

2023

BROADBAND EQUITY ACCESS AND DEPLOYMENT

5 Year Action Plan



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Note: Please see the associated BEAD Five-Year Action Plan (FYAP) Glossary to quickly define abbreviations, acronyms, or terms in this document.

“If we are serious about competing in today’s global economy and recruiting the best talent to come to our state and keeping our children where they grew up, then we must do everything in our power to end the digital divide.”

—Governor Laura Kelly

“Connectivity is essential in today’s digital world, and this major investment in Kansas is a testament to our commitment to bring high-speed broadband to all parts of the state. With this [BEAD] funding, we will make significant strides in connecting underserved areas and empowering businesses, students and residents with the technology they need to prosper.”

—Lieutenant Governor and Secretary of Commerce David Toland

Ensuring that every Kansan obtains access to reliable and affordable broadband service and the digital skills necessary to live, learn, work, play and compete equitably in an increasingly technology-driven society is a priority of the Kelly administration, and has been since Governor Laura Kelly took office in 2019. Governor Kelly established the Kansas Office of Broadband Development (KOBD) in 2020 to highlight the importance of affordable, high-speed broadband in the prosperity and quality of life of Kansas communities, and with a commitment to ensure that all Kansans receive this essential service. KOBD is housed within the Kansas Department of Commerce and leads the state’s broadband deployment, affordability and digital equity efforts. Since its inception, KOBD:

- Invested over \$266 million, passed over 81,500 premises, administered five programs, and managed 137 projects.
- Traveled over 50,000 miles across Kansas to conduct listening “Roadshows” in all eight economic development districts as a way to gain insight into Kansans’ lived experience with broadband.
- Saw Kansas become the first state awarded funds (over \$15.5 million) from the U.S. Treasury’s Capital Projects Fund-Digital Connectivity Technology (CPF-DCT) program in February 2023. The CPF-DCT program will support equal access to high-speed internet, free Wi-Fi to community anchor institutions (CAI), and provide internet-enabled devices to unserved and underserved Kansans.
- Was awarded, in collaboration with the Kansas Department of Transportation (KDOT), over \$42.5 million from the National Telecommunications and Information Administration’s (NTIA) Enabling Middle Mile Broadband Infrastructure Program (EMMBI). The awarded project plan is designed to create a 682-mile open access, middle mile fiber optic network to enable connection to new internet exchange points throughout the state. Moreover, the project will be neutrally administered and offer open access at duct, dark and lit fiber levels.
- Was awarded over \$83 million in CPF funds. These funds, combined with almost \$42 million in matching dollars, will result in more than 24,000 homes, businesses, schools, healthcare facilities, and other public institutions being connected to fast, reliable internet.
- Invested \$9.4 million, with an additional \$10.9 million in matching funds, to connect more than 5,700 locations through the first two years of the 10-year Broadband Acceleration Grant Program (BAG).
- Received notice of BEAD allocation in the amount of \$451.7 million to support universal broadband service for all Kansans.

- Operationalized the KOBD, expanding its operations and managed nearly \$1 billion in funds for complex, multi-million-dollar infrastructure investment projects.

As KOBD believes in taking a holistic approach to federal and state funding opportunities to close the digital divide, the State of Kansas is a national leader in applying for and using a wide range of opportunities to benefit our residents. Kansas is poised to leverage the historic federal infrastructure investment made in recent years, and we take the depth of strategic planning required for this purpose very seriously.

KOBD documents its plans for infrastructure deployment and broadband initiatives throughout the state in this Broadband Equity, Access, and Deployment (BEAD) Five-Year Action Plan (FYAP). Our FYAP is the first of four (4) documents focused on accessing and implementing federal funding. The State Digital Equity Plan, the BEAD Initial Proposal (BEAD-IP), and the BEAD Final Proposal (BEAD-FP) will build on this effort as required by the NTIA.

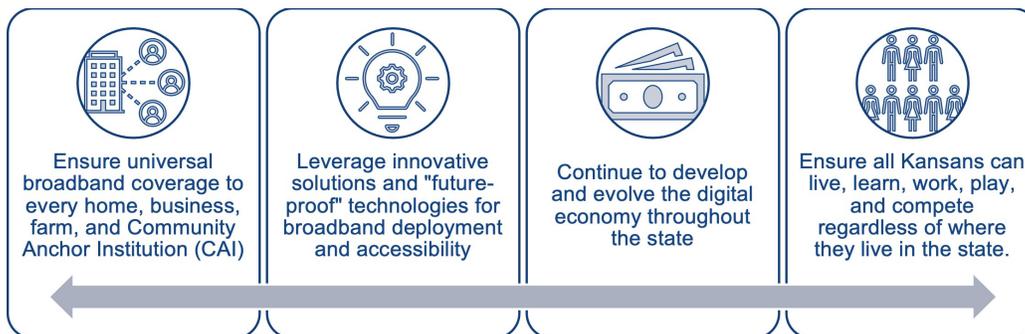
The following pages summarize key results of our planning to date, including our vision and goals; the needs, gaps and obstacles that we must address to achieve our vision; the programs, assets and partners required to make the vision a reality; and our implementation plan, including a preliminary estimate of deployment costs for a fully connected Kansas and strategies that will guide execution.

Kansas' broadband vision. KOBD's vision is to ensure that all Kansans can live, work, learn and compete in a global economy regardless of where they live in our state by improving universal access to quality, affordable and reliable broadband. Specifically, Kansas strives to be among the top 10 states by 2030 in the percentage of households able to access 100/20 Mbps service.

KOBD aligns these efforts through these five pillars: (1) reliable and quality infrastructure, (2) access, (3) affordability, (4) adoption and (5) equity, and will build on the directions outlined in the Statewide Broadband Expansion Planning Task Force report (2019) and the Kansas Department of Commerce fifteen (15) year economic development strategic plan called the [Kansas Framework for Growth](#) (2021). Our commitment to these BEAD and Digital Equity Act (DEA) efforts will set Kansas apart as a state with processes, partnerships and grant designs that ensure sustainability and the accrual of long-term benefits. We know that these benefits will accumulate as we continue growing leadership, working together, engaging in shared listening, as well as respecting and incorporating the unique needs of individual communities so that all people may contribute to this important effort.

Goals and objectives. KOBD's goal is to ensure that no Kansan is left behind in the digital world. To achieve this goal, we must be data-driven to guide our implementation plan and assess progress, utilizing both quantitative metrics and lived experiences shared by our stakeholders.

Specifically, our broadband objectives are as follows:



The Goals and Objectives section of our FYAP plan outlines goals, key metrics and targets for each objective, which will create an accountable and reportable baseline to measure and demonstrate progress toward our vision of a universally and equitably connected Kansas.

Needs and gaps. Achieving Governor Kelly’s vision of universal service for all Kansans must start with a clear picture of our current state. To this end, KOBD conducted extensive quantitative and qualitative analyses such as a Fiber Asset Inventory survey in partnership with the University of Kansas, speed tests, CAI inventories, and work with other state agencies as described in Section 9: Needs and Gaps.

Statewide, over 153,000 Kansans lack subscriptions to high-speed internet. This gap is attributable to one or more issues:

- **Infrastructure availability.** Of the 1.1 million locations in Kansas, 87,489 remain unserved (8.2%) and 57,316 remain underserved for a total of 144,805 (12.0% of Broadband Serviceable Locations (BSLs) without qualifying broadband service). These BSLs exist throughout all 105 counties, four (4) Sovereign Tribal Nations, and the 1,890 cities, towns and villages that make up the State of Kansas.
- **Affordability.** As of May 2023, of the 438,634 households eligible for the Affordable Connectivity Program (ACP), only 105,575 have enrolled (24% of those eligible). This ranks Kansas as 35th in the nation for ACP subscriptions.
- **Access to devices.** 6.8% of Kansans do not have an internet-ready device capable of handling audio and video transactions, such as a laptop, computer or tablet.

The impact of these issues varies by region and by covered population group:

- Eight Kansas counties are more than 50% unserved or underserved with 37 additional counties that are over 25% unserved or underserved.
- Counties where at least 25% of the BSLs in the county do not have qualifying broadband service represent 43% of all Kansas counties (45 counties).
- Most CAIs do not have 1Gbps symmetrical service. For instance, only 19% of the 331 healthcare facilities receiving the Rural Health Care subsidies have 1Gbps symmetrical service; 48% have 100/20 Mbps; and 33% had service less than 100/20 Mbps. Additional research is being done to determine whether this lack is due to not subscribing or not having availability.

Significant effort is needed to support the connectivity needs of our state in areas such as rural emergency services, residents’ access to technology, enrollment in affordability programs, workforce development, economic development, and the creation of resources for digital literacy and skills training.

BEAD funding, alongside collaborative planning with each region and population, provides the opportunity to reduce the number of unserved and underserved BSLs and underserved CAIs by delivering broadband infrastructure previously unavailable in these areas.

Obstacles. KOBD worked closely with partners across the state, and throughout the country, to understand the obstacles and barriers that drive up the costs of deployment. Evaluating the optimal and efficient use of the unprecedented federal investment dollars requires consideration of needs, planning resources, operational capabilities and structured prioritization.

While KOBD knows the barriers and obstacles to our goal of universal service are more significant and prevalent

than had been expected, this funding opportunity and focus will lead to significant progress and results.

