Affiliated Tribes. In January 2023, the OBO invited state, local, and federal leaders to join an <i>Internet for All</i> :

	<i>Oklahoma Local and Tribal Nation Coordination Workshop</i> to coordinate state efforts on broadband planning.
Nonprofit Organizations (United Way, Goodwill, EducationSuperHighway, AARP, Salvation Army, etc.)	Nonprofits across the state are active in health care, education, business development, and public safety advocacy. Community programs include digital literacy training, education and community outreach, telehealth screenings, and device acquisition assistance.
Oklahoma State University-Institute of Technology (OSU-IT)	OSU-IT received approximately \$365,000 in American Rescue Plan funds to provide job training to increase the pipeline of fiber technicians, especially in rural parts of the state. They also received an NTIA workforce development grant of \$750,000 for fiber optic technician training.
Oklahoma CareerTech Technology Centers	The state has a network of 29 technology centers across 60 campuses, serving high school and adult learners with more than 90 instructional courses, including the likes of cybersecurity forensics and network/computer systems admin. In 2022, the State Legislature appropriated \$5 million in American Rescue Plan Act funds to CareerTech to train broadband infrastructure installation workers. The program is designed to support workforce development and bring internet access to underserved locations.
OSU Center for Rural Health	The OSU Center for Rural Health enhances the quality of life for rural and underserved Oklahoma communities through the development of medical and public health workforce programs, research, policy, and community engagement. The center offers cutting edge medical research and telehealth curriculum to support the health needs of Oklahomans across the state.
OSU Center for Health Sciences (OSUCHS)	OSUCHS is on a mission to provide innovative health solutions for rural Oklahomans and to improve Oklahoma's health status. The center focuses on providing health care for rural and underserved areas of Oklahoma. Through its project <i>Extension for Community Health Care Outcomes</i> (ECHO), the center is connecting rural health care workers with multidisciplinary specialists at OSUCHS. The program utilizes videoconferencing technology to allow rural physicians to meet, discuss, and train with experts at the OSUCHS.
Oklahoma Municipal League (OML)	The OML serves as the unified voice of 586 Oklahoma municipal governments. In partnership with the OBO, OML provides critical advocacy and education to local leaders on broadband policy, resources, and programs.
American Indian Chamber of Commerce of Oklahoma (AICCO)	AICCO is a nonprofit dedicated to educating, empowering, and engaging American Indian businesses and leadership. The chamber's goal is to foster economic success through workforce training and business development. In recognition of broadband's critical role in business development, AICCO cohosted the <i>Internet for All: Oklahoma Local and Tribal National Coordination Workshop</i> .

Oklahoma Native Assets Coalition (ONAC)	As a Native-led nonprofit, ONAC works with tribes and community partners who are dedicated to increasing opportunities for economic self-sufficiency for native communities through financial education, banking assistance, and asset-building strategies.
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3.3 Asset Inventory

One of Oklahoma’s most important assets as it begins to implement the BEAD and digital equity programs is the Oklahoma Broadband Governing Board (OBGB), which meets monthly and brings together high-level representation from industry, government, and civil society. Members include a Farm Bureau director and the CEO of the Oklahoma City Innovation District, as well as lawyers and engineers, combined with a strong executive branch presence with the State Treasurer and the Lieutenant Governor. The OBGB is a key asset because of the strong thought leadership it provides, as well as social and professional connectivity to a rich array of Oklahoma broadband stakeholders, for whom it can serve as a spokesperson and information conduit.

Amplifying the planning and information dissemination potency of the OBGB is the Oklahoma Broadband Expansion Council, which has strong representation from the broadband industry, including both national and global companies like Verizon and AT&T, and telephone companies and electric cooperatives whose footprint is more local. The council also includes an academic with an interest in broadband, a regional hospital COO, a mayor, a tribal representative, and the executive director of the OBO.

3.3.1 Broadband Deployment

A lot of broadband infrastructure has already been deployed in Oklahoma, and most locations in the state already have access to high-speed internet. The OBO believes extensive fiber-optic backbone and middle-mile facilities to provide backhaul are available but are often treated as proprietary by the ISPs that own and operate them. Publicly owned middle-mile assets exist. For example, the OneNet system is described in section 3.3.3, but its primary purpose is to serve CAIs, and the OBO has not discovered to what extent its assets can be made available to private ISPs to provide backhaul for new broadband deployments in rural areas.

The OBO conducted outreach to many state agencies to learn about state-owned broadband assets in Oklahoma that might be leveraged in support of BEAD deployments. Most of these agencies reported that no state-owned broadband assets are under their control. Responding on behalf of the Office of Management and Enterprise Services, under the state COO, an officer responded that:

My interpretation is that none of OMES assets are ‘broadband’ as the intent of rural broadband is to provide connectivity to the commercial internet – an ISP– internet service provider.

This answer underscores the legal and operational challenges of leveraging state-owned broadband assets — meaning backbone and middle-mile assets — for broadband deployment by commercial ISPs. Public officials tasked with running IT systems might in effect have to pivot to a different business to sell backhaul in support of BEAD deployments. OneNet, however, did respond favorably to the survey, indicating a potential interest in collaborating with the BEAD program.

Three agencies indicated that they were “exempt by law” from having to respond to the OBO’s inquiries about state-owned broadband assets. These were:

- Corporation Commission
- State Regents of Higher Education
- Department of Transportation

In addition, the Oklahoma Turnpike Authority has become exempt since the OBO’s inquiry due to new legislation.

The OBO may reach out to these agencies in the future to probe whether this “exempt by law” status *precludes* them from sharing data with the OBO, or potentially sharing facilities with commercial ISPs to support BEAD deployment. In particular, the Oklahoma Department of Transportation has offered cooperation and shared asset information. The Department of Transportation can play an important role in BEAD implementation by providing access to the public right-of-way for trenching and laying broadband facilities.

The Turnpike Authority responded to the OBO’s inquiry with an emphasis on its prerogative and need to control the fiber assets it owns:

The OTA’s fiber-related programs, assets, and personnel are central to its electronic toll collection system and indispensable to the collection of toll revenue. The acquisition and maintenance of the program and assets, along with all costs incurred related to personnel, have been acquired with bond proceeds or toll revenues (not tax appropriated funds), [and] are therefore subject to the terms of OTA’s trust agreement with bondholders. Based on these aforementioned items, the OTA has no fiber-related programs, personnel, or assets to transfer to the Office of Broadband. We do, however, maintain a partnership with the state and will continue to allocate a select number of OTA lit fiber to both OMES and the Oklahoma Department of Transportation.

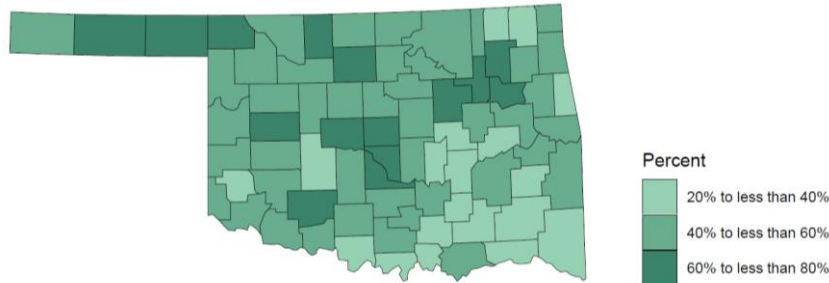
As the BEAD program proceeds, the OBO will plan to keep the Turnpike Authority informed of developments, and if occasion arises for OMES to make concrete offers to the Turnpike Authority that could lead to payment for fiber backhaul to its advantage, the OBO will communicate those opportunities to OTA.

In general, the OBO’s conclusion so far is that opportunities for the BEAD program to accelerate or reduce the cost of broadband deployment by facilitating or negotiating access by ISPs to state-owned fiber assets are quite limited.

3.3.2 Broadband Adoption

The U.S. Census Bureau’s American Community Survey (ACS) collects data about home internet subscriptions and internet-enabled computing devices in the household. These data exist at multiple levels of aggregation, including at the county and state level, and can be broken down by household income. Figure A below illustrates ACS 2017-2021 five-year estimates of whether households have adopted fixed home internet at the county level. These numbers exclude households with a cellular data plan but no other type of internet subscription, households with dial-up internet but no other internet service, and households that rely on satellite internet service.

Figure A. Fixed Home Internet Adoption Rates by County in Oklahoma



Based on 2017-2021 five-year ACS estimates

At the state level, while 88% of households subscribe to internet service of some kind, only 66.1% of households subscribe to fixed home internet (broadband such as cable, fiber optic, or DSL). There are large differences at the county level. The highest rate of any county is 75% in Cleveland County, southeast of Oklahoma City. In fact, the five counties with the highest adoption rates (Cleveland, Canadian, Wagoner, Tulsa, and Oklahoma) either include urban areas or are adjacent to urban areas. Meanwhile, the five counties with the lowest adoption rates are in rural areas and predominantly on tribal lands.

Table 6: Internet Use Among Covered Populations in Oklahoma

	Aging Individuals	Veterans	Racial and Ethnic Minorities	Whole Population
Use Internet for Video Conferencing	43.7%	53.8%	50.4%	55.3%
Use Internet for Teleworking	29.4%	33.3%	26.6%	37.9%
Use Internet for Job Classes and Online Training	9.5%	20.5%	24.8%	21.2%
Use Internet for Online Banking	60.1%	64.1%	68.8%	71.7%
Use Internet for Accessing Medical Records	44.7%	50%	40.1%	48.5%
Use Internet for Telemedicine Appointments	37.4%	36.6%	32.1%	36.6%

Source: NTIA Current Population Survey, Computer and Internet Use Supplement, November 2021

Table 6 above depicts how Oklahomans use the internet — among aging individuals (age 60-plus), veterans, racial and ethnic minorities, and for the total sample of statewide respondents. These three groups are considered covered populations by the NTIA. For several digital activities (using the internet for videoconferencing, telework, or online banking), all three

covered populations use the internet at rates lower than the statewide average. For the remaining items (using the internet for job classes and online training, accessing medical records, and for telemedicine appointments), two of the three covered populations use the internet at rates lower than the statewide average.

3.3.3 Broadband Affordability

Broadband affordability serves as a significant barrier to home internet adoption. While many households may have access to broadband, fewer can afford to pay for the service each month. According to data derived from a statewide listening tour, 60% of respondents believed that high costs were a barrier to households subscribing to home internet.

Several government programs exist to make home internet more affordable and reduce the gap between access and adoption rates. The Affordable Connectivity Program (ACP), created by the Infrastructure Investment and Jobs Act, provides a monthly \$30 discount toward internet subscriptions and a one-time \$100 discount toward an internet-enabled device for all eligible households. For residents living on tribal lands, including former reservation land, that monthly discount increases to \$75 per month. Eligibility is determined either by household income (must be below 200% of federal poverty guidelines) or through participation in other federal or tribal assistance programs (like SNAP, Medicaid, or Federal Housing Assistance).

The other major federal program that helps low-income households afford home internet service and phone connections is Lifeline. This program is managed by the Universal Service Administrative Company (USAC) and lowers the monthly cost of telephone or internet service for eligible households by \$9.25. Residents living on tribal lands receive an enhanced benefit of \$34.25 per month, as well as up to a \$100 reduction for first-time connection charges.

Identifying the population eligible for the ACP program is challenging. While the ACS provides information on household incomes and estimates of the percentage of households below different poverty levels, it does not provide information on the number of households enrolled in other assistance programs. According to estimates produced by EducationSuperhighway (divided by the number of total households derived from the 2021 ACS), 46.4% of households in Oklahoma are eligible for the ACP.¹ Of those eligible, 41.4% of households have enrolled in the ACP. Table 7 below depicts the percentage of eligible households that subscribe to the ACP, using eligibility numbers from EducationSuperhighway and enrollment numbers from USAC's ACP Enrollment and Claims Tracker (with data as of June 19, 2023).² Overall, Oklahoma ranks ninth in the country with regard to ACP participation.

Table 7: Percentage of Eligible Households that Subscribe to the ACP

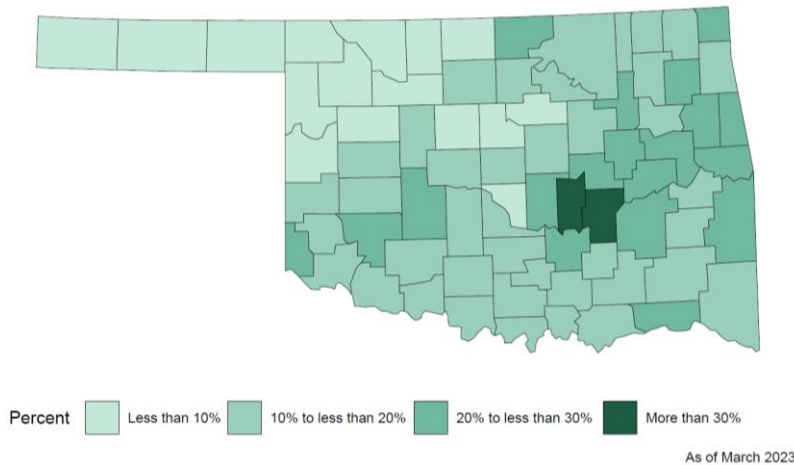
Rank	State/Territory	Enrolled	Eligible	Percent
1	Puerto Rico	600,097	962,129	62.4%

¹ <https://www.educationsuperhighway.org/no-home-left-offline/acp-data/>

² <https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/#enrollment-by-state>

2	District of Columbia	53,182	104,893	50.7%
3	Louisiana	456,744	904,157	50.5%
4	Ohio	970,062	1,984,218	48.9%
5	Kentucky	390,507	846,290	46.1%
6	North Carolina	781,805	1,741,427	44.9%
7	Nevada	216,372	493,948	43.8%
8	New York	1,381,155	3,276,799	42.1%
9	Oklahoma	288,725	697,600	41.4%
10	Wisconsin	365,277	894,005	40.9%

Figure B. Oklahoma Households Participating in the ACP



Unfortunately, eligibility data cannot be discerned at the county level from these data sources. To visualize ACP participation, Figure B above shows the percentage of total households in each county that have enrolled in the program as of March 2023. Data on ACP enrollment comes from USAC's ACP Enrollment and Claims Tracker, while data on the number of households in each county comes from 2017-2021 five-year ACS estimates. While ACP participation varies across the state, the eastern counties have higher rates of participation than the rest of the state. These areas are predominantly rural and on tribal lands. Seminole County has the highest participation percentage (31.1%), followed by Hughes County (30.3%), Harmon County (27.5%), and Pottawatomie County (25.9%).