Key obstacles to closing the digital divide in Kansas:

- Kansas averages 36 people per square mile and 18 BSL locations per square mile. This lack of density represents one of the state’s largest broadband investment challenges as rural communities are often overlooked in infrastructure planning due to the prohibitively high costs of deployment to remote locations. Prioritizing investment based on rate of return schedules leaves economically distressed rural areas at an even greater disadvantage for investment. Without broadband access, many rural Kansas communities lack adequate infrastructure to support business development, resident retention, emergency service, and access to telehealth services.
- In addition to rural locations, Kansas has urban locations that have challenges for ubiquitous access. For example, during the last census, hundreds of Multiple Dwelling Units (MDUs) were identified that do not have access to all housing units.
- Urban, suburban, and rural locations alike suffer from CAIs that either have no access or lack high speed access to properly support their communities. KOBD has worked with all partners to identify needed CAI locations that can help to close this gap.
- Lower income areas tend to represent higher percentages of poor broadband access. Broadband investments are but one of many investments needed to stimulate revitalization for these neighborhoods and opportunities for their residents.
- Education on the value of a broadband connection in today’s economy is needed to ensure that residents in all areas of the state that may have “opted out” of broadband subscriptions in the past now understand how vital they are to conducting the daily business of living in digital economy. For example, connections are now needed to register for a driver’s license, apply for social services, enroll in school, and participate in healthcare portals. Historically, these activities could be fulfilled in person or via U.S. Mail, but the transactions are evolving to digital use only. The inclusion of residents who previously opted out requires education for the users and the possible extension of provider facilities. These investments can also serve to improve the financial return for providers by improving their subscriptions.
- As heard in many of the KOBD Roadshow sessions, many Covered Population groups list affordability, the lack of devices, and the lack of digital skills as key barriers to broadband adoption. Others simply do not understand the world that is available to them via a broadband connection due to a lack of knowledge or experience.
- Lower income groups, veterans, older adults, and non-English speakers all referenced these same barriers. Given the premium placed on workers with digital skills, and the need for these same capabilities to participate in all aspects of the digital economy, there is a very real need to remove these, or any, barriers to adoption, providing more Kansans with robust digital skills and more opportunities.
- Workforce shortages are expected for all broadband-related roles in Kansas, especially in the technical and labor-intensive roles required to deploy fiber and fixed wireless infrastructure in the field.
- Material supply chains for broadband deployment were strained during the COVID-19 pandemic. Supply chain constraints are compounded by the infusion of funding nationwide and the timeframe in which projects must be completed. Procurement lead times for broadband technology materials, including

conduit, vaults, fiber, junction boxes, wireless radios, towers, antennas, cabinets, connectors, termination panels, switches and other communications equipment have lengthened but appear to be improving.

- Fiber optic technology has become a priority for broadband design throughout the nation because of its scalability and resiliency. There are two methods of fiber optic installation: (a) buried and (b) aerial attachments to utility poles. Buried fiber optics are more resilient and less susceptible to line breakages, and other damage from external events than aerial installations. Buried installation methods can be significantly more expensive depending on geography (i.e., rock versus soil), rights-of-way (ROW) acquisition costs, and other factors. Buried fiber costs can be as high as 75% more per mile than the cost of aerial installation. This cost differential is exacerbated in low-density areas where there are only a few locations per mile.
- Fixed wireless service may be a necessity to achieve universal broadband service for Kansas due to a variety of factors affecting rural counties. While KOBD recognizes fixed wireless solutions may be necessary, KOBD's preferred technologies are fiber optic based.
- Obtaining the approval and permits from third-party entities to deploy broadband infrastructure on their assets is a key challenge. These third-party entities in Kansas include roughly 35 different utility pole owners, more than 300 public rights-of-way (ROW) owners, and 12 railroad companies. Providers must also seek easement rights from landowners, franchise agreements from local municipalities and counties, and permits to cross bodies of water or drainage easements.

Thus, the cornerstone to our success is overcoming these obstacles to enable all Kansans to enjoy the resources, knowledge, and technical skills necessary to maximize the opportunities created by broadband access.

Outreach efforts and partners. KOBD immediately understood that identification of and outreach to diverse and local stakeholders is the foundation for success in closing the digital divide. KOBD conducted a statewide "Broadband Roadshow" in the spring of 2023, with staff traveling over 50,000 miles and presenting events in 26 locations. These meetings served as the initial introduction of KOBD to the residents, businesses, local officials, non-profits, CAIs, and associations of Kansas, and were designed to meet Kansans "where they are and live."

Key outreach efforts and partners:

- In the late fall and early winter of 2022, KOBD conducted social media campaigns to encourage Kansans to review the Federal Communications Commission (FCC) recommended broadband service maps to determine the accuracy of the representation.
- KOBD facilitated meetings with all four Sovereign Tribal Nations to discuss their broadband needs and specific, unique funding opportunities.
- The Digital Equity Advisory Council (Advisory Council) was created in January 2023 to act as an advisory adjunct of KOBD to assist in DEA planning. This Advisory Council consists of members from education, healthcare, library, sciences, banking, non-profits, industry, Sovereign Tribal Nations, National Telecommunications and Information Administration (NTIA) and National Digital Inclusion Alliance (NDIA). The broad and varied experience available from council members offers KOBD a broad range of support, advice, and input to planning. Advisory Council meetings are held bi-weekly to review current KOBD plans and seek feedback and guidance.

- KOBD held planning meetings with key state departments and agencies on the plans, timelines, and priorities of BEAD funding. Agencies were identified that either represented support and administration of programs that support covered populations, or agencies that impacted the planning, execution and security of infrastructure facilities in Kansas. Continued engagement with these partners and all other key stakeholders will be a hallmark of KOBD's work.
- In addition to attending dedicated and individualized meetings with ISPs, KOBD hosted two (2) provider meetings to review timelines, funding, planning requirements and the cooperation needed from all providers. KOBD also hosts biweekly industry roundtable meetings.
- KOBD conducted outreach to organizations serving the covered populations of Kansas to present the BEAD and DEA planning efforts, understand their broadband needs, and document barriers or limitations within their organizations and/or communities.
- KOBD and its partners, including Wichita State University, the University of Kansas, and the Kansas Farm Bureau, distributed surveys to gather statewide data on key elements of broadband and digital equity assets available in the state.
- An additional survey was conducted to determine workforce gaps amongst the internet service providers in the state to ensure successful BEAD execution. Data from these surveys has been instrumental in shaping this plan, and continued collection of data through additional surveys and other instruments will help guide decisions by ensuring maps, strategies, and asset inventories are current and accurate.
- KOBD met with the leadership teams from the eight Economic Development (ED) regions to detail BSLs, CAIs and funding gaps in each region and to hear feedback on specific broadband needs in their areas.
- KOBD launched a website for residents of the state to conduct speed tests and provide demographic survey data in support of our BEAD and DEA efforts.
- KOBD maintains a public facing website and regularly publishes the Kansas Broadband Newsletter.

Early in the BEAD and DEA planning effort, KOBD adopted an aggressive local outreach plan. With a goal to hear from Kansans across the state, structured and organized plans were created for the Roadshow, surveys, agency meetings, ED discussions, partnership meetings and state agencies. Our efforts reflect a wide range of intentional collaboration, partnerships and community involvement to collectively rise to this great challenge.

Moving Forward

KOBD and its partners are committed to ensuring access to reliable, affordable broadband for all Kansans, which unlocks opportunities for economic development, education, jobs, healthcare, and more. This Five-year Action Plan is the first step in the journey all of Kansas will take together to reach that future.



Overview of the Five-Year Action Plan

This Five-Year Action Plan begins with an overview of the KOBD vision for broadband, then outlines the high-level objectives, breaking each down into specific goals with associated goals with key metrics /targets.

The remainder of the plan follows the 13 requirements of a FYAP outlined in “The 13 Requirements that must be in in a Five-Year Action Plan,” Appendix 7.1 of NTIA’s [Five-Year Action Plan Guidance](#).

Vision

The definitive medium of communications and vital information availability in the 21st Century is the internet and its associated technologies. Communities and businesses unable to access high-quality internet connections are not only at a disadvantage but are effectively disqualified from active engagement in the modern economy. As providing broadband access to all communities across our state is a critical priority for Governor Kelly and the Kansas Department of Commerce, KOBD’s vision is to ensure that all Kansans can live, work, learn and compete in a global economy by improving universal access to quality, affordable and reliable broadband.

The tangible results of this vision will drive economic development, enable digital experiences, and accelerate sector-specific innovations in the everyday lives of Kansans. The state aspires to be a national leader in broadband availability, adoption, and affordability. Specifically, Kansas strives to be among the top 10 states by 2030 in terms of the percentage of households able to access 100/20 Mbps service. This means we must prioritize fiber-deployment solutions, while also evaluating non-fiber broadband technologies where economically and technically required. Furthermore, KOBD recognizes the far-reaching impact broadband accessibility and adoption has on transportation, education, commerce, agriculture, healthcare, public safety and our culture.