3.3.4 Broadband Access

Community anchor institutions (CAIs) contribute to broadband access by serving people with limited access or skills, or those needing to access the internet for special purposes. In support of CAI access to broadband, Oklahoma has a system called [OneNet](#), a robust high-speed, high-availability network. OneNet is Oklahoma’s research and education network that serves universities, colleges, CareerTechs, K-12 schools, libraries, health care facilities, and research institutions, as well as local, state, tribal, and federal governments. OneNet does not serve private businesses or private residences. OneNet is a division of the Oklahoma State Regents for Higher Education. With multiple hub locations, OneNet stretches from Guymon to Altus, and from Idabel to Miami. In addition to providing fiber access to more than 1,300 locations, OneNet provides cybersecurity services, managed services, content filtering, and data center services to its clients. A diagram of the network is available in Figure C.

Figure C. Network Diagram of OneNet’s Network and Points of Presence



3.3.5 Digital Equity

In the past two

months, the OBO conducted a listening tour across the state — stopping in 19 cities and towns, including the most rural areas. In total, 299 residents participated, including representatives from ISPs, local nonprofits, CAIs, and residents concerned about the state of broadband in their communities. In the process, participants were asked several questions about their experiences with the internet, the availability of digital inclusion opportunities in their communities, and how the state could improve upon existing offerings.

Figure D. A Question and Results from the Listening Tour

To the best of your knowledge, which of the following digital inclusion opportunities are offered in your community?

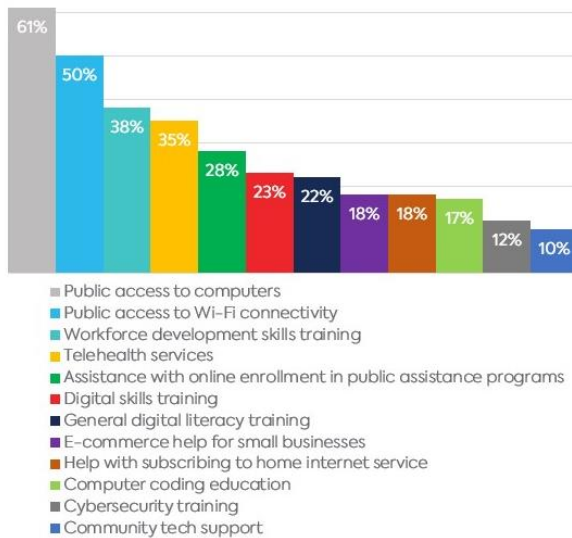


Figure D above displays results from one question asked during that listening tour. Multiple responses could be chosen. Of all these opportunities, public access to computers appears to be the most common: 61% of participants suggested that they have this in their community. After that, 50% of participants reported having public access to Wi-Fi connectivity somewhere in their community. An additional 38% responded that they had workforce development skills training in their community, 35% had readily available telehealth services, and 28% could receive assistance with online enrollment in public assistance programs in their community. The remaining options are less common but still available in many locales.

3.4 Needs and Gaps Assessment

The BEAD program is principally designed to meet the need for more broadband deployment, which is explored in the most detail here. The needs for broadband adoption, affordability, access, and digital equity also help motivate, and are expected to be impacted by, the BEAD program.

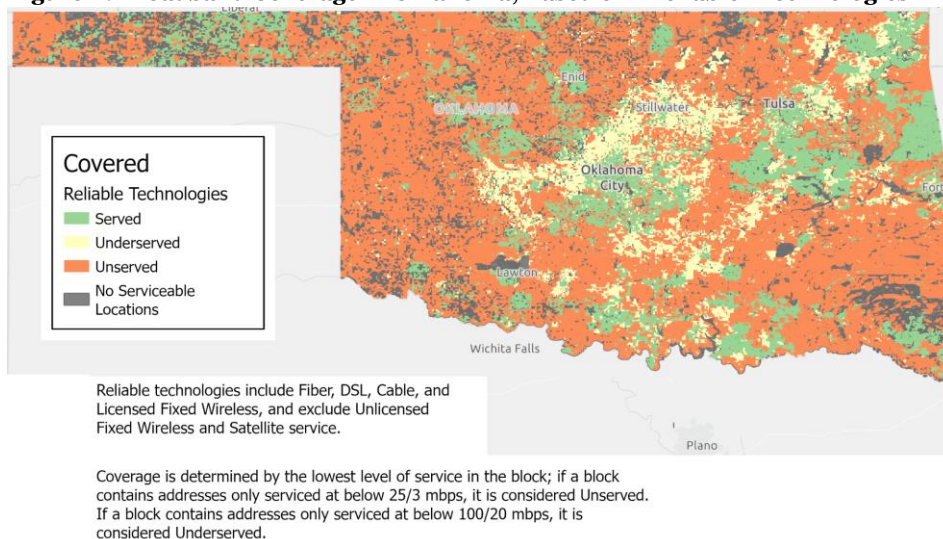
3.4.1 Broadband Deployment

At present, the best available data source on broadband coverage in Oklahoma, despite its known limitations, is the FCC National Broadband Map, developed based on much-improved methodologies relative to the previous Form 477 maps in fulfillment of the Broadband DATA Act of 2020. While administering the BEAD challenge process, the OBO hopes to gain insight into broadband coverage that exceeds the accuracy of the FCC map, and to use that insight for

better decision-making. In the meantime, the discussion of coverage here is based on the FCC map.

Figure E below divides Oklahoma into (a.) served, (b.) underserved, and (c.) unserved areas, limiting the technologies under consideration to “reliable” technologies as defined in the BEAD NOFO, namely, end-to-end fiber, cable (coax), DSL, and licensed fixed wireless. For the sake of readability, all data are rolled up to the census-block level of granularity. The purpose of rolling up to the census-block level was to color the whole block by the *least* well-served location, so that if *any* location in a block is unserved, the block is colored as unserved, and otherwise if *any* location is underserved, the block is underserved. In a sense, this overstates the problem, but it displays the geographic reach the BEAD program will need to target.

Figure E. Broadband Coverage in Oklahoma, Based on “Reliable” Technologies

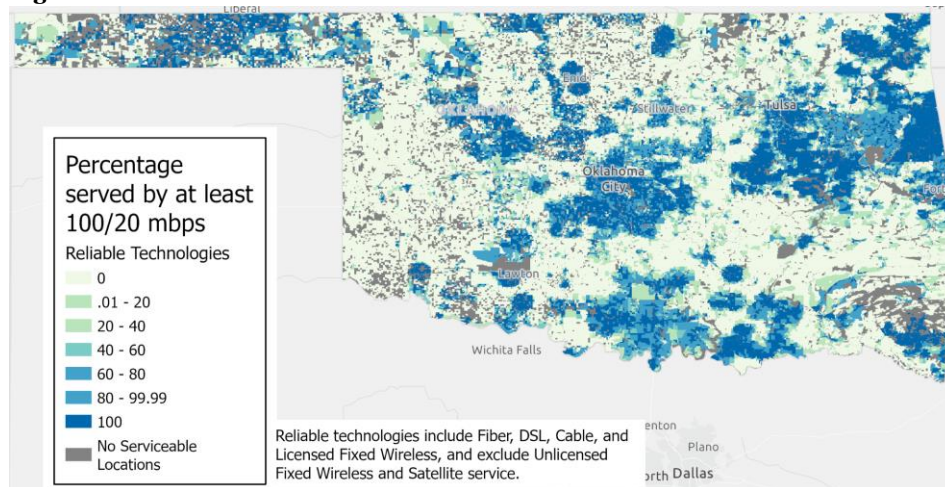


From Figure E, it is clear that most of the state has unserved locations that the BEAD program will need to target. Only the green areas on the map are adequately served and can be ignored by the BEAD program. Of course, the green areas contain most of the *people*, but most of the *territory* is yellow or orange. The gray areas can also be ignored by BEAD because they have no serviceable locations. The BEAD program will need to seek solutions throughout all the orange areas in Figure E, *except* those already covered by existing federal programs. If funding is left over after those solutions have been identified, the program will need to seek solutions for all the yellow areas, if they’re not already funded.

To address the information loss that comes from ignoring partial coverage, Figure F below focuses on availability of 100/20 broadband by “reliable” technologies. The darkest blue areas correspond to the green areas above, but the footprint of 100/20 coverage extends considerably beyond that through blocks that are partially served, and only the white areas represent census

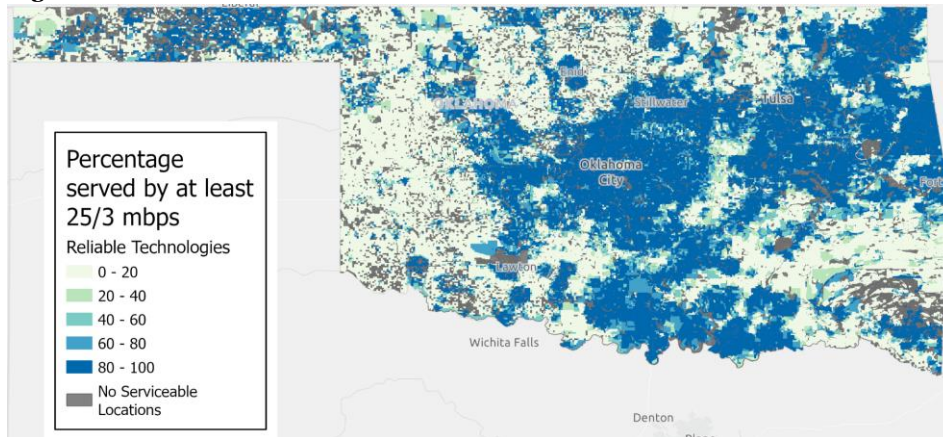
blocks where *all* the locations are unserved or underserved and need to be targeted by BEAD or other federal programs (if they haven't been scheduled to receive service already).

Figure F. Underserved Oklahomans



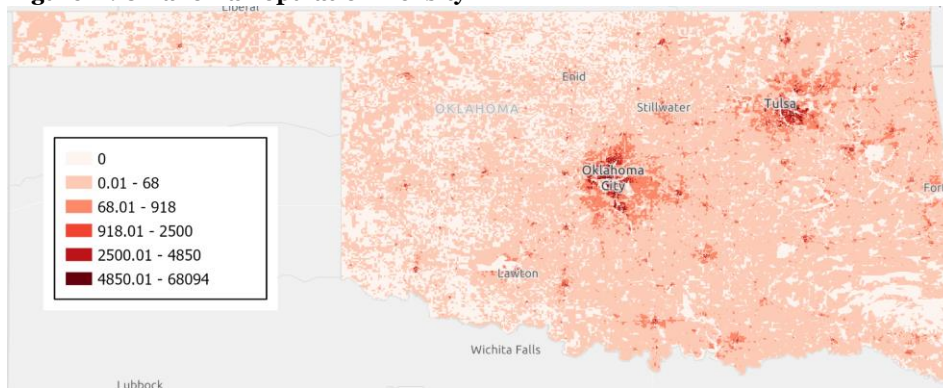
Focusing on a lower tier, Figure G below represents the percentage of households with access to broadband by “reliable” technologies at speeds of at least 25/3. Here, the dark blue areas correspond to the green *and* yellow areas in the first coverage map, and the light blue areas show how the footprint of 25/3 coverage extends a little beyond that. The white areas show where *no one* has even 25/3 coverage, and thus represent the first priority for the BEAD program. If the BEAD program were to deploy reliable broadband service to all the unserved locations in the state, it would turn the below map completely dark blue. If it deployed to all the underserved locations, it would turn the previous map completely dark blue. This is a measure of how ambitious the BEAD program’s goals are.

Figure G. Unserved Oklahomans



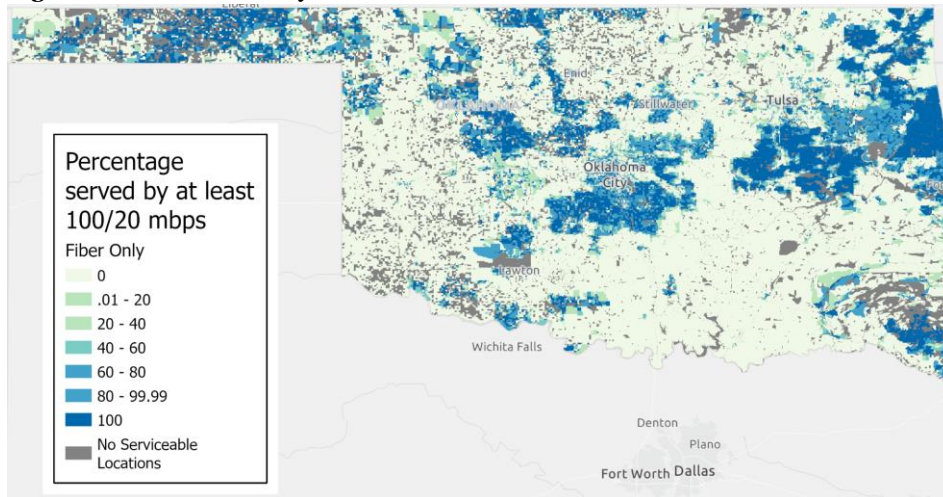
Many factors affect patterns of broadband deployment, but the most important is population density. Figure H below shows the distribution of population density across the state of Oklahoma. There are two major concentrations of population, in Oklahoma City and Tulsa.

Figure H. Oklahoma Population Density



Population density is important because it determines how many serviceable locations an ISP can reach with a given amount of coverage, and therefore drives the amount of revenue the ISP can capture and use to cover its capital expenditures (capex), operation, and maintenance costs. Network costs generally do not scale with the number of drops or customers but with the distances and areas covered, so the business case for deployment deteriorates as populations thin out. That's why coverage is generally best in and around the population centers of Oklahoma City and Tulsa and worsens further from these cities. However, a nuance is that the best coverage, by end-to-end fiber-optic cable, sometimes appears in rural areas and not the biggest city centers, as shown in Figure I below.

Figure I. Fiber Availability Across Oklahoma

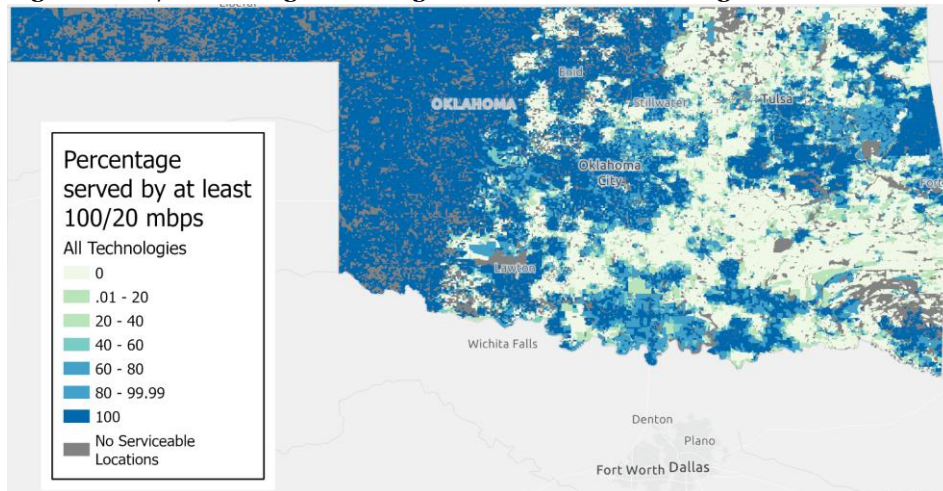


The general explanation for this pattern is that population centers tend to enjoy good, if not the best, service from cable broadband that uses the old cable television infrastructure and can often achieve gigabit download speeds, though not gigabit symmetric. In such areas, while fiber would still represent an upgrade, the need for it is less acute. By contrast, in the generally more rural areas that lack cable television infrastructure, there is no way to get modern broadband speeds without new infrastructure. While this “leapfrogging” effect explains why some rural areas have fiber while many urban areas lack it, the specific distribution of fiber coverage often has little explanation and reflects the accidents of federal program rules and individual company decisions.

While the BEAD program is focused on “reliable” broadband technologies, the other broadband technologies, unlicensed fixed wireless and satellite, may help many Oklahomans get online during the BEAD buildout or in areas where the BEAD program does not secure any better technology solution to the connectivity gap.

Currently, *the entire state of Oklahoma* is claimed to be covered at least 25/3 speeds by some ISPs if non-“reliable” technologies are included. At the 100/20 speed tier, coverage claims are less extensive, yet the thinly populated western part of the state is completely covered, partly thanks to a large footprint of unlicensed fixed wireless, but especially because of LEO satellite, which does not claim 100/20 coverage in central and eastern Oklahoma, but *does* claim it in western Oklahoma, where it is flatter with less tree cover.

Figure J. 100/20 Coverage Including Non-“Reliable” Technologies

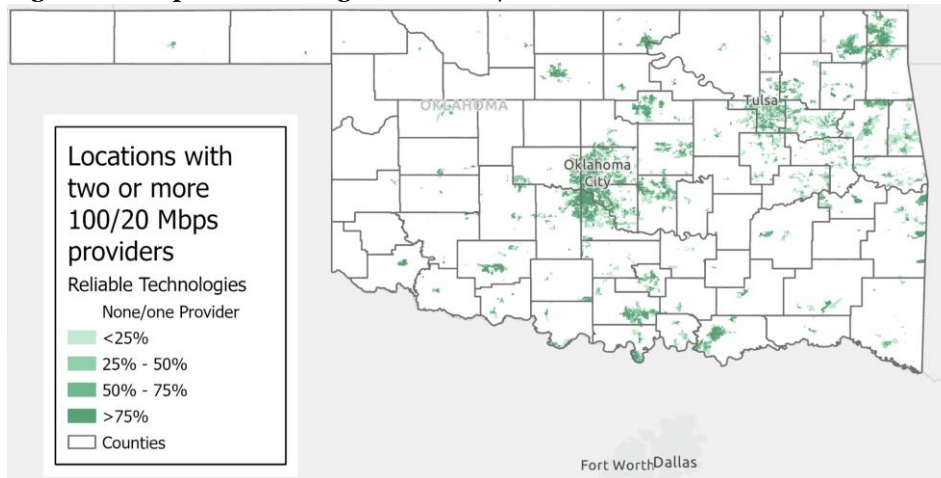


Although the availability of fixed wireless and/or unlicensed fixed wireless 100/20 broadband service will not initially affect locations’ BEAD eligibility, it must be borne in mind for two reasons. First, if this service is perceived by many to be of adequate quality, potential BEAD subgrantees may have reason to be less confident about a business case for deployment because the presence of a competitor will limit the market share that they can capture and the prices that they can charge while remaining competitive. Second, the BEAD NOFO contemplates scenarios in which non-“reliable” technologies may serve as a fallback option if no “reliable” technology project is proposed for a price lower than the Extremely High Cost Per Location Threshold.

Even in served areas, there tends to be a lack of broadband competition at any given location. Figure K below shows the percentage of locations per census block where there are two or more providers offering internet service by “reliable” technologies at speeds of 100/20 or faster. Such competition is common in Oklahoma City and Tulsa, and there are pockets of it elsewhere in the state, but most of Oklahoma has one 100/20 reliable broadband provider at most.

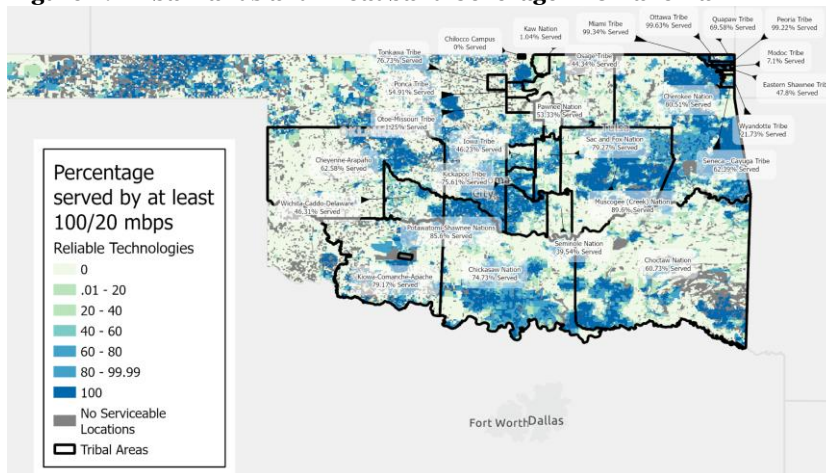
Broadband tends to have a “natural monopoly” character because of the inherent inefficiency of duplicative networks, a factor that affects other utilities such as electricity and water. This can lead to abusive pricing, neglectful customer service, and other problems. While the BEAD program isn’t designed to foster competition, it may do so incidentally in some areas, but the somewhat monopolistic character of the broadband industry is also a reason why some pricing oversight is built into the BEAD program and needs to be taken seriously and enforced.

Figure K. Competition Among Reliable 100/20 Broadband Providers



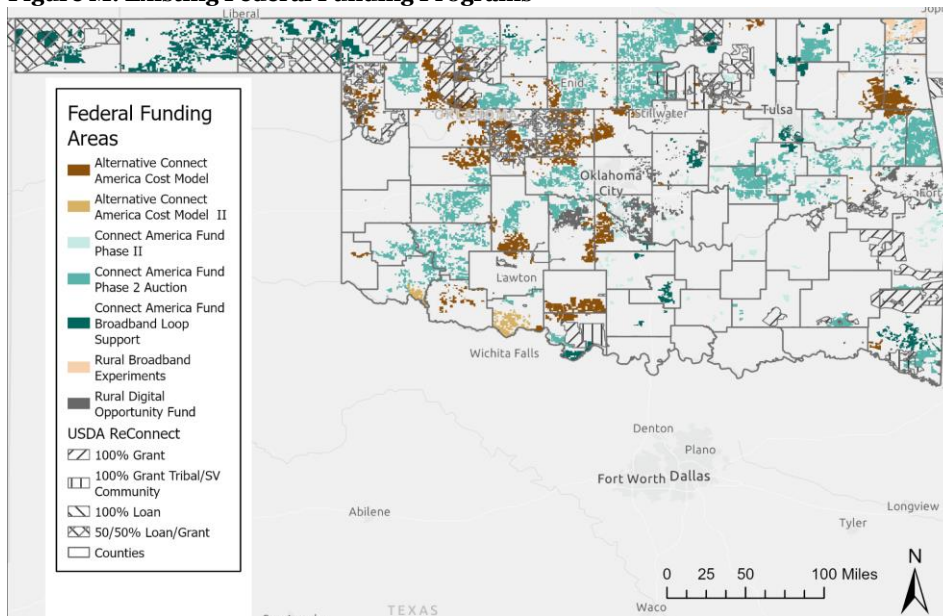
A crucial factor in Oklahoma's BEAD planning is that ***most unserved and underserved locations are on tribal lands***. Of the 150,097 locations classified as unserved, 122,065, or 81%, are on tribal lands. Of the 147,446 locations classified as underserved, 117,976, or 80%, are on tribal lands. Most served locations (60%) in Oklahoma are also on tribal lands, which include urbanized areas, but the tribal share of unserved and underserved locations is especially high. This underscores the importance for the OBO to coordinate with the tribes as it implements the BEAD program. Figure L below shows the tribal lands in Oklahoma, along with the coverage ratio for each tribal nation.

Figure L. Tribal Lands and Broadband Coverage in Oklahoma



Finally, the BEAD planning process must consider that a large part of rural Oklahoma is already scheduled to receive service under an existing federal program. Figure M below shows the footprint of existing federal funding programs according to the [FCC's Broadband Funding Map](#), although not all the areas shown have reliable 100/20 broadband projects on track to fulfillment. This will need to be checked as part of the upcoming BEAD Initial Proposal and Challenge Process. Clearly, though, a significant part of Oklahoma's broadband coverage needs can be expected to be met through existing programs and deployment commitments, without additional effort from the BEAD program.

Figure M. Existing Federal Funding Programs



Speed Tests Suggest Slower Speeds in Practice

It is important to remember that the *best available* speeds as reported by the FCC overstate what is experienced by the typical user for many reasons.

First, the FCC National Broadband Map shows self-reported coverage data from ISPs. The FCC asks ISPs for the maximum *advertised* speed, and ISP advertisements typically claim speeds “up to” a stated rate. The ISP's network may *sometimes* deliver speeds of 100 Mbps, and that is all that their advertisements claim.

Second, ISPs' self-reported data has, until recently, been almost completely unverified. The Broadband DATA Act of 2020 introduced a challenge process to check ISPs' claims. There was substantial participation in it, but still many data points in the FCC National Broadband Map represent unverified self-reported coverage claims from ISPs. ISPs have a good deal of inherent

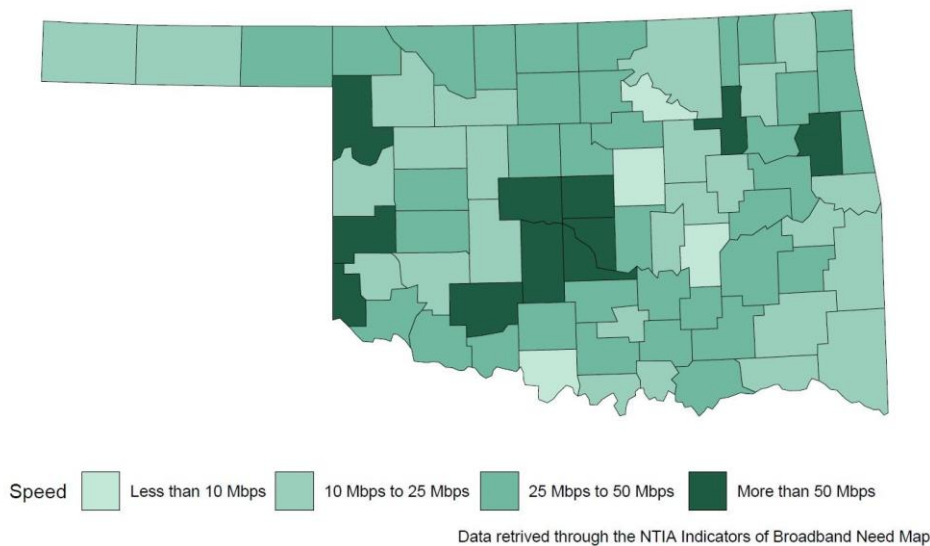
discretion in how they report and may have strategic reasons to overstate coverage to exclude competitors.

Third, the FCC National Broadband Map shows the *maximum* advertised speed, but in many cases, ISPs reserve the fastest speeds for customers who pay premium prices that are not affordable for many broadband customers.

Fourth, the speeds experienced by customers may be inferior to the speeds advertised by ISPs for reasons that lie on the customer side. A customer using a low-capacity, faulty, or obsolete router might get slower speeds than the internet connection itself is capable of offering. Multiple devices used at once can tax a connection, and a customer using Wi-Fi a long way from the router will generally get a slower and less reliable connection.

This rather unsatisfactory situation with respect to broadband coverage data has been much remarked upon but is difficult to fix. To offset the impression that it may make, however, it is useful to turn to speed test data, such as the M-Lab Median Download Speeds data available from the NTIA Indicators of Broadband Need Map. This data source has its own limitations and biases and should not be treated as refuting the FCC National Broadband Map, since any such comparison would be apples to oranges. Speed tests across Oklahoma show that in most Oklahoma counties, most speed test results indicate download speeds of less than 50 Mbps, and in quite a few counties the median is below 25 Mbps.

Figure N. Speed Tests Underscore the Inadequacy of Available Broadband
M-Lab Median Download Speeds (Mbps)



While not definitive, speed tests from M-Lab and other sources are a reminder that the actual experience of most internet users may be considerably inferior to what ISPs advertise, for reasons that may or may not be within the customer's power to fix.