					
Transportation	Education	Commerce	Agriculture	Healthcare	Other Public Services
<ul style="list-style-type: none">• Smart Traffic Systems• Data Management Systems• Connected Vehicles	<ul style="list-style-type: none">• Reduce Barriers to Access• Digital Learning	<ul style="list-style-type: none">• Business Development• Access to Workforce Services• Remote Work• Vibrant Communities	<ul style="list-style-type: none">• Smart Farming• Enabled Equipment• Carbon Capture• Market data	<ul style="list-style-type: none">• Telehealth• Care Management• Remote Diagnostics /Monitoring	<ul style="list-style-type: none">• Emergency Service Management• Public Safety• Future Focused Communities

KOBD’s experience in running multiple grant programs, funded through the Coronavirus Aid, Relief, and Economic Security Act (CARES), the American Rescue Plan Act (ARPA), and other state-funded programs, give us valuable perspective on the needs of the state, the willingness of our provider partners to participate, and our capacity to manage the execution of these important funds. It also builds on the direction of the Statewide Broadband Expansion Planning Task Force report (2019) and the Kansas Framework for Growth—Kansas’ 15-year strategic plan for growth released in 2021. This FYAP incorporates insights from best practices of other states’ broadband development initiatives, augmented with input from more than 2,100 stakeholders throughout the state.

Overview of the Five-Year Action Plan

Goals and Objectives

This suite of goals is intended to create an accountable and reportable baseline that can measure and demonstrate progress toward our vision of Kansas as a fully “connected” state.

OBJECTIVE	
Ensure universal broadband coverage to every home, business, farm, and CAI	
GOALS	KEY METRICS/TARGETS
<ul style="list-style-type: none"> Expand middle mile infrastructure and interexchange points to reduce deployment costs to unserved communities Prioritize unserved, high-cost, and rural locations Understand and mitigate the localized barriers to deployment 	<ul style="list-style-type: none"> Percentage of served households: 100% Percentage of CAIs served at 1Gbps symmetrical speed: 100% Percentage of BEAD grant awards with commitment letters: 100%
OBJECTIVE	
Leverage innovative solutions and “future-proof” technologies for broadband deployment and accessibility	
GOALS	KEY METRICS/TARGETS
<ul style="list-style-type: none"> Prioritize fiber deployment solutions Evaluate and deploy non-fiber broadband technologies where economically and technically required Examine process(es), partnership(s) and grant design(s) to ensure sustainability and the accrual of long-term benefits 	<ul style="list-style-type: none"> Deploy fiber solutions to 75% of all BSLs Deploy non-fiber solutions to 25% of all BSLs
OBJECTIVE	
Continue to develop and evolve the digital economy throughout the state	
GOALS	KEY METRICS/TARGETS
<ul style="list-style-type: none"> Develop training and certifications for broadband installation and maintenance related jobs Develop training for broadband-affiliated jobs (i.e., sales, customer service, technical support) Create career pathways (i.e., apprenticeships) to meet the workforce need for universal broadband coverage 	<ul style="list-style-type: none"> Establish three (3) workforce development, training, and apprenticeship programs in local community colleges Survey: (i) entities who have broadband-specific related jobs, and (ii) entities who have broadband-affiliated jobs Create workforce and digital skills development program(s) based on survey results
OBJECTIVE	
Ensure all Kansans can live, learn, work, play and compete regardless of where they live in the state	
GOALS	KEY METRICS/TARGETS
<ul style="list-style-type: none"> Prioritize digital skills development and training for covered populations Create state-wide digital navigator and device placement program(s) Augment the value of universal broadband coverage to Kansans (i.e., tele-health, remote working, education, social and community activity, etc.) 	<ul style="list-style-type: none"> Baseline digital skills content; work with local partners to scale working model(s) Baseline digital navigator and device placement programs; work with local partners to scale working model(s) Work with local broadband champions to find “early wins” to develop localized buy-in

1. Existing Programs & Current Activities

Since its inception, KOBD has administered state and federal grant programs focused on broadband deployment throughout the state, as seen in Table 1 below.

Table 1: Current KOBD Activities

Activity Name	Description	Intended Outcome(s)
Broadband Acceleration Grant Program (BAG)	In 2020, the Kansas Department of Transportation, through its Eisenhower Legacy Transportation Program (IKE), partnered with KOBD to fund BAG. The program will invest \$85 million over 10 years toward bridging the digital divide in Kansas. BAG will invest \$5 million in grant awards for years one (1) through three (3), and \$10 million in grant awards for years four (4) through 10. BAG prioritizes access to unserved and underserved areas through the construction of broadband infrastructure across Kansas. The third funding year process launched July 2023.	In 2021, the inaugural year of the program, 14 project awards of \$4.4 million were invested in shovel-ready projects across Kansas. Total program investment with the required matching funds of \$4.8 million totaled \$9.2 million for the projects which were completed by June 2022. In 2022, KOBD awarded 11 projects totaling \$5 million in IKE funding investment with \$6.1 million in matching funds for a total investment of \$11.1 million. The total investment in the first two years of this ten-year program is poised to exceed \$20 million and bring robust broadband access to more than 5,700 locations.
Capital Projects Fund (CPF) Program - ARPA	The CPF program provided funding to deploy broadband infrastructure that delivers 100/100 Mbps to unserved and critical areas of the state that lacked access. CPF is intended to address the following priorities: <ul style="list-style-type: none"> • Broadband infrastructure deployment designed to directly enable work, education and healthcare monitoring. • A critical need that resulted from or was made apparent or exacerbated by the COVID-19 public health emergency. • A critical need of the community to be served. 	\$83.5 million of CPF funds, combined with almost \$42 million in matching funds, will connect more than 24,500 homes, businesses, schools, healthcare facilities, and other public institutions.
Lasting Infrastructure and Network Connectivity Program (LINC)	Kansas was allocated \$30 million in ARPA SFRF to LINC for broadband infrastructure expansion. LINC is a multi-faceted effort to improve broadband infrastructure, middle mile connectivity and Internet Exchange Point capabilities throughout Kansas.	Awards will be announced in the fourth quarter (4Q) of 2023. The goal is to connect 5,000 unserved locations with 100/20 Mbps within 24 months.
Digital Equity to Connect Kansans (DECK)	Kansas allocated \$5 million in ARPA Coronavirus State and Local Fiscal Recovery Funds (SLFRF) to DECK, which will provide competitive grants to facilitate the development of digital literacy skills and adoption of broadband service.	The application window opens in late 2023 with award announcements in 2024. Strong consideration will be given to adoption in low-income households and digital-skills development to underserved populations.

1. Existing Programs & Current Activities

Table 1: Current KOBD Activities Cont.

Activity Name	Description	Intended Outcome(s)
Broadband Equity, Access, and Deployment Program (BEAD)	BEAD will provide \$42.45 billion nationally to bring universal broadband access to all Americans. Kansas' allocation is \$451.7 million.	Universal broadband access and adoption across Kansas and 1Gbps symmetrical service to all CAIs.
Enabling Middle Mile Broadband Infrastructure Grant (EMMBI)	The state applied for NTIA's competitive EMMBI program focused on the construction, improvement or acquisition of middle mile broadband infrastructure. KOBD partnered with the Kansas Department of Transportation, the Kansas Research and Education Network (KanREN), and private providers, with input from the Kansas Department of Agriculture and the Kansas Division of Emergency Management, to submit a middle mile application in September 2022. On June 16, 2023, KOBD and our partners, were awarded \$42.5 million.	The awarded project plan is designed to create a 682-mile open access, middle mile fiber optic network to enable connection to new internet exchange points throughout the state. Moreover, the project will be neutrally administered and offer open access at duct, dark and lit fiber levels. The network passes through 28 Kansas counties: Allen, Anderson, Bourbon, Butler, Cherokee, Clark, Coffey, Crawford, Finney, Franklin, Greenwood, Haskell, Jackson, Johnson, Kingman, Labette, Linn, Lyon, Meade, Miami, Montgomery, Neosho, Osage, Pratt, Sedgwick, Seward, Wilson and Wyandotte. The network will support the needs of last-mile service providers, increase capabilities for anchor institutions, enable connections to unserved and underserved households, and increase competition in local markets, thereby creating more affordable service options.
Capital Projects Fund Digital Connectivity Technology (CPF-DCT)	In February 2023, Kansas was the first state to be awarded DCT funds (\$15.5 million) by the U.S. Treasury Department. The CPF-DCT program will support equal access to high-speed internet and provide devices to unserved and underserved Kansans. This program will be competitively allocated to eligible entities to bring free devices to income-qualifying households, free Wi-Fi to CAIs, and free Wi-Fi to low-income multi-dwelling units (MDU).	The CPF-DCT competitive program will launch in late 2023 with award announcements expected in spring 2024. Strong consideration will be given to adoption in low-income multi-dwelling unit households; increased access to community Wi-Fi; and device access in low-income households, leading to better digital-skills training opportunities.
State Digital Equity Planning Grant Program (DEA)	The Digital Equity Act provided \$692,000 to KOBD for the creation of a digital-equity plan. The goal of the DEA program is to promote the meaningful adoption and use of broadband services across covered populations. KOBD created a Digital Equity Advisory Council and completed robust outreach to covered populations.	The plan will be posted for public comment in the fall of 2023 with planned submission to NTIA by October 2023.

2. Current Funding

Efforts funded by the federal and state government to deploy broadband and close the digital divide are addressed in Table 2 below.

Table 2: Current Funding Available

Source	Funding Source	Total	Funds Expended	Available
Capital Projects Fund Program – ARPA	Federal (Treasury) with State match	\$83,460,391 with \$41,883,267 in matching funds for a total of \$125,343,657 invested	\$83,460,391 awarded	\$0 Award in process
Broadband Equity, Access, and Deployment Program (BEAD) Initial Planning Grant	Federal (NTIA)	\$4,999,943	\$871,599	\$4,128,344
State Digital Equity Planning Grant Program (DEA)	Federal (NTIA)	\$692,644	\$199,291	\$493,353
Affordable Connectivity Outreach Grant Program	Federal (FCC)	\$1 million (3 awards: City of Topeka, \$90,200; Wichita State University, \$409,800; and Kansas City Digital Divide, \$500,000).	\$0	\$1 million
Enabling Middle Mile Broadband Infrastructure (EMMBI)	Federal (NTIA)	\$42,514,219	\$0	\$42,514,219
Lasting Infrastructure and Network Connectivity Program (LINC)	Federal (ARPA)	\$30 million	Applications closed; applications currently under review: 100% expected to be allocated	\$0
Capital Project Fund Digital Connectivity Technology (CPF-DCT)	Federal (U.S. Department of Treasury)	\$15.5 million	In process	In process
Broadband Acceleration Grant Program (BAG)	State (KDOT)	\$85,000,000	\$10,000,000	\$75,000,000
Digital Equity for Connecting Kansans (DECK)	Federal (ARPA/CPF - SLFRF)	\$5 million	\$0	\$5 million start late 2023 or early 2024

3. Existing Efforts Funding

Efforts funded by the federal or state government within Kansas to deploy broadband and close the digital divide are addressed in Table 3 below.

Table 3: Existing Efforts Funded

Source	Funding Source	Description
Enabling Middle Mile Broadband Infrastructure Grant (EMMBI)	Federal (NTIA)	<p>The awarded project plan is designed to create a 682 open-access, middle mile fiber optic network to create connection to new internet exchange points throughout the state. Moreover, the project will be neutrally administered and offer open access at duct, dark, and lit fiber levels.</p> <p>The network passes through 28 Kansas counties: Allen, Anderson, Bourbon, Butler, Cherokee, Clark, Coffey, Crawford, Finney, Franklin, Greenwood, Haskell, Jackson, Johnson, Kingman, Labette, Linn, Lyon, Meade, Miami, Montgomery, Neosho, Osage, Pratt, Sedgwick, Seward, Wilson, and Wyandotte.</p> <p>The network will support the needs of last-mile service providers, increase capabilities for anchor institutions, enable connections to unserved and underserved households, and increase competition in local markets, thereby creating more affordable service options.</p>
Connectivity Emergency Response Grant (CERG) Program Broadband Partnership Adoption Grant (BPAG) Program	Federal (Treasury)	<p>In 2020, the Strengthening People and Revitalizing Kansas (SPARK) Committee allocated \$60 million in Coronavirus Relief Funding (CRF) to KOBD to increase connectivity in response to needs precipitated by the COVID-19 pandemic.</p> <p>With these SPARK funds, KOBD launched two programs: (1) CERG, for infrastructure, and (2) BPAG, for access. As of July 2023, BPAG awarded \$8,196,894 to five applicants, and CERG awarded \$49,258,591 to 67 applicants.</p>
Broadband Acceleration Grant Program (BAG)	State (KDOT)	<p>In 2021, the inaugural year of the program, 14 project awards of \$4.4 million were invested in shovel-ready projects across Kansas. Total program investment with the required matching funds of \$4.8 million totaled \$9.2 million for the projects which were completed by June 2022. In 2022, KOBD awarded 11 projects totaling \$5 million in IKE funding investment with \$6.1 million in matching funds for a total investment of \$11.1 million. The total investment in the first two years of this 10-year program is poised to exceed \$20 million and bring robust broadband access to more than 5,700 locations.</p>
Capital Projects Fund (CPF) Program - ARPA	Federal (Treasury)	<p>The CPF program provided funding to deploy broadband infrastructure that delivers 100/100 Mbps to unserved and critical areas of the state that lacked access. Eighty-three million and five hundred thousand dollars (\$83.5M) of CPF funds, combined with almost \$42 million in matching funds, will connect more than 24,500 homes, businesses, schools, healthcare facilities, and other public institutions.</p>

3. Existing Efforts Funding

Table 3: Existing Efforts Funded Cont.

Source	Funding Source	Description
Affordable Connectivity Program (ACP)	Federal (FCC)	<p>ACP is a federal affordability program for broadband subscription. For eligible households, ACP provides a discount of up to \$30 per month toward internet service and up to \$75 per month for households on qualifying Sovereign Tribal Nation lands. Eligible households can also receive a one-time discount of up to \$100 for the purchase of a laptop, desktop computer or tablet.</p> <p>KOBD partners with Education Superhighway to promote ACP. Education Superhighway provided training and resources to community partners, local governments and ISPs. As a result, 69 organizations and four representatives have signed up to provide training on how to enroll interested households. As of May 2023, Kansas has 105,575 ACP subscribers in Kansas.</p>
Affordable Connectivity Outreach Grant Program	Federal (FCC)	<p>The ACP Outreach Grant Program provides funding and resources to promote ACP and increase enrollment. Activities to promote ACP include, but are not limited to, a robust marketing and advertising campaign, social media, traditional media, flyers, infographics, standing banners, mailers, a video and community education events in partnership with the FCC.</p> <p>Three grants were awarded in Kansas: The City of Topeka received \$90,200 over the next two years, and Wichita State University received \$409,800. Kansas City Digital Divide, \$500,000 (covering both Kansas and Missouri).</p>
Capital Projects Fund Digital Connectivity Technology (CPF-DCT)	Federal (Treasury)	<p>In February 2023, Kansas was the first state to be awarded \$15.5 million of DCT funds by the U.S. Treasury Department. The CPF-DCT program will support equal access to high-speed internet and provide devices to unserved and underserved Kansans.</p> <p>The program will be competitively allocated to eligible entities to bring free devices to income-qualifying households, free Wi-Fi to CAIs, and free Wi-Fi to low-income multi-dwelling units (MDU).</p>
ReConnect Program	Federal (USDA)	<p>ReConnect offers loans, grants and a loan-grant combination to facilitate broadband deployment in rural areas.</p> <p>Since 2020, Kansas providers received three awards for broadband infrastructure at or above 100/20 Mbps. The total of the three awards is \$61.5 million with the most recent award on June 12, 2023, for \$49.9 million.</p>

3. Existing Efforts Funding

Table 3: Existing Efforts Funded Cont.

Source	Funding Source	Description
Broadband Technical Assistance (BTA) Grant	Federal (USDA)	<p>BTA provides funds to receive or provide broadband technical assistance and training, while also supporting the development and expansion of broadband cooperatives.</p> <p>On June 20, 2023, Kansas submitted a BTA application to provide broadband technical assistance to six of the most rural and economically distressed counties in the state. The counties covered are Linn, Kiowa, Gove, Wilson, Kearny and Rawlins.</p>
Community Connect Grants	Federal (USDA)	<p>This program provides financial assistance to provide broadband service in rural, economically distressed communities where service does not exist. To date, no Kansas communities or ISPs have applied for funds under this program.</p>
Distance Learning and Telemedicine Grants	Federal (USDA)	<p>This competitive program helps rural communities use advanced telecommunications technology to connect to each other—and the world—to overcome the effects of remoteness and low population density.</p> <p>To date, Kansas has 173 distance learning projects and 108 telemedicine projects.</p>
Universal Service Fund (USF) Program for Schools and Libraries (E-rate)	Federal (FCC)	<p>The E-rate program helps schools and libraries obtain affordable broadband service.</p> <p>The E-rate program in Kansas is managed by the Kansas Corporation Commission, which distributed \$30.6 million in FY 2022.</p>
Rural Health Care (RHC) Program	Federal (FCC)	<p>This program provides funding to eligible healthcare providers for telecommunications and broadband services. The program’s goal is to improve the quality of healthcare available to patients in rural communities.</p> <p>To date, 331 rural healthcare entities in Kansas use the RHC subsidy.</p>
Alternative Connect America Cost (ACAM)	Federal (FCC)	<p>ACAM II provides funding to rate-of-return carriers that voluntarily elected to transition to a new cost model for calculating high-cost support in exchange for meeting defined broadband build-out obligations. Those that elect to do so receive predictable monthly payments based on support of up to \$200 for each funded location over the program’s 10-year support term (2017-2026).</p> <p>In Kansas, five companies receive ACAM II funding covering over 14,000 locations.</p>

3. Existing Efforts Funding

Table 3: Existing Efforts Funded Cont.