3.4.2 Broadband Adoption

The policy objective of the BEAD program, which by now has been widely embraced by elected and community leaders throughout the state, is universal *access*, or to use a helpful synonym, universal *availability* — **not** universal *adoption*. Nevertheless, raising adoption rates can be expected to benefit most new broadband adopters, as well as helping the BEAD program achieve its goals by strengthening the business case for deployment *ex ante* and the commercial sustainability of BEAD-built networks *ex post*.

It's a cause for concern that some areas in Oklahoma have strikingly low broadband adoption rates. Counties in Oklahoma vary considerably in their rates of fixed home internet adoption, and the counties with the lowest rates are shown in Table 8.

Table 8: Oklahoma Counties with the Lowest Fixed Home Internet Adoption Rates

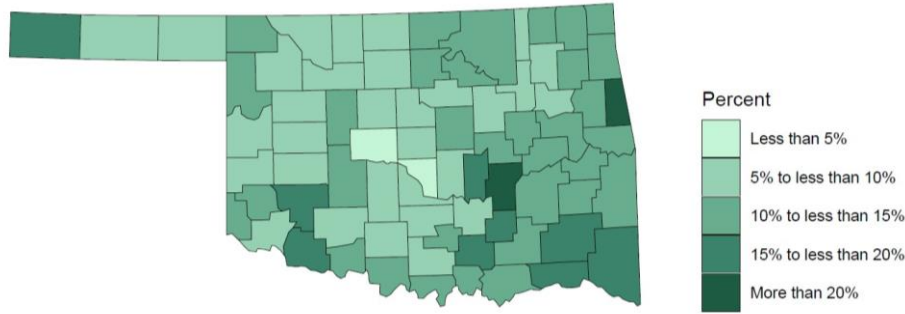
Rank	County	Fixed Home Internet Adoption Rate
68	Choctaw County	31.0%
69	Latimer County	30.6%
70	Adair County	30.3%
71	Johnston County	28.1%
72	McIntosh County	28.1%
73	Love County	27.9%
74	Pushmataha County	27.7%
75	Hughes County	27.3%
76	Nowata County	27.3%
77	Atoka County	22.3%

*Based on 2017–2021 five-year ACS estimates

These counties are predominantly rural and on tribal lands.

While much of the emphasis thus far has focused on access and adoption, inadequate access to computing devices can also inhibit internet use. Without devices, households have no incentive to subscribe to home or cellular internet service. Moreover, households without home internet or devices become reliant on CAIs like libraries and schools to fill the gap, which can be inconvenient (or unavailable entirely). Significant numbers of households lack internet-enabled devices, as shown in Figure O.

Figure O. Ownership of Computing Devices is Not Universal



Based on 2017-2021 five-year ACS estimates

Figure O above illustrates the percentage of households in every county that do not own any internet-enabled devices. These numbers derive from the 2017-2021 five-year estimates from the ACS. Similar to the adoption map, urban and urban-adjacent counties have the highest rates of device ownership. In Canadian County, only 4.1% of households lack a computing device; meanwhile, in Cleveland County, only 4.3% of households do not own an internet-enabled device. Other counties with high device ownership include Custer County (5% of households lack devices), Rogers County (5%), and Wagoner County (5.4%).

Table 9: Oklahoma Counties with the Highest Rates of Households without Devices

Rank	County	Percent of Households without a Computing Device
68	Tillman County	15.2%
69	Choctaw County	15.5%
70	Kiowa County	15.6%
71	Coal County	16.6%
72	Seminole County	17.8%
73	Johnston County	18.0%
74	Pushmataha County	18.7%
75	McCurtain County	19.6%
76	Hughes County	23.2%
77	Adair County	24.6%

Based on 2017-2021 five-year ACS estimates

By contrast, several counties in Oklahoma have large populations that lack household access to devices. Table 9 above identifies the 10 counties with the lowest rates of household computing device ownership. Again, many of these counties are predominantly rural and on tribal lands. Two counties (Adair and Hughes) have rates above 20% (24.6% and 23.2%, respectively), while other counties range from 15-20% of households without devices. Of note, several of the counties listed above also have the lowest internet adoption rates in the state. These include Hughes County, Pushmataha County, Adair County, Johnston County, and Choctaw County.

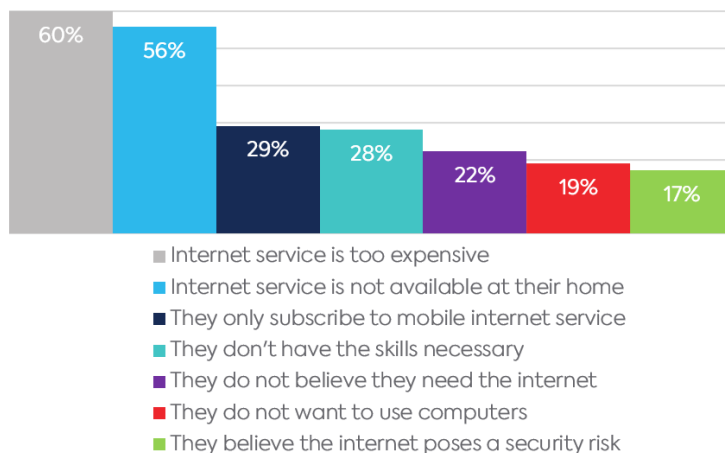
3.4.3 Broadband Affordability

The OBO lacks thorough, systematic data on the pricing of broadband service across the state, but the stakeholder engagement process brought up evidence that affordability is an important problem.

The OBO collected qualitative data on broadband needs and gaps from the population through the listening tour referenced earlier and described in detail in section 5.1. Participants were asked to identify the reasons that members of their community do not subscribe to home internet service; they could identify more than one factor that impeded subscriptions. Figure P below illustrates those results and underscores that the digital divide includes not only broadband availability but *affordability*.

Figure P. Reasons for Broadband Non-Subscribership

Why Do You Believe Some People Do Not Subscribe to Home Internet Service in Your Community?



The top concern amongst participants was internet service is too expensive; 60% of participants indicated that it was an issue in their community. Following that, 56% of participants suggested that home internet service is not available for everyone. An additional 29% expressed that residents forego home internet service in lieu of mobile internet service, and 28% of participants

identified digital skills as an important barrier to home internet adoption. Roughly 20% of participants cited the remaining options (i.e., they don't believe they need the internet, they don't want to use computers, and they believe the internet poses a security risk) as having a significant impact.

During the Oklahoma listening tour stops, moderators also asked participants to identify their top three priorities for the BEAD planning process. In essence, this question probes what these individuals thought should be prioritized by the state as the planning process continues. Statewide, most participants cited improved high-speed infrastructure as their primary concern. This concern likely reflects the lack of broadband internet access (25/3) in many rural areas. Following infrastructure, residents suggested that increased speed and reliability should be prioritized by the state. The third top priority for participants was making the internet more affordable — something that 60% of them identified as an impediment to subscribing across the state.

3.4.4 Broadband Access

For Oklahomans who lack home internet service, CAIs that provide broadband access to the public, through public access computers or free Wi-Fi hotspots, can mitigate the digital disadvantages. People who rely on smartphones and mobile data to get online might use public access points for data-intensive tasks such as downloading audio and video files or participating in an occasional Zoom meeting. CAIs can also help people get home internet service, since the easiest way to sign up for broadband, or to apply for the ACP, may be online. Even people with home internet access may turn to public access computers when they are out and about, or to use special-purpose software.

The OBO is working on a list of CAIs and plans to submit it to the NTIA as part of Volume 1 of the Initial Proposal, along with information about the connection speeds available at different CAIs.

3.4.5 Digital Equity

Figure P above shows that while affordability is the biggest reason other than access for people's failure to subscribe to broadband, digital skills are probably a factor as well, at least for some. Twenty-eight percent of listening tour participants identified lack of digital skills as a reason why some people in their communities don't subscribe to broadband.

Society is still deficient in standards and metrics for digital skills, so it's difficult to conduct any meaningful quantitative analysis of this anecdotally important aspect of the digital divide. The implementation of the Digital Equity Act grant programs in Oklahoma and elsewhere should yield better ways of understanding and measuring the problem.

4 Obstacles or Barriers

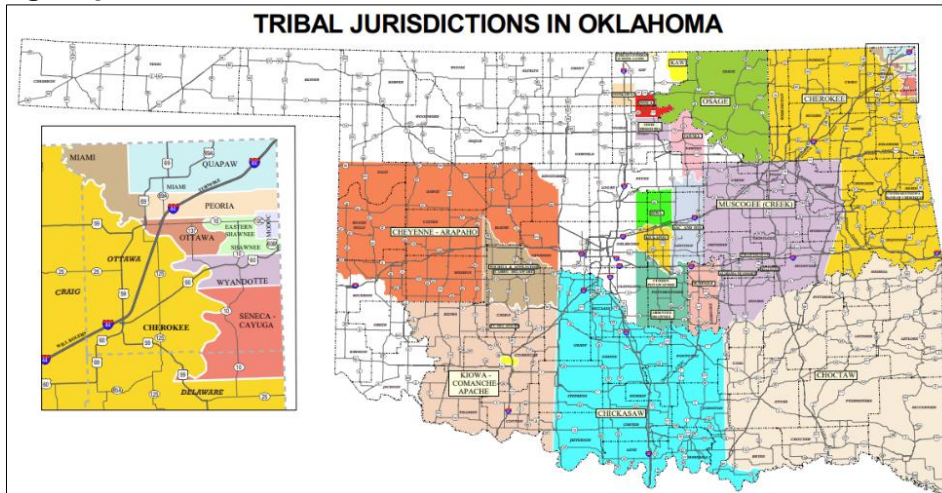
Throughout the United States, some barriers to broadband deployment, especially those related to low population density, continually recur. In rural areas, relative to cities, towns, and suburbs, households and businesses are spatially more dispersed, and fiber-optic cable and signals from towers serve fewer households for a given physical reach. This typically reduces the customer revenue from broadband services that can be provided by a given amount of equipment, making it difficult to cover operating costs, let alone provide adequate returns for private capital investments. While these challenges are fully applicable to Oklahoma, they are well known across the country and therefore don't need to be detailed here. Instead, this section focuses on three challenges that, although not unique to Oklahoma, are especially salient for the OBO:

- The challenges of deploying broadband in tribal areas;
- Distortion of the information environment by the competitive nature of the broadband industry; and
- State government capacity constraints.

Deploying Broadband in Tribal Areas

Oklahoma is home to 39 federally recognized tribal nations, each operating as a sovereign entity in the state. As shown in Figure Q, nearly half of the land in Oklahoma is tribal, and people identifying as Native Americans comprise 13% of the population, the highest share after Alaska, with the highest total Native American population after California. No two tribes share the same leadership, economic or infrastructure resources, requiring the state to account for all differences when preparing a universal access plan.

Figure Q: Most of Oklahoma is Part of Tribal Nations



Source:

<https://oklahoma.gov/content/dam/ok/en/oja/documents/10%2037%20Federally%20Recognized%20Tribes%20in%20OK.pdf>

While these differences allow us to highlight and celebrate the uniqueness of each tribe, they create a complex system of resources and programs that must be accounted for to fully connect the state diligently and effectively. With vast and varied differences, the tribal landscape highlights the ingenuity that will be needed to connect all Oklahomans. Broadband coverage gaps tend to be concentrated in tribal areas, so it follows that digitally disadvantaged Oklahomans are disproportionately Native American and/or live on tribal lands.

Oklahoma must consider, and adapt to, the vast and varied differences of tribal lands in its BEAD implementation.

First, although the state of Oklahoma has some responsibility in tribal lands and must include them in its pursuit of statewide broadband coverage, its activities in tribal areas must be coordinated with, and have proper consent of, duly constituted tribal governments. Broadband deployment may involve surveys, and special permitting, e.g., through tower construction or utility pole construction or trenching. Such activities need the consent of tribes with sovereignty over the lands affected. The process for securing such consent differs both from non-tribal areas and among tribal areas. This makes it challenging to design a program with statewide rules, especially when there is a need to conform to prescribed timelines.

Second, at least some — and perhaps many — tribes in Oklahoma are expected to tap into resources from the Tribal Broadband Connectivity Program (TBCP). The simultaneous rollout of BEAD and TBCP creates coordination challenges. It is, of course, undesirable from a policy and business standpoint, as well as seemingly contrary to BEAD rules, and probably will be contrary to the TBCP guidance as it emerges, to fund an area redundantly so that two or more federally subsidized ISPs deploy to the same locations. The main concern is not so much the waste of money as that competition in an area where demand was already limited may make one or even both networks commercially unsustainable.

With both programs being implemented at the same time, avoidance of redundant funding will require close coordination and information sharing. Information sharing can be laborious in the best of cases, but in this case, it also collides with a need for information control. Proper administration of high-dollar programs also requires prudent confidentiality about many points, to avoid conferring unfair advantages on some applicants for funding, and who gets access to more information relative to others who lack such access. The OBO wishes to avoid designing an implementation of the BEAD program in the State that depends on heavy information sharing by the tribes. Therefore, it is unclear how to avoid redundant funding of some locations.

How the Competitive Nature of the Broadband Industry Creates Challenges for BEAD Planning and Implementation

Another major challenge for BEAD planning in Oklahoma arises from the competitive nature of the broadband industry. Most of the knowledge needed for effective BEAD implementation resides with ISPs. Many ISPs have a generous passion for advancing connectivity in the state; however, ISPs are (a.) in competition with each other for grant funding and market share, (b.) need their revenues to exceed their costs, and (c.) must consider carefully how information that is shared with the state may filter out and impact their public image, fairly or unfairly. This makes them careful about what they say. As the OBO makes its plans for BEAD implementation, it must therefore be continuously soliciting information from organizations that potentially have

a large financial stake in the policy decisions, which the information that they are providing will influence.

The same challenge affects our federal agency partners. For example, the FCC National Broadband Map, which served as the basis for the state BEAD allocations that were announced on June 26, 2023, was informed by coverage information that was self-reported by ISPs and was not systematically and thoroughly checked by the FCC. While a challenge process was offered, participation in it was patchy. Incumbent ISPs may want certain areas to be considered either served or unserved, apart from the facts about the quality of connectivity available on the ground. Some incumbent ISPs may want an area to be considered served to keep out competition, even if their networks are inadequate. Other ISPs may want areas to be considered unserved to get grant money for upgrades, even if service meeting BEAD program goals is already available. In other cases, differences in reporting relative to facts on the ground may be driven by somewhat random differences in the decisions ISPs make about how to represent their coverage in the face of uncertainty. Whatever the reason, with such limited fact checking of self-reported coverage claims by ISPs, BEAD funding allocations will be heavily influenced by ISPs' decisions about how to represent their coverage.

As another example, consider the cost estimation exercise in section 5.6. In principle, the best source of information about actual costs to deploy fiber or fixed wireless to all locations across the state would be the broadband industry itself, which could make estimates based on experience. But industry players would probably engage in such cost estimation assistance only to the extent that they see a return on investment from such activities, e.g., in increased likelihood of winning grant funds. Both Oklahoma and our federal agency partners must rely on other, often less accurate approaches to estimation, at the cost of making determinations and decisions whose unsuitability may be obvious to ISPs in the areas involved.

As Oklahoma plans its BEAD grantmaking, the OBO must deal with the fact that ISPs can be expected to seek to maximize the grant funding for the areas they propose to serve, without considering the statewide need to economize scarce BEAD dollars by providing the minimum subsidy needed to close the business case for deployment projects. Ideally, the rules would be designed to force ISPs to compile true information about their expected deployment and operating costs and customer revenues, to mobilize as much private matching capital as they can reasonably justify investing, and only then ask for the minimum subsidy needed to cover the gap between what they're willing to invest and the capex costs of the project.

The OBO believes ISPs often provide accurate information merely from honesty or in the public interest, even when it may not be to their advantage. To avoid incentivizing misinformation, the OBO would prefer to "trust, but verify." Unfortunately, the OBO's ability to verify is often very limited, and it's often unreasonable to take information merely on trust. One of the biggest and most general obstacles to effective BEAD administration is the way the information environment in which BEAD planning and implementation must proceed is constantly distorted by the competitive nature of the broadband industry.

State Government Capacity Constraints

A third broad obstacle that we regularly encounter in BEAD planning and implementation is the limited capacity of state government to handle and skillfully manage an influx of federal funding

on the scale of the BEAD program, and with such complex rules attached to it. This challenge takes many forms. The OBO is quite new, with little institutional memory. It must operate in a framework of state government rules and procedures, from hiring to procurement to communications, that have evolved over many years to serve a set of routine state government functions and manage a certain number of resources. These factors combined push the limits of what state government processes can accommodate on a weekly basis.

The OBO staff are working with contracted support to rise to the challenge but face the daily reality of many incalculable risks related to the lack of needed expertise and skills and/or process constraints arising from the status as a new state government agency. Despite these inherent capacity constraints, the OBO will do its best to meet the NTIA's expectations at all points along the way.

5 Implementation Plan

5.1 Stakeholder Engagement Process

To fully engage with all members of the community, the OBO has utilized, or will utilize, a broad array of data collection and engagement methods. At the beginning of the process, the OBO traveled over 6,000 miles across Oklahoma on a “Let’s Get Digital” listening tour that included 19 separate locations. The OBO presented information to the public on the state of broadband expansion and asked participants to fill out surveys identifying common issues and areas of focus for further engagement. While this listening tour was taking place, the OBO also held consultations with all 39 Oklahoma tribes to gain their unique perspective. While many of the issues are like the rest of the state (affordability and access), the same outreach efforts and solutions are not necessarily applicable due to differences in cultural norms and organizational structure. More details on the OBO’s stakeholder engagement process are outlined below.

The next step in the stakeholder engagement process is to hold focus groups with each covered population, and with varying businesses and CAIs. At the same time, the OBO will distribute surveys to supplement the focus group information with broader data sets. Additionally, the OBO plans to continue: a bimonthly Digital Equity Working Group; Internet Service Provider Roundtables, and more tribal consultations throughout the grant process.

To monitor agreements and subrecipient progress, the OBO will hold weekly check-ins and in-depth quarterly meetings. This information will be aggregated and submitted to the Treasury Department in the OBO’s semi-annual reports. The OBO will also continue working with, and collecting data from, outreach partners on an as-needed basis.

Stakeholder Engagement Accomplishments to Date

The OBO developed and implemented an inclusive engagement model that provided opportunities for residents, organizations, and leaders across the state to provide insight into planning priorities. Leveraging existing structures, such as the OBGB and the OBEC, and expanding outreach through coordination with state agencies, local and regional governments, community anchor institutions, and community-serving organizations providing services to covered populations, the OBO gleaned a holistic understanding of broadband challenges, assets, and priorities across Oklahoma.

The stakeholder engagement process outlined below demonstrates the breadth of engagement across Oklahoma and the variety of mechanisms for outreach and engagement. Stakeholders in established advisory entities provided ongoing feedback and insights into broadband challenges and opportunities. Meaningful outreach and multiple participatory mechanisms allowed for comprehensive engagement and qualitative data collection from key groups, including covered populations. Quantitative data collection activities provided deeper understanding of the barriers and assets in the state.

Advisory Supports		
Broadband Governing Board	Broadband Expansion Council	Digital Equity Working Group
Participatory Mechanisms		
Tribal Consultations	Stakeholder meetings	Local and state government coordination
Listening tours	Industry Roundtables	Focus groups w/covered populations
Quantitative Data Activities		
Residential Phone Survey	Community Organization Survey	Data sets analysis

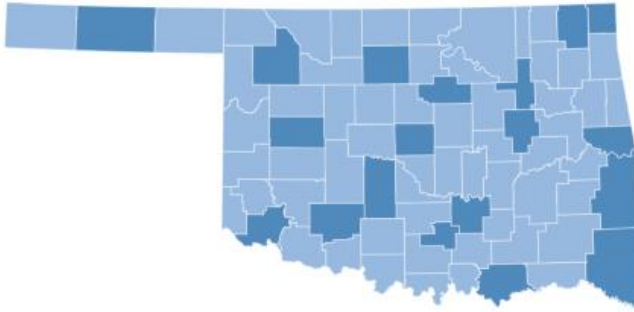
This work included identifying critical stakeholders with whom engagement on BEAD and DE priorities is essential to a holistic understanding of connectivity challenges and opportunities in the state.

The OBO will continue to build on its stakeholder engagement experience and evolving relationships to maintain a participatory policymaking and program administration process to the extent feasible, with the understanding that (a) decision input windows must sometimes close when the OBO has set a course and begun to take action, and also (b) the interest and willingness to participate of various stakeholder groups and organizations will wax and wane. Stakeholder engagement priorities will shift over the life cycle of the BEAD program, with program design, challenge process, subgrantee selection, project monitoring and project closeout all requiring different kinds of communication with and input from industry, local government, other state agencies and citizens.

Local Coordination Criteria

The engagement model the OBO developed to engage with stakeholders during the planning and implementation phases of the BEAD program aligns with local coordination criteria from the BEAD NOFO. While a full description of outreach activities occurs in this section, highlights from the strategies to address each of these criteria include:

- **Full geographic coverage** – The OBO visited 19 sites during its listening tour, with stops in all parts of the state. A map of visited counties is below.



- **Meaningful engagement and outreach to diverse stakeholder groups** – The OBO developed and engaged with a diverse group of organizations, governments, and leaders representing covered populations. Through focus groups, a statewide listening tour, survey collection, and interviews, the OBO learned about barriers to access, adoption, and use for diverse stakeholders. Additionally, the OBO hosted tribal consultations with tribal governments in the state.
- **Utilization of multiple awareness and participatory mechanisms** – The OBO leveraged digital and non-digital means of communication for education and outreach purposes. These mechanisms included meetings, surveys, emails, TV/radio/print interviews, social media, focus groups, and more to ensure that stakeholders could engage with the planning process and were informed of the OBO’s work.
- **Clear policies to ensure transparency** – The OBO operated transparently throughout the planning process, utilizing its website, email distribution lists, and monthly updates to the OBGB and OBEC to provide updates to stakeholders and promote opportunities to engage in the process. The OBO maintained and updated the outreach page on its website with information about listening tour stops, roundtables, and local coordination events. Listening tour stops were open to the public and media, and were promoted through social media, as well as statewide and local press releases.
- **Outreach and engagement of unserved and underserved communities** – The OBO prioritized outreach and made substantial efforts to engage with unserved and underserved communities. Entities representing these populations serve on the Digital Equity Coalition. The OBO conducted focus groups with underrepresented populations and ensured representative sampling of these populations in the residential survey. The OBO also specifically focused on unserved and underserved communities during these engagement efforts to better understand the places and people who will be most affected by the BEAD program.

Stakeholders

Having access to a reliable, affordable broadband connection is critical for Oklahoma residents and is a requirement for many governmental and private-sector activities. The OBO identified a wide range of stakeholders for outreach and engagement to demonstrate geographic coverage

and interaction with diverse groups, as provided by the local coordination requirements of the BEAD Program NOFO.

Key stakeholder groups include:

- State agencies
- Community anchor institutions
- Nonprofit and faith-based organizations serving covered populations
- Tribal governments
- Local and municipal government leaders
- Residents that lack access to affordable, reliable high-speed internet or the skills to use it in ways that improve their quality of life.

Advisory Supports

The Oklahoma Broadband Governing Board (OBGB), with nine members, oversees the work of the OBO. Members of the board include:

- Katy Boren, CEO, Oklahoma City Innovation District Inc. – Oklahoma City
- Mike Erhart, Managing Partner, Erhart & Associates LLC – Oklahoma City
- Fob Jones, Attorney, Fob F. Jones Law – Sulphur
- Jim Meek, District 9 Director, The Oklahoma Farm Bureau Inc. – Okmulgee
- Amanda Mullins, Managing Attorney, Amanda Mullins PLLC – Chickasha
- Matt Pinnell, Lieutenant Governor – Oklahoma City
- Todd Russ, State Treasurer – Cordell
- Russ Teubner, CEO, HostBridge Technology LLC – Stillwater

The Oklahoma Broadband Expansion Council (OBEC) advises the OBO and provides recommendations for policies that can improve, expand, and reduce the cost of high-speed internet in the state. Members of the council include:

- Mark Argenbright, Director, Public Utility Division & Consumer Services, Oklahoma Corporation Commission - Oklahoma City
- Darlene Brugnoli, Vice President Governmental Affairs, Verizon
- Jason Constable, Director, Regulatory Affairs, AT&T Corp. - Oklahoma City
- Representative of a wireless telecommunications provider with operations in Oklahoma and 24 other states
- Sachin Gupta, Director of Government Business and Economic Development, Centranet LLC - Stillwater
- Mike Hilliary, Chief Administrative Officer, Hilliary Communications - Lawton
- Ernie Martens, Mayor, City of Sallisaw - Sallisaw
- Stacie Pace, Associate Director, Canopy Healthtech - Owasso
- Mike Sanders, Executive Director - Kingfisher
- Josh Snow, President, Trace Fiber Networks LLC - Ada
- Robbie Squires, Director of Government & Regulatory Affairs, Cox Oklahoma Telecom LLC - Yukon
- Billy Frank Staggs, President, Chickasaw Holding Co. - Sulphur
- Daniel Webster, CEO, Northeast Oklahoma Electric Cooperative - Vinita



- Jerry Whisenhunt, General Manager, Pine Telephone Co. Inc. - Broken Bow
- Dr. Brian Whitacre, Professor of Agricultural Economics, Oklahoma State University, Department of Agriculture Economics - Stillwater

The Oklahoma Digital Equity Coalition provides insight on barriers to accessing and using affordable, reliable high-speed internet for covered populations.

The activities of these entities are further described in the partnerships section.

Participatory Mechanisms & Outreach Activities

The OBO engaged with stakeholders by utilizing multiple awareness and participatory mechanisms. Through these mechanisms, the OBO ensured the public was aware of ongoing planning efforts and could provide feedback to the OBO on connectivity challenges and opportunities. Key outreach platforms and mechanisms included:

- Statewide listening tour
- Focus groups
- Roundtables
- Tribal consultations
- Site visits
- Organizational and residential surveys
- Email updates
- Board meeting updates
- Press releases
- Social media
- TV, radio, and print interviews
- Partnerships with organizations across the state

This variety of engagement activities, with a combination of digital and in-person opportunities, provided stakeholders clear ways to share their connectivity priorities. Several of these mechanisms are described in more detail below.

Statewide Listening Tour

The OBO hosted a 19-session “Let’s Get Digital: Oklahoma Broadband Tour,” traveling the state and hosting public meetings in libraries, university campuses, veterans’ halls, and other local venues, to hear from communities about regional needs and priorities. The OBO visited the following communities:

- Weatherford (May 8, 2023)
- Stillwater (May 12, 2023)
- Vinita (May 15, 2023)
- Poteau (May 16, 2023)
- Broken Bow (May 18, 2023)
- Oklahoma City (May 22, 2023)
- Durant (May 23, 2023)
- Tulsa (May 24, 2023)



- Chickasha (May 26, 2023)
- Altus (June 2, 2023)
- Enid (June 5, 2023)
- Sallisaw (June 6, 2023)
- Miami (June 7, 2023)
- Sulphur (June 8, 2023)
- Lawton (June 9, 2023)
- Ada (June 13, 2023)
- Okmulgee (June 20, 2023)
- Goodwell (June 22, 2023)
- Woodward (July 18, 2023)

Understanding local context, including assets and success stories from the region, as well as pain points and needs, provided the understanding necessary to craft this plan. The tour incorporated interactive polling to collect quantitative data for analysis, aggregation, and comparison across the regions. Through guided discussion, participants elucidated key barriers, regional assets, and top priorities for the state. Several Broadband Governing Board members promoted and attended these events, often as co-facilitators.

Outreach to local and regional governments, nonprofits, and CAIs ensured diverse participation and reach to covered populations. An outreach toolkit, with sample social media, email/newsletter language, and flyer, allowed organizations to promote these events within their networks. The OBO staff participated in multiple regional and statewide media interviews to promote the listening tour and to ensure that residents were aware of the meetings.