Source	Funding Source	Description
Connecting Minority Communities (CMC) Pilot Program	Federal (NTIA)	This is a \$268 million grant program to Historically Black Colleges and Universities (HBCU), Tribal Colleges and Universities (TCU), and Minority-Serving Institutions (MSI) for the purchase of broadband service and eligible equipment.
Tribal Broadband Connectivity Program (TBCP)	Federal (NTIA)	This program directs funding to Sovereign Nation Tribal governments for broadband deployment, telehealth, distance learning, broadband affordability, and digital inclusion. Three Sovereign Nation Tribes that reside in Kansas received TBCP grants: <ol style="list-style-type: none"> (1) The Kickapoo Tribe of Kansas received \$3,710,576 to 146 unserved households, two businesses, 10 tribal government facilities, and 15 CAIs at 1Gbps symmetrical; and (2) The Prairie Band Potawatomi Nation received \$499,741 to assist in future fiber development. (3) The Iowa Tribe of Kansas and Nebraska received \$498,000 to assist in future fiber development and digital inclusion efforts.
Broadband Equity, Access, and Deployment Program (BEAD)	Federal (NTIA)	BEAD will provide \$42.45 billion nationally to bring universal broadband access to all Americans. Kansas' allocation is \$451.7 million.
State Digital Equity Planning Grant Program (DEA)	Federal (NTIA)	The goal of the DEA program is to promote the meaningful adoption and use of broadband services across covered populations. The Digital Equity Act provided \$692,000 to KOBID for the creation of a digital equity plan. The plan will be posted for public comment in the fall of 2023 with planned submission to NTIA by October 2023. This is phase 1 of 3 with the DEA program.
State Digital Equity Capacity Grant Program (DEA)	Federal (NTIA)	This is phase 2 of 3 with the DEA program. The \$1.44 billion formula grant will become available for states and territories over five years to implement and support the implementation of digital equity plans. The allocated funding amount per state has yet to be announced.
State Digital Equity Competitive Grant Program (DEA)	Federal (NTIA)	This is phase 3 of 3 with the DEA program. One and one-quarter billion dollars (\$1.25B) in competitive grants will become available over five years to implement digital equity projects. Eligible applicants include specific types of political subdivision, agency or instrumentality of a state; tribal governments; nonprofit entities; CAIs; local educational agencies; and entities that carry out workforce development programs.

4. Staffing and Partnerships

Currently, KOBD has nine full-time permanent positions, outlined in Table 4 below. One additional staff member will be hired, along with a full-time position to administer the EMMBI grant. A fully staffed KOBD will have 11 employees.

KOBD retained three contractor entities to assist in our broadband deployment and digital equity initiatives.

- HealthTech Solutions LLC, dba Solarity, is the primary contractor assisting KOBD in developing the FYAP, BEAD-IP, BEAD-FP and the Digital Equity Plan. This engagement includes the development of the grant program and compliance reporting.
- Witt O’Brien’s LLC is the main contractor assisting KOBD with the in-state grant programs and ARPA programs.
- Wilkinson Barker Knauer LLP provides strategic advice and support to KOBD for the BEAD and DEA programs.

KOBD also partners with two Regent universities to augment broadband and digital equity planning.

- The University of Kansas (KU) assists in compiling data for a formal location challenge to the FCC Fabric Data. In addition, KU administered and distributed a “Fiber Asset” survey to ISPs and entities that may have fiber assets in the state. KU also administered the “KOBD Digital Equity Asset Mapping” survey. For both surveys, KU collected responses and provided analysis of the findings.
- The Public Policy and Management Center (PPMC) at Wichita State University (WSU) provides logistical and strategic support for stakeholder engagement, statewide surveys, and summary reports from the Roadshow, and assistance in the creation of the Digital Equity Plan.

Table 4: KOBD Staffing

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	FT	Director	<p>Jade Piros de Carvalho – Leads all activities related to federal and state broadband programs and ensures the programs are efficiently and effectively implemented and managed to deliver high impact across the state, develops strategies to pursue funding opportunities outside of state government, and develops long-term strategies that advance KOBD.</p> <p>Among other responsibilities, Piros de Carvalho leads all state broadband initiatives with engagement from internal and external stakeholders, including administration leadership, legislators, and other interested parties. Prior to joining the state, she spent seven years with rural broadband provider IdeaTek, where she managed government and public affairs, including advocacy efforts for broadband expansion and digital equity policy.</p> <p>Piros de Carvalho also spent 10 years as an elected official in local government, including three terms as mayor of Hutchinson, Kansas. She holds a Bachelor of Arts from Wichita State University and a Master of Public Affairs from the University of Missouri.</p>

4. Staffing and Partnerships

Table 4: KOBD Staffing Cont.

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	FT	Deputy Director	<p>Joseph Le – The Deputy Director position supports the office director in broadband infrastructure deployment, community and regional planning and engagement, and digital equity and inclusion programming.</p> <p>This position assists with development and implementation of a statewide broadband plan to include goals and objectives to expand broadband coverage and digital equity for all Kansans; supports a growing office staff in grants management, mapping and technical assistance, and community and stakeholder engagement; and participates in advisory and/or stakeholder workgroups to inform planning, mapping, and spending priorities.</p> <p>Prior to joining KOBD, Le was Chief of Staff for Kansas House Democratic Leader Tom Sawyer. He previously worked as the Legislative Director, Operations Director and Agenda Clerk in the same office.</p> <p>He began his career after the 2016 presidential election as an intern for the Kansas Democratic Party in the Third Congressional District. He has served multiple terms on the Douglas County Community Corrections Advisory Board and was recently appointed to fill a vacancy on the City of Lawrence Human Relations Commission.</p> <p>Le is a graduate of the University of Kansas with double majors in Political Science and Psychology, earning a Bachelor of Arts.</p>
Current	FT	Digital Equity Program Manager	<p>Kimberlyn Jones – Leads state, regional and local engagement for digital equity, inclusion, affordability, and adoption efforts.</p> <p>This position is responsible for implementing initiatives to enable universal broadband coverage for Kansans, with a specific focus on covered populations and historically unserved communities.</p> <p>Jones holds a bachelor’s degree from the University of Missouri in Business Administration and an Executive MBA in Business Management from Rockhurst University.</p> <p>Jones has experience working in insurance, finance, non-profit management, and as an economic development business officer including as a workforce economic development manager at Metropolitan Community College in Kansas City, Missouri.</p>

4. Staffing and Partnerships

Table 4: KOBD Staffing Cont.

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	FT	Engagement and Outreach Manager	<p>Morgan Barnes – Leads partnership coordination and communications plan and support.</p> <p>This position is responsible for broadband outreach efforts to a diverse stakeholder group, and working closely with the marketing team on office communication efforts including website development, survey development and communications standards.</p> <p>Barnes worked with the Wichita State University Public Policy and Management Center as a Program Manager and Student Services Coordinator, and with Cowley College to help with setting policy and procedure for social media and assist students with creating academic plans.</p> <p>Barnes holds degrees as an Associate of Arts from Cowley Community College and a Bachelor of Arts in Integrated Marketing and Communications from Wichita State University.</p>
Current	FT	Broadband Data and GIS Analyst	<p>Stephen Shelton – Leads all broadband-related mapping coordination, data collection, data analysis, and report formation for policymakers and other stakeholders.</p> <p>He is responsible for collecting, analyzing, and interpreting large data sets related to broadband deployment, access, affordability, and adoption in Kansas, and provides technical support for inquiries related to mapping resources and broadband access.</p> <p>Shelton holds a bachelor’s degree from Portland State University and master’s degree from San Jose State University (both in Geography). His previous experience was in the travel industry, working for Expedia and Hotwire.com for nearly two decades.</p>
Current	FT	Broadband Program Manager	<p>Joshua Edgar – Leads the development and administration of broadband infrastructure grant programs. This includes the application and scoring process, contract development, monitoring projects and technical assistance.</p> <p>Prior to joining KOBD, Edgar was a policy analyst for the Nebraska Public Service Commission, managing the in-state broadband grant program.</p> <p>He holds bachelor’s and master’s degrees in political science from Kansas State University.</p>

4. Staffing and Partnerships

Table 4: KOBD Staffing Cont.

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	FT	Broadband Partnership Coordinator	<p>Shelley A. Paasch – Works with the broadband director to facilitate long-term engagement strategies with ISPs, communities, and other stakeholders for broadband expansion.</p> <p>Paasch helps community broadband committees plan projects that further KOBD’s mission to connect all Kansans with high-speed, affordable broadband. She also works alongside the GIS analyst to procure ISP, state agency and other eligible entity’s broadband availability data to ensure transparency of awarded grant funds and the accuracy of the state broadband map.</p> <p>She gathers feedback and addresses concerns on infrastructure deployment and policy/regulations; and engages state agencies to promote transparency and collaboration on broadband-relevant initiatives and projects. She partners with state agencies, ISPs, and communities to invest in and promote high-impact broadband applications across key sectors, including education, healthcare, agriculture, transportation, workforce and economic development and public safety.</p> <p>Paasch’s experience in growing communities includes serving as a Business Specialist for the Kansas Main Street program for over two years, and working in various management positions for NetWork Kansas, which helps to grow small businesses.</p> <p>She holds a certification in radio broadcasting and attended Kent State University, the University of Kansas, and Florida State College at Jacksonville.</p>
Current	FT	Broadband Infrastructure Program Manager	<p>Casey Russell – Responsible for broadband planning with an emphasis on the evaluation of ISP staffing needs, integration of all state agency assets where possible, and working with state agencies on the joint planning of networks, design, funding and implementation.</p> <p>Russell is responsible for workforce readiness in BEAD and Digital Equity Plans and in that role will coordinate resources, identify best practices, and develop the KOBD solution for addressing the workforce shortfalls in both plans.</p> <p>Prior to joining the state, Russell was a network engineer for KanREN for over a decade. He installed, managed and operated fiber optic transport equipment, route/ switch hardware and customer premise equipment for the network that served 85 CAIs around the state. KanREN acquired leased telecommunications circuits, acquired fiber resources via IRUs and leveraged partnerships to use municipal fiber to reach its members throughout Kansas. Russell also was active in a working group developing and testing the Automated Multicast Tunneling Protocol (AMT) and was involved with various state and federal grant programs throughout his career. He is a two-time National Science Foundation Panel reviewer in the technology area.</p>

4. Staffing and Partnerships

Table 4: KOBD Staffing Cont.