Overall, 299 Oklahomans participated in one of the listening tour stops. Covered population representation at the tour was as follows:

Aging individuals	40.4%
Incarcerated Individuals	12.7%
Veterans	32.4%
People with disabilities	31.8%
Individuals with a language barrier	28.4%
Racial and ethnic minorities	33.8%
Individuals who reside in a rural area	56.2%
Low-income individuals	42.1%

Critical stakeholders to BEAD program implementation, including ISPs, local governments, and CAIs, attended these regional events to share their perspectives on connectivity challenges,

opportunities, and current and planned partnerships. Representation by organization type on the tour was:

Representing an internet service provider	24.7%
Representing a government agency	19.4%
Attending as a resident interested in home internet news and service options	15.4%
Representing a for-profit business	12.0%
Representing a nonprofit organization	8.4%
Other	5.7%
Representing a college, university, or other institution of higher (post-secondary) learning	5.7%
Representing a library	2.7%
Representing a tribal government	2.7%
Representing a hospital, doctor's office, or other health care provider	2.0%
Representing a K-12 school or school system	1.7%

The OBO, as a new state agency, leveraged this listening tour to educate communities about the work of the office, make introductions to key leadership and staff, and build relationships with local networks to support the OBO during the planning and implementation phases of the Digital Equity Plan.

Additionally, the OBO collected quantitative and qualitative data from participants, allowing for identification of key barriers and challenges by region, as discussed in section 4.

The listening tour highlighted regional assets and opportunities to expand digital opportunity across the state. The top priorities statewide for BEAD and DE work include:

Priority #1	Improved high-speed infrastructure
Priority #2	Increased speed/reliability of internet connections
Priority #3	Making internet service more affordable
Priority #4	Upskilling and workforce development
Priority #5	Improved access to public computing centers and public Wi-Fi

Tribal Consultations

Over the course of April through August 2023, the OBO engaged all 39 tribal nations with communications and invitations to attend tribal consultations. Eight in-person, individual tribal consultations were held, along with two statewide tribal consultations on May 25, 2023, which gleaned important insights into the unique perspectives, needs, and challenges of Oklahoma's tribal nations. Key takeaways from these consultations include:

- Within the tribes, there is a digital divide between some who have tribal-owned ISPs, and those who do not, and some who have made connections with workforce education resources and those who have not (OSU IT and Career Tech were named as available resources at several listening tour stops). Many tribes desire more fiber technicians and installers.
- Of the tribes that do not have tribal-owned ISPs, they wish to work cooperatively and in collaboration with existing ISPs in their territories.
- The cost of laying fiber is very expensive (this is something we have heard from ISPs across the state at most listening tour stops).
- Several of the tribes do not have sufficient grant writing experience in-house, which led to their first attempts at securing TBCP funding being denied.
- Several tribes desire to use BEAD funding to connect non-tribal households.
- Some tribes expressed concern for ongoing equipment and maintenance of infrastructure into the future.
- Digital equity needs expressed include:
 - Home computer assistance;
 - Digital navigators in libraries, tribal community centers, or CAIs to provide digital skills training, and/or tech mobiles that could visit smaller communities to train people;
 - Telehealth resources; and
 - Remote work opportunities.

In addition, the OBO shared an earlier draft of this Five-Year Action Plan with all the tribes in Oklahoma, asking for feedback prior to submission. Tribal feedback was deemed critical because most unserved and underserved locations are in tribal jurisdictions, and tribes have access to the TBCP funding stream with which BEAD will need to coordinate.

Tribal feedback included the following:

1. Cherokee Nation sought to clarify the prioritization of unserved versus underserved and fiber versus other technologies and stressed that “there need to be extremely clear rules surrounding the whole idea of competition and priority technologies.”
2. Cherokee Nation sought clarification about the BEAD program's 25% match requirements.
3. Cherokee Nation suggested that a complete list of Tribal Historic Preservation Office (THPO) contacts would be helpful to include.
4. Cherokee Nation drew attention to its efforts to promote digital literacy, notably an AT&T Connected Learning Center to open soon in Catoosa, an on-site ACP specialist, and 35 public Wi-Fi access points.

5. Choctaw Nation stressed that in their experience, carriers are unwilling to invest in communities with fewer than 200 homes, at least for wireline or fiber-optic service.
6. Without internet infrastructure investments, Choctaw Nation foresees that towns will not be able to grow into profitable, self-governing municipalities.
7. Choctaw Nation mentioned the rising cost of fiber-optic construction but hopes that BEAD funding will make it viable to extend coverage areas nonetheless, while further enhancing the capabilities of wireless providers.
8. Choctaw Nation expressed an intention to be flexible and support multiple carriers, both those currently providing service and others not yet identified, while at the same time planning to “strictly enforce our support letter process,” with a warning that “we will not be able to support all carriers if their intentions are not well-defined and well-documented.” They support carriers that provide reliable, affordable, and competitive internet services.
9. Choctaw Nation is working to build middle mile infrastructure to areas that remain unserved, of which it would remain the owner, while enabling carriers to “provide services to those areas without depending on additional investment to complete their ROI model.”
10. Choctaw Nation stresses the need for funded broadband deployers to “ensure that they can generate profitable revenue.”
11. Overall, the main strategic options identified by Choctaw Nation for closing the digital divide are (a) encouraging multiple carriers, (b) middle mile infrastructure, (c) becoming a service provider, (d) prioritizing unserved areas, (e) taking a long-term investment perspective, (f) flexibility in partnerships, (g) seeking funding opportunities, (h) working to provide information for environmental review, (i) supporting digital literacy, and (j) working with all the communities in southeast Oklahoma.
12. Chickasaw Nation stressed the importance of accurate identification of unserved and underserved areas, leveraging the challenge process and the knowledge base of the tribal government, and empowering them with a process for requesting reevaluation of an area’s degree of available broadband service.
13. Chickasaw Nation recommended prioritizing schools and educational institutions, health care facilities, public libraries and community centers, elderly populations, low-income residential areas, and business districts.
14. Chickasaw Nation stresses the need for meaningful consultation, including “striking a careful balance between meeting federal permitting standards and supporting timely project deployment.”
15. Chickasaw Nation stressed that “early coordination with Tribes is essential.”
16. Chickasaw Nation stated its willingness to “share information regarding recently awarded federal funding for broadband infrastructure deployment within Chickasaw territory with the State to assist in avoiding duplication of funds in the same service area.”
17. Critically, as highlighted in the Executive Summary, Chickasaw Nation advised that “the State should require eligible entities [here meaning ISPs applying to be BEAD subgrantees] to obtain a Tribal Resolution of Consent for projects proposing to serve Tribal lands **before** funds are awarded” (their emphasis). They added that “requiring [ISPs] to submit a Tribal Resolution of Consent with their application for funding is the

most efficient option, allowing Tribes to negotiate with service providers before funds are allocated.”

18. Chickasaw Nation reported on its receipt of funding from (a) the NTIA’s Tribal Broadband Connectivity Program and (b) the Economic Development Administration’s (EDA) Public Works and Economic Adjustment Assistance Program.
19. Chickasaw Nation highlighted its work in digital literacy.
20. Osage Nation highlighted the need to recognize the role of tribal entities, in addition to private ISPs, nonprofits and coops, in closing the digital divide.
21. Osage Nation also stressed that one of the challenges in broadband solutioning for tribal nations is the large disparities among tribes with respect to capability, knowledge, and experience in the area of broadband and telecommunications.

More recently, the United Keetoowah Band of Cherokee Indians in Oklahoma also provided extensive comments, which the OBO will review in detail and consider during the Initial Proposal drafting process.

Industry Roundtables

Internet service providers and other companies in broadband-related industries are important constituents in the work of ensuring affordable internet access for all. The OBO hosted an industry roundtable on June 15, 2023, to engage with ISPs on key aspects of BEAD and DE planning. Thirty representatives joined the call, with a provider type breakdown of:

- Telephone company - 20%
- Electric cooperative - 12%
- Investor-owned utility - 16%
- Private business - 48%
- Other - 4%

The roundtable engaged on various BEAD policy decision points, providing feedback to the OBO on workforce priorities, low-cost options, and ways to ensure universal coverage through implementation of the BEAD program.

The OBO intends to continue this engagement with monthly roundtable discussions open to all ISPs.

Local Coordination Workshops

The OBO hosted two local coordination meetings during the planning process. The OBO, in partnership with NTIA, hosted an “Internet for All: Oklahoma Local and Tribal Nation Coordination Workshop” in Oklahoma City on January 19, 2023. The event brought together key participants in Oklahoma from federal, state, tribal, and local governments, industry, and other important stakeholders to discuss coordination on broadband efforts as the state prepares to receive significant broadband funds from the Infrastructure Investment and Jobs Act.

The OBO hosted a follow-up event in Tulsa on May 24, 2023, to provide updates on workforce priorities, tribal nation engagement, and funding programs. At this event, two roundtables were held: workforce and tribal coordination. A key takeaway from the workforce panel highlighted the opportunity available for Oklahomans to receive training as fiber technicians, yet ISPs lack

enough funding to hire these highly trained individuals upon completion of their training programs.

Ongoing Engagement

The OBO plans to continue stakeholder engagement and outreach through many of these established advisory groups and communications channels. This will ensure ongoing awareness of, and participation in, the OBO’s work from stakeholder groups, local governments, tribal nations, and communities.

5.2 Priorities

In accordance with the guidance in the BEAD NOFO, the OBO will implement the BEAD program to target three objectives, in order of priority, as follows.

Table 10: Priorities for Broadband Deployment and Digital Inclusion

Priority	Description
1. Deploy 100/20 broadband to all unserved (<25/3) areas	Establish agreements with ISPs obligating them to make deployment commitments, in return for commitments of BEAD grant funding by the OBO, which jointly comprise a plan to make broadband service at 100/20 speeds available at all the locations that currently lack access to internet service, even at 25/3 speeds. Achievement of this objective will result in universal broadband access at 25/3 speeds .
2. Deploy 100/20 broadband to all underserved areas	Establish agreements with ISPs obligating them to make deployment commitments, in return for commitments of BEAD grant funding by the OBO, which jointly comprise a plan to make broadband service at 100/20 speeds available at all the locations that currently have access to internet service at 25/3 or faster but lack access at 100/20 speeds. Achievement of this objective will result in universal broadband access at 100/20 speeds .
3. Deploy gigabit service to all CAIs	Ensure that all schools, libraries, and other “community anchor institutions” have access to broadband service at gigabit symmetrical speeds.

Note that the definition of “community anchor institutions” continues to be refined but will be clarified in a definition and list as part of Volume 1 of the Initial Proposal.

While the OBO intends to target these priorities as instructed, their achievement is contingent on the sufficiency of BEAD funds, a factor that remains to be proven. As discussed above, a first pass, back-of-the-envelope calculation of the BEAD allocation per unserved or underserved location yields a value of just \$2,333 per location. The number will be higher when scheduled deployments under RDOF and other federal programs, as well as the concurrent awards of SLFRF/OBIG and CPF money, are considered. Still, it’s likely that the ratio of broadband funding to BEAD targetable locations will be well below the typical subsidy per location that past

broadband grant programs have needed to provide in return for broadband deployment commitments from industry. Also, costs are likely to rise rather than fall, both because of macroeconomic and broadband deployment supply chain conditions, and because past broadband grant programs have usually benefited from focusing on “low-hanging fruit,” while the universal service objective of BEAD will push grant funding into areas with inherently higher costs. All this casts doubt on whether universal broadband access in a robust sense is achievable.

The BEAD program priorities are hierarchical, such that priority #1 must be on track before Oklahoma turns to priority #2, which in turn must be on track before priority #3 begins. This prioritization scheme reflects a policy decision related to the severity of different needs and the importance of meeting them. At the same time, since it will take years to carry out the network construction required to achieve each priority, it is undesirable and incompatible with BEAD timelines to wait until priority #1 is completely achieved before Oklahoma turns its attention to priority #2. From this prioritization scheme, it follows that if, as seems likely, Oklahoma’s BEAD allocation does not prove to be sufficient to achieve all BEAD program objectives, priority #3 may be sacrificed, and perhaps priority #2 as well. Even priority #1, based on reasonable extrapolations and projections, may exceed the reach of the Oklahoma BEAD allocation.

To pursue these priorities, the OBO proposes to design its BEAD implementation such that an initial round of grantmaking will target only unserved areas (priority #1) until a set of grant-funded projects have been provisionally secured which, taken together, will comprise a full solution to statewide broadband coverage in unserved areas. This first funding may involve negotiations to fill in any gaps in the deployment plans that result from a lack of applicants, failure of applicants to qualify, failure of applicants to agree to adjustments of project footprint necessitated by the de-conflicting of overlapping projects, etc.

If the OBO is successful in achieving a statewide project portfolio sufficient to meet priority #1, without committing the entirety of the BEAD budget, it will decide that the first BEAD priority is on track to be achieved, and there are BEAD funds left over for the pursuit of priority #2. This determination will trigger another round of grantmaking, targeting priority #2, which will ideally proceed until Oklahoma has a full statewide solution to the broadband access problem in underserved areas, although it is likely that this objective will not be achievable. But if funds do prove sufficient, Oklahoma will decide that the second BEAD priority is on track to be satisfied. If, at that point, there are still funds left over, Oklahoma will initiate a third round of grantmaking that targets community anchor institutions that lack gigabit service. If funds are still available after all community anchor institutions enjoy gigabit service, Oklahoma will devote the remaining funds to organizations and activities defined as fundable under the separate Digital Equity Plan.

Many other priorities are of interest to the OBO, including expanding digital opportunity for rural residents and those the 21st-century digital age has so far left behind, helping tribal communities, helping the physically disabled, helping veterans to find jobs, helping mental health organizations to improve telehealth, and helping nonprofits get strong connectivity proportional to the important roles they play. All these varied purposes, however, do not need to be separately targeted, since they will all be advanced by universally available broadband access combined with a low-cost option to make internet service affordable to those in need.