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	FT	Broadband Operations Manager	<p>Jessica Henry – Responsible for delivering technical assistance to communities, ISPs and other stakeholders on broadband expansion and planning opportunities.</p> <p>Henry also is responsible for KOBD’s financial and granting documentation for federal programs. This requires data entry, report updates and fiscal transfers for budgetary compliance with federal/states agencies to ensure effective management of administrative tasks and funds.</p> <p>She participates in meetings, workshops and training with internal staff and external partners, and supports data collection and research as needed.</p> <p>Henry served for 12 years as the Kansas Department of Commerce Regulatory Compliance Manager to ensure quality with economic development activities, and as a specialist and analyst in the Kansas Departments of Labor, Transportation, and Health and Environment.</p> <p>Henry holds a Bachelor of Arts in Public Relations, Advertising, and Applied Communication from Washburn University.</p>
Planned	FT	Broadband Grant Program Manager	This role will administer the broadband grant programs, including review of application and scoring processes; contract development; monitoring projects; technical assistance; review and approval of requests for funds disbursement; managing close-out of contracts; and fulfilling any other duties necessary to administer grant funding.
Planned	FT	EMMBI Grant Administrator	A full time position will be hired to administer the EMMBI grant.

4. Staffing and Partnerships

Table 5: Current and Planned Contractor Support

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	FT	Senior Consultant - HealthTech Solutions LLC dba Solarity	<p>Bob Stewart – Supports the development of BEAD Five-Year Action Plan Initial Proposal, and Final Proposal and creates frameworks of goals, tasks and requirements related to each program.</p> <p>Develops strategies for external stakeholder engagement, education, and participation.</p> <p>Develops cost models and execution plans to ensure the success of all KOBD BEAD plans</p>
Current	PT	Senior Consultant - HealthTech Solutions LLC dba Solarity	<p>Deb Fugle – Supports the development of BEAD Five-Year Action Plan Initial Proposal, and Final Proposal and creates frameworks of goals, tasks and requirements related to each program.</p> <p>Develops strategies for external stakeholder engagement, education, and participation. Assists the broadband director with provider strategy development and operational interface, where needed.</p> <p>Develops cost models and execution plans to ensure the success of all KOBD BEAD plans.</p> <p>Assists with the development of the State Digital Equity Plan</p>
Current	PT	Senior Consultant - HealthTech Solutions LLC dba Solarity	<p>Brittany Beyer – Acts as the engagement lead for KOBD’s relationship with Solarity.</p> <p>Supports the development of State Digital Equity Plan. Facilitates strategic and operational plans for the successful planning and implementation of this plan.</p> <p>Develops strategies for external stakeholder engagement, education and participation. Assists the broadband director with provider strategy development and operational interface, where needed.</p>

4. Staffing and Partnerships

Table 5: Current and Planned Contractor Support Cont.

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	PT	Senior Consultant - HealthTech Solutions LLC dba Solarity	Philip Brashear – Supports the creation and administration of the State Digital Equity Plan. Facilitates strategic and operational plans for the successful planning and implementation of this plan. Develops strategies for external stakeholder engagement, education and participation. Assists the broadband director with provider strategy development and operational interface, where needed.
Current	PT	Program Manager - HealthTech Solutions dba Solarity	Bud Ratliff – establishes governance, plan reporting and ongoing status reports on BEAD and Digital Equity Plan progress
Current	PT	Junior Consultants - HealthTech Solutions LLC dba Solarity (3)	Provides support as needed for state and federal broadband programs including programmatic design, development of evaluation, awards recommendations, review process, challenge process, and auditing process.
Current	PT	HealthTech Solutions LLC dba Solarity – Senior Emerging Specialists (2)	Develops a system of internal accountability procedures for BEAD and DEA grant administration.
Current	PT	Wilkinson Barker Knauer LLP – Senior Consultants (2)	Provides strategic planning, operational support, and subject matter expertise to support the BEAD and DEA efforts.
Current	PT	Wilkinson Barker Knauer LLP – Consultants (3)	Provides additional strategic planning, operational support, and subject matter expertise as needed to support the BEAD and DEA efforts.
Current	PT	Public Policy and Management Center at Wichita State University – Consultants (4)	Provides logistical and strategic support for stakeholder engagement, a statewide survey, and a summary report of the results to inform the creation of the State Digital Equity Plan.
Current	PT	The University of Kansas Center for Research, Inc – Researchers (4)	Assists in completing data for a formal location challenge to the FCC Fabric Data and support digital equity asset mapping in Kansas by identifying a list of potential survey recipients and champions for the survey throughout the state. In addition, during the data collection period, tracks any emerging or ancillary issues that organizations and contacts raise, and report on those issues. Administers a Fiber Asset Survey to gather data from all internet service providers or agencies in the state that may have fiber assets.

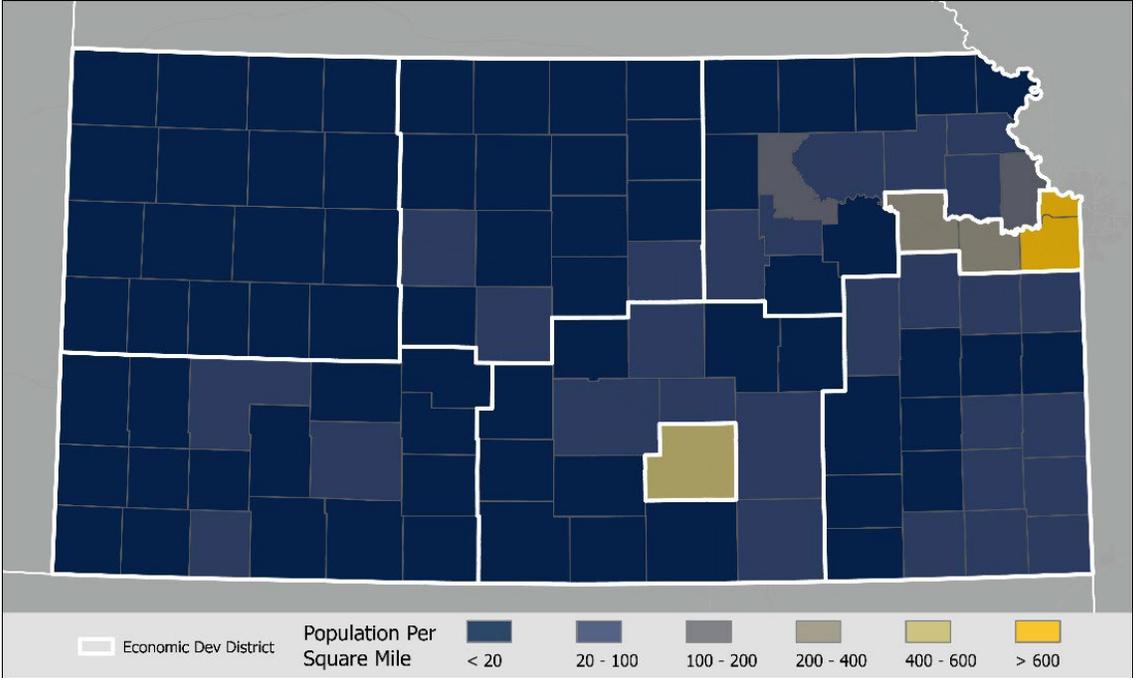
5. Obstacles or Barriers

Kansas faces a unique time in the evolution of its digital economy. Evaluating the optimal and efficient use of the unprecedented federal investment dollars allocated to broadband and digital equity across many local, state, and federal agencies requires consideration of needs, planning resources, operational capabilities, and structured prioritization. KOBD worked closely with partners across the state, and throughout the country, to consider and understand the obstacles and barriers that drive up the costs of deployment.

Population and BSLF Density

Kansas population, represented by the U.S. Census and Broadband Service Location Fabric (BSLF) density, varies greatly across the state and represents one of the state’s largest broadband investment challenges. Kansas averages 36 people per square mile and 15 BSLs per square mile. The household and business population density across Kansas’ 105 counties ranges from less than one location to 560 locations per square mile. This wide range illustrates how the cost of network extensions will vary, with remote areas costing significantly more per location than higher density areas.

Population and BSLF Density



There are several strategies to address the most rural Kansas counties. An evaluation of existing infrastructure assets shows the need for a comprehensive middle mile strategy, including additional middle mile infrastructure, for the state. There are strong middle mile assets that traverse the northwestern counties, but without available interconnections to aid in the creation of possible extensions into the residential and commercial areas. KOBD will attempt to create interconnections with these middle mile facilities and submit plans for new middle mile routes for this part of Kansas. These plans are critical to lowering the cost of investments needed by providers to extend their networks to less populated areas.

5. Obstacles or Barriers

BEAD presents an opportunity for KOBD to work with both middle mile and last mile providers to solve these infrastructure issues.

Labor

Workforce shortages are expected for all broadband-related roles in Kansas, especially in the technical and labor-intensive roles required to deploy fiber and fixed wireless infrastructure in the field. These shortages could lead to delayed deployment and higher-than-anticipated costs. Many providers seek out-of-state contracted services to augment internal resources for larger project builds. This option will not be available with every state vying for the same resources to implement their broadband investment opportunities.

Labor shortages also are expected in non-broadband-related organizations that have a role in deployment processes, such as government entities that issue permits (i.e., federal, state, local, railroad, and Sovereign Tribal Nation entities); electric companies for pole attachments and linemen to complete the necessary make-ready work; over-the-road drivers for moving materials; staff to complete buried utility location requests; and others.

KOBD engaged partners to evaluate existing workforce programs, content, and supply chain (i.e., flow of students) issues to inform our approach to appropriately respond to this looming labor shortfall.

Supply Chain and Procurement

Material supply chains for broadband deployment were strained during the COVID-19 pandemic. Supply chain challenges are compounded by the infusion of funding nationwide and the timeframe in which projects must be completed. Procurement lead times for broadband technology materials, including conduit, vaults, fiber, junction boxes, wireless radios, towers, antennas, cabinets, connectors, termination panels, switches, and other communications equipment have lengthened.

In the fall of 2022, the Fiber Broadband Association (FBA) reported lead times of 52 to 60 weeks for fiber optic cable, 10 to 20 weeks for fiber cabinets and splitters, 20 to 35 weeks for fiber multiport terminals, 15 to 20 weeks for conduit, and 22 to 26 weeks for handholes.¹ Additionally, transportation costs to move broadband technology to rural areas are often four (4) times as expensive as urban areas due to the need for multiple transport modes to complete the delivery. Another effect of these supply chain challenges is the mass purchasing and stockpiling of materials by ISPs as inventory from suppliers becomes available. Industry equipment manufacturers worked with providers to forecast demand, and lead times were lengthened but are improving.² In a May 2023 report, FBA encouraged continued mitigation strategies to ensure BEAD deadlines can be met.

The Build American Buy American (BABA) provisions may further contribute to supply chain concerns; however, a waiver is under consideration that could mitigate these conditions.

Rural Economic Challenges

Rural communities are often overlooked in infrastructure planning due to the prohibitively high cost of deployment to remote locations. Prioritizing investment based on rate-of-return schedules leaves economically distressed rural

¹<https://broadbandbreakfast.com/2022/09/new-whitepaper-shows-long-wait-times-for-fiber-construction-materials/>

²<https://www.tvtechnology.com/news/study-supply-chain-issues-ease-for-fiber-broadband-deployments>

5. Obstacles or Barriers

areas at an even greater disadvantage for investment. Many rural Kansas communities lack adequate infrastructure to support business development, resident retention, and access to telehealth services. KOBD will administer BEAD to encourage rural broadband deployment.

Cost of Capital and Technology Plus Adoption

Fiber optic technology is a priority for many service providers throughout the nation because of its scalability and resiliency. There are two methods of fiber optic installation: (a) buried and (b) aerial attachments to utility poles. Buried fiber optics are more resilient and less susceptible to line breakages, and other damage from external events. Buried installation methods can be significantly more expensive depending on geography (i.e., rock versus soil), Rights of Way (ROW) acquisition costs, and other factors. Buried fiber costs can be as high as 75% more per mile than the cost of aerial installation. This differential is even more pronounced in low-density areas.

Wireless technologies are less expensive to deploy than fiber optics, but are more susceptible to signal interference, equipment malfunction, line-of-sight obstructions, and longer latency lags. Wireless is also less scalable to increases in bandwidth demand, which leads to a need for continued investment every few years; thereby making wireless technologies more expensive to maintain.

Service providers rely on government grants or loans to reduce the capital costs of construction. Yet, the cost of operating a network must be factored into any business expansion strategy regardless of the subsidies to capital expenditures. Providers have understandably prioritized broadband deployment with government grants and loans into areas with higher address density or less competition to ensure the long-term viability of these networks.

KOBD is eager to work with providers and communities to mitigate the capital constraints of delivering broadband to unserved and underserved areas. Broadband adoption rates indicated a 15% gap between urban and rural subscriptions in Kansas. Efforts to increase adoption rates in rural locations through outreach campaigns focused on the Affordable Connectivity Program (ACP) is one example to help close the gap on needed provider rates of return in rural areas.

Additionally, KOBD examined multiple avenues to address concerns voiced by rural communities about the 25% match requirements for BEAD grants. Match subsidies, in-kind assets, and public-private partnerships all are included in the work to help with investment choices made by providers to encourage rural expansion.

Permitting

A key challenge to permitting is obtaining the approval from third-party entities for permission to deploy broadband infrastructure on their assets. These third-party entities in Kansas include roughly 35 different utility pole owners, more than 300 public rights-of-way (ROW) owners, and 12 railroad companies. Providers also must seek easement rights from landowners, franchise agreements from local municipalities and counties, and obtain permits to cross bodies of water or drainage easements.

Utility pole owners allow ISPs to attach broadband infrastructure to their poles for a monthly lease fee. The Federal Communications Commission (FCC) is the regulatory body for telecommunications pole attachment rates in Kansas. However, most pole owners in Kansas are not telecommunications companies, but are electric distribution companies, leaving pole attachment rates unregulated in Kansas. This lack of regulation has led to high costs for broadband providers to attach for aerial deployment projects and causes delays in project deployment.

The term “make-ready” refers to the process required to ensure a pole can safely accommodate new attachments.

5. Obstacles or Barriers

Compliance with pole owner loads, separation requirements, and minimum height standards is required before permit approval. Pole owners can also choose to require the company requesting an attachment to replace the pole before granting a permit. The make-ready process can add significant costs and time delays to broadband deployment.

Railroad companies allow broadband infrastructure to cross their facilities in the public ROW. Reviews and approvals from railroads are lengthy, often extending six to 12 months. Additionally, “processing fees” are expensive for railroad ROW permits, generally exceeding \$1,000, and must be requested for every crossing. Permitting and access to the ROW are issues every provider must deal with to deploy infrastructure.

Digital Skills

The state, national, and global economies place a premium on workers with digital skills. Workers with robust digital skills have access to more job opportunities and remote work than those who lack these skills. The cornerstone of KOBD’s Digital Equity Plan is to enable all Kansans to develop the digital skills necessary to maximize the opportunities created by broadband access.



6. Asset Inventory

The broadband environment in Kansas is comprised of broadband infrastructure deployment activities and assets supporting adoption, affordability, equity, and access. KOBD, in concert with private and public entities, performed a detailed review of assets through online research, surveys, meetings, and webinars to catalog assets that support connectivity goals. KOBD incorporates this data into a geospatial mapping database that links federal and state data representing service areas, serviceable locations, known broadband networks, and demographic data as a baseline for the BEAD and DEA efforts.

Broadband Deployment

Kansas has benefited from billions of dollars of private and public asset investment in broadband infrastructure in the past but has not yet realized universal broadband service.

Infrastructure assets that make up the broadband deployment ecosystem include cables, conduit, poles, towers, antennae, power sources, electronics, lasers, spectrum licenses and control software. Land and aerial assets include topography and geology maps, existing broadband route maps, ROW and easement information and policies, and line of sight information in support of cell towers to enable effective and efficient planning for infrastructure deployment. Equipment to deploy infrastructure includes backhoes, trucks, trenchers, augers, boring machines and cable trailers, and the staffing needed to operate the equipment.

KOBD conducted an inventory analysis of broadband deployment assets by beginning at the highest aggregation level of infrastructure assets and progressing to the lowest level of infrastructure to ensure a comprehensive view of costs, timelines, assets, and resources required to successfully reach universal service.

Internet Exchange Points (IXPs) are the highest level of broadband connectivity to exchange internet traffic to the worldwide web. These points are “openings” or “intersections” local network providers can interconnect to high-capacity middle mile routes that provide connectivity across the country.

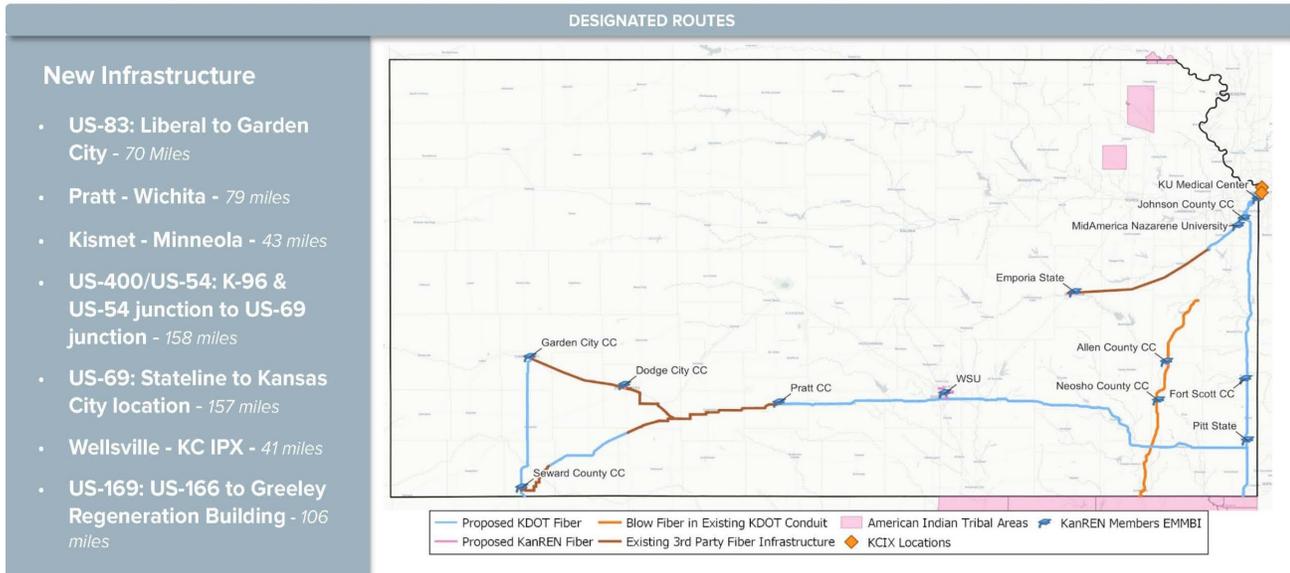
Kansas currently has no IXPs. Providers rely on interconnection opportunities in neighboring states, such as Colorado and Missouri. The creation of IXPs across the state will enable the efficient use of middle mile facilities to extend broadband coverage into the state’s most rural areas by effectively reducing the cost of deployment. IXPs will also lower latency by localizing internet traffic to communities near the interconnection points. KOBD’s LINC program includes IXPs as an eligible infrastructure cost. Strategically placed IXPs are critical for universal service in Kansas.