Since the BEAD program is publicly associated with the headline objective of achieving universal broadband access, or “internet for all,” it is worth unpacking the senses in which this objective might be achieved in different scenarios. If priority #1 is achieved, Oklahoma will have universal broadband access at 25/3 speeds. If priority #2 is achieved, Oklahoma will have universal broadband access at 100/20 speeds. If priority #1 or #2 is achieved *without* the OBO having to fall back on funding projects using unlicensed fixed wireless or satellite, then Oklahoma will enjoy universal broadband access at 25/3, or 100/20, speeds, respectively, by “reliable” broadband technologies, as defined in the BEAD NOFO. But it’s likely that the OBO will need to set the Extremely High Cost Per Location Threshold at levels that make “reliable” broadband technologies too expensive to deploy in some locations, so that the OBO will need to fall back on unlicensed fixed wireless and/or satellite to achieve its universal broadband access goals in any sense. In that case, Oklahoma will *not* enjoy strictly universal broadband access by means of “reliable” technologies, and the universal broadband access that is available from satellite will predate and be independent of the BEAD program, so that universal broadband access by any technology will not represent a BEAD program policy outcome so much as an independent outcome of technology investments by private companies.

In view of these facts, the OBO may try to downplay the goal of “universal broadband access” to manage the expectations of the public.

5.3 Planned Activities

To achieve the priorities defined in section 5.2, Oklahoma will execute a competitive broadband grant program designed to target universal broadband access while stretching taxpayer dollars. This will involve, above all:

1. Determining the set of locations that need to be targeted by the program to achieve the objective of universal broadband access.
2. Defining the subgrantee selection process by means of which Oklahoma will select subgrantee ISPs, whose approved and funded projects will comprise a solution for universal broadband access.
3. Transferring funds to the selected subgrantees and monitoring their activities to ensure that they carry out their obligations.

At this stage, the OBO is not proposing a fully executable broadband grant program. That will be the task of the Initial Proposal, of which Volume 1 will define an initial target list and a process for correcting it through challenges, while Volume 2, which may be submitted later than Volume 1, will fully define the application review and subgrantee selection process. However, many principles can be articulated at this stage, including the following:

1. Get the right target locations.

Since the BEAD program is the best chance in the foreseeable future for unserved and underserved areas to get broadband, it’s critical that the whole state be mobilized to alert the broadband office to any coverage gaps that do not show up in the FCC National Broadband Map. At the same time, the OBO wants to avoid overbuilding any existing government-funded broadband deployment project by excluding from BEAD eligibility any areas where funded deployment commitments exist. The OBO appreciates the

ongoing assistance from the NTIA and FCC in identifying already funded areas and plans to work with NTIA to utilize and ensure the accuracy of the data provided.

2. Define a subgrantee selection scoring rubric.

The subgrantee selection process should give weight to a variety of factors, including (a.) the “primary” (borrowing the language of the NOFO) factors of minimum BEAD program outlay, affordability and fair labor practices, (b.) the “secondary” factors of speed to deployment and, when non-fiber networks are under consideration, speed and network performance, and potentially also (c.) the “optional” factors of equity workforce development and job creation, open access, and local and tribal coordination.

The subgrantee selection factors in the BEAD NOFO, though they can be supplemented, seem comprehensive. But it remains to define the subgrantee selection factors in quantifiable ways, as objectively as possible, and to assign weights to them. This work will be performed in the coming months and result in a “rubric” that can be used to compare the traits of applications and select subgrantees in cases where multiple ISPs offer to serve the same area. The rubric should make grantmaking competitive, and spur ISPs to improve their offers in terms of the quality of infrastructure deployed, the affordability of the plans they offer, the amount of private matching capital they will raise, the speed with which they will deploy, and other dimensions of project quality.

3. Define subgrantee selection gating criteria.

In addition to selection factors, the OBO will define detailed “gating” criteria to determine which companies will be considered for grant awards. In defining the gating criteria, the OBO will bear in mind both (a.) that a more participatory and competitive process is fairer and will tend to get better deals for taxpayers, and (b.) that the BEAD program will fund deployments over several years to build networks that should last for decades, so it would be imprudent to entrust these funds and responsibilities to organizations with limited capacity, stability, or demonstrable commitment to providing reliable, durable residential telecommunications services. Gating factors will include financial stability and broadband experience.

4. Determine the Extremely High Cost Per Location Threshold.

A key feature of the subgrantee selection process envisioned by the BEAD program is the “Extremely High Cost Per Location Threshold,” which regulates the degree of fiber prioritization in the BEAD program. The grant subsidy per location is a variable that can be calculated for any incoming proposed grant project, by dividing (a.) the grant requested by the applicant by (b.) the number of unserved and underserved broadband serviceable locations in the area that need to get service.

The threshold defines the maximum level of this variable (a.) at which end-to-end fiber projects cease to get sole consideration and other “reliable” broadband technologies are considered, and (b.) at which all “reliable” broadband projects cease to get sole consideration and non-“reliable” projects become eligible for funding.

The BEAD NOFO suggests that, in principle, the threshold should be set at the level that secures the maximum amount of end-to-end fiber deployment consistent with achieving universal broadband access. Since there are many sources of uncertainty in play, and since the NOFO also has other goals such as generous wages for broadband deployment workers and affordable service for needy broadband customers, it's not clear that a strictly "scientific" determination of this policy variable is possible.

In determining the Extremely High Cost Per Location Threshold, the OBO will look to emerging guidance provided by NTIA through the Eligible Entity Planning Toolkit, but initial efforts to form a tentative plan to set the Extremely High Cost Per Location Threshold were revealing. Oklahoma's allocation of \$797,435,691.25, divided by the estimated number of unserved and underserved locations statewide as estimated in Volume 1 of the Initial Proposal, which early analyses estimate at 341,790, yields a preliminary estimate of average BEAD funding per eligible location of only **\$2,333**. This would be a disappointingly low value at which to set the Extremely High Cost Per Location Threshold, yet if the Threshold is set higher, that would seem to risk failure to meet the goal of universal broadband access, unless substantial savings could be achieved in the subsidy cost per location of deployment to substantial areas. The OBO anticipates that the actual subsidy per location realized through a competitive process would sometimes be lower than \$2,333, largely due to ISPs offering lower cost deployments and private matching capital. Also, some currently unserved and underserved locations will get service through the RDOF, CPF, or OBIG programs. Against this, Oklahoma needs to save money in the relatively easy-to-serve areas to have funds available for areas where costs are higher, or where a lack of competition weakens the state's negotiating position and obliges it to pay more than the threshold. Also, the OBO wants to allow for rubric factors other than minimizing the BEAD outlay to steer BEAD funds toward projects that are more expensive but appealing for other reasons. A relatively low value of the Threshold will give the state more flexibility and maximize the likelihood that the state can get at least some broadband solution to all or nearly all unserved locations. These considerations should be borne in mind as the OBO and NTIA work together to manage expectations and live up to the prescribed BEAD priorities.

The OBO welcomes feedback from the NTIA and the public on whether this value is too high or too low, and if so, how to justify a different determination.

5. Ensure that BEAD subgrantees provide the required match (if applicable).

In addition to rewarding lower subsidy costs through the prioritization scheme and the rubric, the BEAD program requires a 25% match. The OBO will determine whether an applicant meets the 25% match requirement by examining (a.) the total capex cost of the network (CAPEX), and (b.) the grant subsidy request (GRANT) and applying the formula:

$$\text{MATCH} = (\text{CAPEX} - \text{GRANT}) / \text{CAPEX}$$

Applicants should provide proof that they have access to the financing to cover any proposed match, in the form of a letter of credit as required in the BEAD NOFO. The OBO tentatively plans to conduct an initial round of grantmaking in which no project is fundable where the match percentage is below 25%. After that, areas where no projects have been awarded for evidence of an inherently high-cost character, and if that is confirmed, a second round of grantmaking in which the match will be reduced or waived will be conducted, and the state will work through outreach to and negotiation with specific ISPs. Where the match is waived, heightened scrutiny will be needed to establish the *ex post* commercial sustainability of the network, since the unwillingness of a subgrantee to put significant skin in the game suggests that they see a poor ROI at best, and may find, post-construction, that the network stands to lose money and is not worth maintaining.

6. Define a process for adjudicating geospatial competition and de-conflicting overlapping projects.

The competition among BEAD subgrantee candidates is complicated by the fact that proposed funded service areas may overlap in complex ways. The goal must be to fund exactly one project — no less and no more — for every unserved or underserved broadband serviceable location in the state. It's unlikely that it will be possible to achieve this through any combination of projects fully funded for their entire proposed funded service areas. Instead, the OBO will need a way of *partially* funding projects for *part* of their proposed funded service areas. However, it can't be taken for granted that any proportional reduction of footprint and funding for a project will be acceptable to the project proposer, because the project may have overhead costs that don't scale with project size, so that a business case that succeeds for a whole project will fail for a sub-project. These issues lead to many complexities that the OBO will need to find a way to navigate to efficiently identify and fund a set of projects that achieve universal broadband access. The OBO will look to multiple sources, including industry advice, sophisticated analysis, best practices from other states, and emerging NTIA guidance, to identify the best solutions to these problems.

7. Define the low-cost option that BEAD subgrantees in Oklahoma will be required to offer.

The BEAD NOFO requires the state to define a "low-cost option" that BEAD subgrantees will be required to offer in return for receiving BEAD grant funds. The OBO will seek to define the low-cost option in an industry-friendly way to maximize participation in the Oklahoma BEAD program and facilitate long-term viability for each project. In addition to whatever low-cost option is defined, the ACP, participation in which will be a requirement for BEAD subgrantees, will contribute to broadband affordability for many low-income Oklahoma households.

8. Compile the outcomes of the BEAD subgrantee selection process into a Final Proposal.

When Oklahoma has achieved a comprehensive allocation of BEAD funds to ISPs in return for projects comprising a statewide plan for universal broadband access (at 25/3 or 100/20 speeds), this plan will be compiled into a Final Proposal for submission to the

NTIA. Upon approval of the Final Proposal and release of all BEAD funds, the state will award the BEAD funds to subgrantees as planned.

9. Monitor the construction of BEAD-funded networks.

Between release of funds, expected in early 2025, and four years later, the OBO will monitor construction of networks. Projects that committed to early completion of deployments in return for extra points in the scoring rubric will be held accountable and required to pay penalties if they fail to achieve the planned early deployment. If ISPs appear to be falling short and are not on track to achieve their deployment commitments, the OBO will consider intervening, clawing back grant funds, and exploring ways to award the funds to other ISPs instead.

10. Close out projects after confirming that the promised broadband services are available.

When any BEAD subgrantee completes its network and is actively marketing the newly available broadband service to residents of the project footprint, the OBO will begin the project closeout process. The OBO anticipates, subject to funding availability, that this process will include both desktop research to confirm that the promised service is available and being advertised, and selective physical inspection of infrastructure to confirm that the subgrantee can deliver the promised service.

5.4 Key Execution Strategies

Successful achievement of universal broadband access using BEAD funding will depend critically on minimizing, or at least heavily restraining, the grant cost per location connected. This is critical because, while the total infrastructure investment cost to achieve universal access by “reliable” broadband technologies at 100/20 speeds is difficult to estimate, it clearly exceeds the capex cost of deploying to all broadband serviceable locations with the best available technology, even if deployment is conducted in the most cost-effective way. Oklahoma will therefore need to mobilize private capital to supplement BEAD broadband grants. Oklahoma will aim to make BEAD grants that are *just large enough to close the business case* for deployment, while incentivizing ISPs both (a.) to conduct deployment cost-effectively and (b.) to contribute as much private matching capital as possible for a decent return on investment.

To see how this works, consider the scenario shown in Figure R, in which an area is unserved because prospective customer revenue is inadequate to justify private, unsubsidized deployment.

Figure R. Good Leveraging of Private Capital

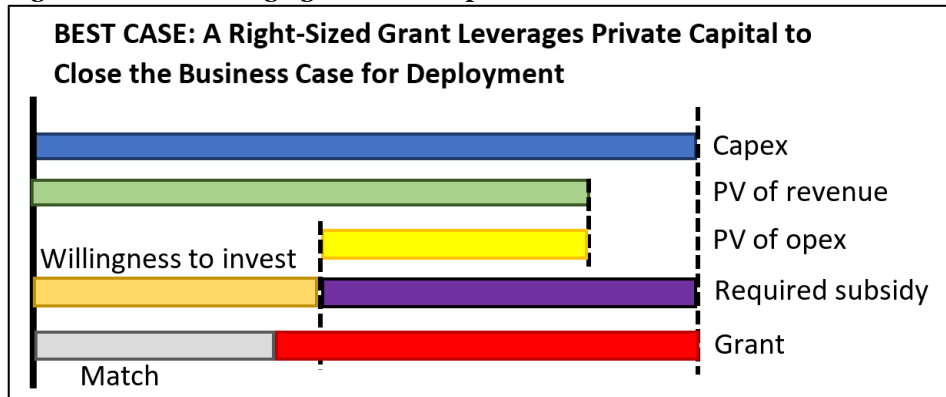


Figure R shows (a.) the **capital expenditure (capex)** required to build networks that serve the area using “reliable” technologies and achieving 100/20 speeds, (b.) the **present value (PV) of customer revenue** that an ISP can reasonably expect to earn post-deployment, and (c.) the **present value (PV) of operating and maintenance expenditures (opex)** that will be required to keep the network operational over time.

From these three values, two more are derived.

First, the **willingness to invest** is calculated as the difference between PV of revenue and the PV of opex. The willingness to invest is, in principle, the maximum amount that an ISP would be willing to invest privately to build the networks the area needs and secure the customer revenue that it can afford. The willingness to invest is less than the capex. That is why, in this scenario, there is no business case for unsubsidized deployment, and the area has remained unserved.

Second, the minimum **required subsidy** is calculated as the difference between capex and willingness to invest. The required subsidy represents the minimum amount of money which, in principle, would need to be provided in subsidy funding to a private ISP to close the business case and make it willing to invest. Less than the required subsidy would make the project unprofitable and result in a failure of ISPs to invest. More than the required subsidy would result in a windfall for the private ISP but would represent a poor use of funds for the state.

Figure R is conceptual, but it captures the state’s central objective of efficiently deploying BEAD funds to secure a great deal of deployment cost-effectively, and using subsidies to induce private sector investment without being channeled into excessively high profits for the private ISPs that build the networks. Oklahoma will seek to design a BEAD program implementation that minimizes subsidies and maximizes deployment through efficiently leveraging subsidies.

Three major strategies will be utilized to economize BEAD program outlays and make deployment subsidies cost-effective:

1. **Limit allowable expenses.** The OBO plans to examine budgets as part of the grant review process, and later to monitor subgrantee activities and spending during the construction phase, to ensure that BEAD grant funds are spent only on project-related

capex costs, and not on opex, profit, or cross-subsidizing other operations. This restriction limits the scope for companies to profit by demanding excessive subsidies.

2. **Competition.** The OBO hopes to foster robust participation in the BEAD program, so that in many to most areas of Oklahoma, there are multiple ISPs submitting grant applications and competing to serve the same areas. ISPs' awareness that they are competing for a limited pool of funds, and that minimum BEAD program outlay will be an important factor in determining the state's decision, should induce them to plan their projects in cost-effective ways, and to mobilize substantial private capital to get their subsidy requests down.
3. **Negotiation.** In some cases, the OBO anticipates negotiating with ISPs to bring their grant requests down and/or expand their project footprints. The BEAD program does not anticipate extensive use of negotiation. Moreover, negotiation is problematic because the state will typically not have enough information about private ISPs' cost structures, revenue expectations, and access to capital to anticipate how low they're willing to go on subsidy demands without exiting the program. But the OBO anticipates that some negotiation scenarios will nonetheless arise, e.g., when competitive grantmaking gets no project proposals for certain locations, or when overlapping projects need to be geospatially de-conflicted.

More details about how Oklahoma will seek to restrain the subsidy cost per location and extend the reach of the BEAD funding to get all locations served will be forthcoming in the Initial Proposal (Volume 2).

Post-award, the OBO plans to require regular, informative, but not-too-burdensome reporting on the ongoing progress of network construction, availability of service to consumers, and expenditure of grant and match funds. To the extent possible, monitoring procedures will be announced in advance, striking a careful balance between *ex post* flexibility and *ex ante* transparency, and making sure to reward truthful ISPs and deter any deliberate deception.

5.5 Estimated Timeline for Universal Service

As discussed in section 5.2, the OBO wants to be careful with promises of universal *access*, let alone universal *service*. Even today, Oklahoma enjoys universal broadband access at 25/3 if all technologies are considered, thanks to the reach of satellite internet service. It's unlikely that BEAD funds will suffice to achieve strictly *universal* access at faster speeds or with "reliable" technologies, although the OBO does look forward eagerly to connecting tens of thousands of Oklahomans to life-changing improvements in their internet service options.

The most relevant timelines to mention here are:

- The timeline of the BEAD program itself; and
- The statutory timeline of the OBO itself, as constituted by its enabling legislation, HB 3363 of 2022.

As far as the OBO understands, BEAD funds are likely to start flowing in 2024 at the earliest, more likely in 2025 after the Final Proposal is approved. ISPs will have four years to build, with a possible one-year extension. The BEAD program will therefore target completion of funded networks in 2029, or perhaps 2030, and then sunset.

The OBO, however, is not expected to exist by that time. It is scheduled to sunset, as an office, on June 30, 2028. We therefore propose to accelerate the BEAD program by about a year, and make all grants require project closeout sometime early in 2028 so that the OBO can verify network completion before it shuts down its own operations. This accelerated timeline might have the advantage of getting some Oklahomans improved broadband service a little sooner, but it makes the achievement of universal broadband service more challenging.

The OBO anticipates that there may be a need for ongoing state broadband planning after the statutory sunset date, necessitating either an extension of the OBO's operations, or a transfer of some of its functions to other state agencies.

5.6 Estimated Cost for Universal Service

The market leader in estimating the cost to public agencies of subsidized construction of broadband networks in unserved and underserved areas is CostQuest Associates. The OBO has been informed that CostQuest is under contract with the NTIA to provide cost estimates per location nationwide for use in BEAD planning. However, the OBO has also been alerted that CostQuest's cost data will not be made available to the states until August 2023, at a point in time so close to most states' deadline for delivering the Five-Year Action Plan to the NTIA that it is not reasonable to expect this data to be incorporated into the plans. Under these circumstances, it does not seem prudent for the OBO to produce cost estimation numbers that would be less well-grounded and authoritative than those of CostQuest and would likely cause confusion if they circulated in competition with the CostQuest estimates. Instead, the OBO will await the CostQuest data and use it for broadband planning purposes, such as potential refinement of the Extremely High Cost Per Location Threshold, the determination of the weight to be placed on Minimum BEAD Program Outlay in the subgrantee selection rubric, and the extent to which Oklahoma can afford BEAD program features such as a generous low-cost option or strong encouragement of high wages that, although desirable in some ways, might discourage private matching capital and raise the subsidy cost of BEAD-funded broadband deployment.

Cost estimation data, when it becomes available, should be compared with Oklahoma's statewide broadband funding streams, including CPF, SLFRF, RDOF, and the Tribal Broadband Connectivity Program as well as BEAD, to shape a vision of whether — and how — Oklahoma can achieve universal or near-universal broadband access. The more Oklahoma's BEAD allocation falls short of the cost of achieving universal broadband access in the state, the more the OBO will need to look for cost-effective solutions and mobilize private matching capital to get as many Oklahomans as possible some kind of broadband.

5.7 Alignment

The OBO is committed to universal broadband accessibility and affordability, which it hopes to achieve through the efficient supplementation of robust partnerships with federal funding. This strategy will require deliberate planning and outreach to maximize limited funding provided to demonstrably successful digital equity and access expansion efforts. These efforts will be led by an array of different providers and partnering organizations across the state, with the primary focus being on unserved communities.

Universal access is vitally important in supporting the digital equity and access efforts led by community organizations. For example, telehealth uptake in rural areas is extremely low compared to urban centers for several reasons, including poor internet coverage, lack of private spaces, and low digital resilience. Providing universal access to the internet directly benefits telehealth expansion efforts by Oklahoma State University, Southwestern Oklahoma State University, Oklahoma Complete Health, the Oklahoma State Department of Health, and the Oklahoma Department of Libraries (among others) in expanding the number of potential partners able to host telehealth booths or private spaces. Digital equity outreach further reinforces this by providing the digital skills necessary to fully engage in the process.

Beyond telehealth, there are extensive educational and workforce development opportunities being made available online. The Oklahoma Department of Libraries and partnering library locations launched Online High School, which enables people to achieve their high school diploma online — not just a GED. In response to the pandemic, the Department of Education launched the Ready Together Oklahoma initiative, which provides resources and direction to assist students and families regain disrupted learning, mental health, and engagement. Additionally, there are foundational services, such as enrollment and reporting, that have moved online. Most colleges and universities have fully remote or hybrid learning models that are underutilized due to poor accessibility. Because these models are intended to provide flexibility, the lack of accessibility creates an inherent inequality, whereby people with broadband can work and attend school with minimal disruptions to either. People without broadband are forced to prioritize one or the other. Partnering organizations include:

- Oklahoma Mental Health and Substance Abuse – mental health services expansion
- Oklahoma State University – ARPA-funded telehealth in rural communities
- ODL – Online High School and E-Rate assistance to libraries
- Oklahoma State Department of Education – Ready Together Oklahoma and general push for online resources (online report cards, enrollment, etc.)
- Oklahoma Department of Transportation – responsible for establishing a registry for broadband vendors and telecommunication providers in Oklahoma. Companies are notified of new construction that may disrupt broadband.
- OSU-IT – fiber technician training program
- Southwestern Oklahoma State University – USDA grant-funded program for rural telehealth expansion
- Oklahoma State Department of Health – mobile health clinics
- Oklahoma Complete Health – mobile health clinics and telehealth expansion into rural and tribal communities
- University of Oklahoma/Oklahoma Department of Corrections – technology enrichment programming
- University of Oklahoma – technology programming to rural communities via the Department of Emerging Technologies
- Department of Corrections – all inmates receive a tablet through which they communicate to the outside. Also includes workforce development trainings and materials as well as entertainment.



The OBO is working closely with other governmental, tribal, public, and private partners to ensure alignment across all broadband plans and programming. Both existing and new programs are being leveraged and created to ensure all needs and facets of broadband are being met.

The Oklahoma State University Institute of Technology (OSU-IT) in Okmulgee received \$365,068 in State and Local Fiscal Recovery Funding to conduct a workforce training program specifically on fiber technology, including splicing and pole work. Additionally, OSU-IT received over \$750,000 from the National Telecommunications and Information Administration to conduct a separate broadband workforce training program. The OBO is working closely with OSU-IT to ensure that tech program trainees have access to state resources post-graduation.

The Oklahoma Career Technology Center system received \$5 million in State and Local Fiscal Recovery Funds to create and administer a fiber technician program in seven locations across the state. Several of the centers have chosen to use the OSU-IT program and are working closely with the university on a memorandum of understanding contract.

The Rural Hotspot Lending Program is a program managed by Oklahoma State University. Libraries have purchased hotspots that may be “checked out” by the public for home usage.

Managed by Oklahoma State University and the Oklahoma Department of Libraries, the Rural Telehealth Expansion Program has allowed seven telehealth pods to be placed in libraries around the state. Community members may use the pods for telehealth appointments, which are considered HIPPA compliant. Inside the pod, the user will remotely connect with a nurse to take vitals and then the doctor will care for the patient.

The OBO will also be leveraging funding from the FCC to conduct ACP outreach. The OBO understands the importance of broadband affordability, and as such is making the ACP federal program a priority while funding is still available.

5.8 Technical Assistance

The OBO has the following requests for technical assistance from the NTIA.

1. Coordination Between BEAD and the Tribal Broadband Connectivity Program (TBCP)

As the OBO designs its BEAD program implementation over the next few months, some tribes in Oklahoma are preparing to access funding from other programs, specifically the TBCP. Since most unserved and underserved locations in Oklahoma are on tribal lands, as explained above, and since BEAD must pursue statewide universal broadband access, it stands to reason that BEAD will devote much of its attention to funding broadband deployment on tribal lands. But this is likely to create conflicts with TBCP unless skillful coordination is arranged.

As discussed above, the BEAD program must avoid targeting areas that are already scheduled to be served under existing programs. That will be somewhat challenging since there are so many locations and programs to consider. The good news is, the



decisions of those existing programs have already been made, announced, and in most cases locked in through contracts. By contrast, since the process of targeting, opening an application window, reviewing incoming grants, making selections, negotiating and de-conflicting, finalizing and contracting, etc., will take substantial time, it's very unlikely that TBCP will complete its awards in time to provide data for the purposes of BEAD planning, or vice versa. The planning and grantmaking processes will run concurrently.

Many potential problems are likely to arise from this. For example:

- BEAD and TBCP may award projects for the same locations.
- Potential BEAD subgrantees may be deterred from bidding on locations that TBCP is also targeting.
- ISPs may want to apply for both BEAD and TBCP funding, with each program as insurance against losing the other.
- TBCP projects may fail because some of their locations get service commitments under BEAD, weakening the business case for serving the remaining areas.

Avoidance of such problems is necessary if BEAD and TBCP planners are going to work together to arrive at a rational statewide solution, and for the sake of compliance with the programs' respective rules. Certainly, simultaneous subsidies by BEAD and TBCP for the same location appear to be contrary to the intent of both programs, even if it's not clear how this restriction, affecting simultaneous and uncoordinated funding streams, would be articulated and implemented. Data sharing will clearly be key to any solution, yet it's not obvious what data should be shared, with what frequency or event triggers, or how it should be utilized when shared. Also, data sharing between the OBO and the tribes concerning active grant programs risks leaking and giving unfair advantages to some grant program applicants relative to others, especially when "local coordination" is encouraged.

It is difficult for the OBO to design and push for the kinds of data sharing with the tribes that it would need because it does not have oversight of tribes or the TBCP, and its expertise about the TBCP is limited.

The OBO would therefore request that the NTIA itself, in its capacity as the administrator of both programs, would provide guidance and/or coordination to help make the TBCP and BEAD programs work together, executing coherent and effective plans that complement each other, and avoid funding grant projects for the same locations or otherwise interfering with each other.

2. Data About Pricing and Subscribership

The NTIA has provided and/or promised a good deal of useful data to the states for BEAD program implementation, but two gaps in the available data concern (a.) pricing and (b.) subscribership.

Pricing data is obviously critical for the definition and measurement of affordability, as well as the design of a reasonable low-cost option. It's not clear how the OBO can design a "middle-class affordability plan," for example, without any systematic and reliable

information about how much broadband currently costs across the state. And in designing a BEAD low-cost option, it would be desirable to make a real, significant contribution to broadband affordability for low-income residents, while keeping the impact on industry’s pricing options modest enough not to severely damage the business case for deployment *ex ante* or the commercial sustainability of networks *ex post*. But it’s hard to see how to accomplish this without knowing how much ISPs are currently charging.

Broadband subscribership data would also be desirable for multiple purposes. This plan contains some analysis of broadband subscribership patterns based on the American Community Survey, but there is no information by company, technology, or network performance characteristics. It would be valuable for BEAD planning to know whether licensed fixed wireless providers, for example, or low-Earth orbit satellite providers, capture substantial market share. The “revealed preference” of customers for different broadband technologies would help to inform good decision-making about how much fiber prioritization to pursue. When a new, unlicensed fixed wireless service at 100/20 speeds becomes available in a previously unserved area, do people sign up for it? When fiber and fixed wireless are both available, do people exhibit a strong preference for the fiber option? How many people are subscribing to the new low-Earth orbit satellite services? Are they loyal after they sign up? Do they switch to fixed wireless or fiber if it becomes available? Any information the NTIA could provide that sheds light on these questions would make BEAD planning more effective.

6 Conclusion

The Oklahoma Broadband Office looks forward to working with the NTIA, as well as the tribes in their areas of jurisdiction, to implement the BEAD program, along with the CPF, SLFRF, and State Digital Equity Capacity Grant programs, and in the process, achieving major progress towards closing the digital divide in Oklahoma. While the implementation of all these programs will be challenging, it is good to have available to meet the dire needs of many Oklahomans for the opportunity to participate fully in the digital economy and society of the 21st century.