Middle mile infrastructure is often the most expensive and time-consuming deployment component of expanded broadband infrastructure. KOBD will continue to partner with KDOT, KanREN, lawmakers and private industry to create more open-access IXPs and develop a middle mile strategy.

Kansas’ recently awarded NTIA EMMBI will begin to address the lack of open access middle mile routes.

6. Asset Inventory

Kansas NTIA Middle Mile Grant Route



New Infrastructure

- US-83: Liberal to Garden City - 70 Miles
- Pratt - Wichita - 79 miles
- Kismet - Minneola - 43 miles
- US-400/US-54: K-96 & US-54 junction to US-69 junction - 158 miles
- US-69: Stateline to Kansas City location - 157 miles
- Wellsville - KC IPX - 41 miles
- US-169: US-166 to Greeley Regeneration Building - 106 miles

KOBD incorporated publicly available information to identify middle mile routes available for use. KOBD worked with ISPs, middle mile providers, and state agencies to verify and validate all middle mile routes with the capacity for interconnection to help decrease the amount of lateral and last mile facilities required to achieve universal service. KOBD will actively maintain an inventory map of these facilities so that all BEAD planning is optimized by the most efficient route designs available.

KanREN is a non-profit organization that operates an extensive middle mile network serving universities, school districts and other CAIs. Established in 1992, this 501(c)3 was created to build local, state, and regional networks for researchers, educators, and public service institutions in Kansas.

Kansas has more than 100 last mile providers that use a variety of technologies to bring broadband to end users. KOBD is engaged with providers and will continue engagement through our BEAD and DEA efforts.

KOBD identified electric distribution providers who may be interested in providing broadband service. See Appendix 3—Providers in Kansas for a list of Internet Service Providers and Electric Distribution Providers.

KOBD conducted outreach with local governments, education institutions, healthcare facilities, non-profits, and others. Kansas allows municipal broadband deployment but has very few city-owned networks, with Chanute, Kansas being the most often cited example.

KOBD consulted with the four Sovereign Tribal Nations to document their networks, where allowed. KOBD commits to support improved broadband services to all Sovereign Tribal Nations located within the state.

6. Asset Inventory

KOBD hosted state and regional outreach meetings and conducted surveys to identify CAIs. A partial list of the agencies and associations contacted includes:

- AARP
- Kansas Association of Community Colleges
- Kansas Association of Counties
- Kansas Association of Retired School Personnel
- Kansas Chamber of Commerce
- Kansas Farm Bureau
- Kansas Hospital Association
- Kansas Library Association
- Kansas State Conference
- Kansas Superintendents Association
- League of Kansas Municipalities
- NAACP

Many state-level associations have regional associations or membership groups. The Kansas Library Association, for example, supports seven regional library systems that serve public libraries. The Farm Bureau maintains offices in every county in Kansas. Leveraging existing state relationships into regional buy-in enables broadband deployment and access. These partnerships are key aspects of our layered outreach approach described in Section 7.

KOBD finds social media outreach to be critical in maintaining communication with all Kansans and will continue to inform and promote broadband deployment through developing unique content on its website, public newsletter, and on Kansas Department of Commerce social media channels. KOBD also works with the Governor's Office on press releases and events promoting broadband deployment.



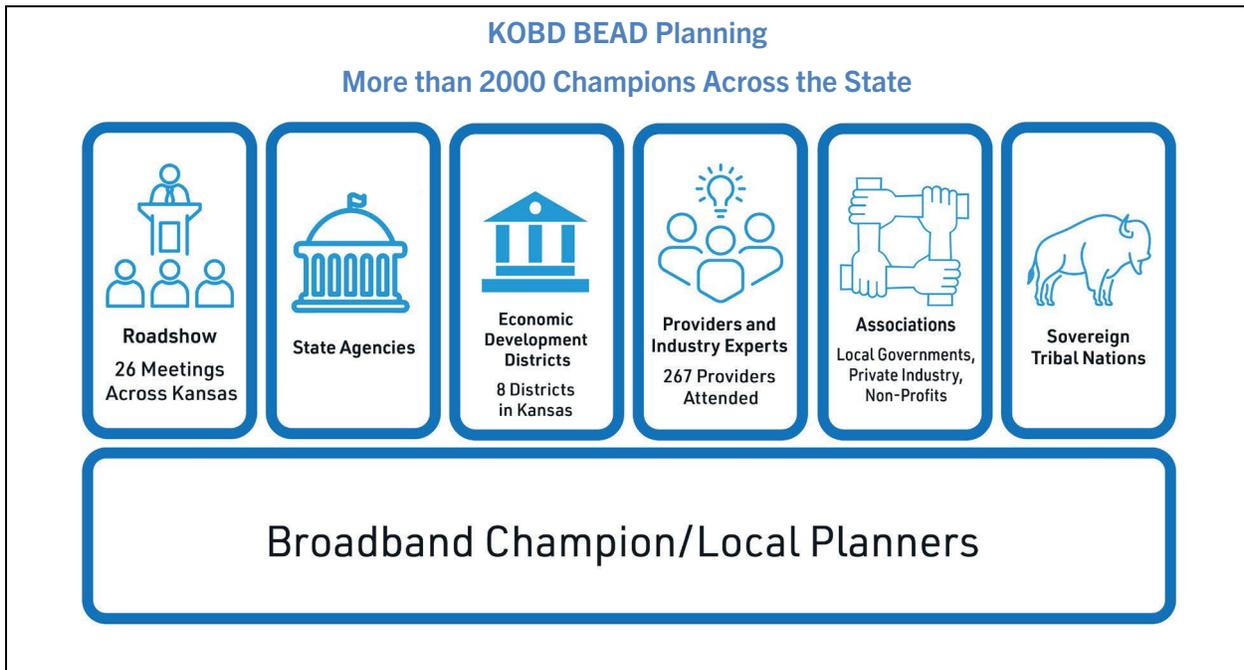
7. External Engagement

KOBD began the BEAD and DEA planning effort with the understanding that identification of and outreach to diverse and local stakeholders is the foundation for both plans and for our effort in closing the digital divide.

To this end, a layered methodology was implemented for the outreach strategy, which begins at the highest levels of the stakeholder groups and filters down to the applicable layers of constituents within each group. The first activity in documenting this outreach strategy was to identify major groupings of common interests. Grouping stakeholders by common interest calibrated our outreach discussions, meetings, and surveys to capture specific information and concerns important to each group. KOBD was careful to note any stakeholders whose interests would cross over from BEAD to DEA, ensuring holistic conversations occurred.

A complete list of all meeting(s) and invitees, attendees, covered populations represented, and issues captured can be found in the Appendix 4—KOBD Engagement (Local Coordination) Tracker.

Examples of the stakeholder groups and areas of outreach



KOBD Roadshow

KOBD initiated a statewide “Broadband Roadshow” (Roadshow) in the winter of 2023. KOBD staff traveled over 50,000 miles and held events in 26 locations throughout the state. These meetings served as the initial introduction of KOBD to the residents, businesses, local officials, non-profits, CAIs and associations of Kansas. The meetings were designed to meet the residents of Kansans “where they are and live.” Therefore, each local meeting was held in places suggested by the residents themselves. Most meetings took place in the evening. All meetings were attended by multiple KOBD staff members and facilitated by partners at WSU. The map below features a visual view of the locations visited.

7. External Engagement

Kansas Roadshow Locations



Roadshow discussions centered on the lived experience of the attendees and residents. A brief presentation introduced the opportunity created for Kansas by the Infrastructure Investment and Jobs Act (IIJA). The remaining time was spent in group roundtable discussions stimulated by several key topics, including:

- Availability and quality of broadband service in their home/business/farms.
- The affordability of broadband services in their area. Key concerns and perceived barriers to deployment.
- Key concerns and perceived barriers to deployment.

KOBD received frank, direct, and honest feedback from attendees. Some of the prevalent concerns:

- Broadband service is not reliable in many rural locations
 - Creates a deterrent to adoption
 - Enhances safety concerns, as there were multiple documented emergency service impacts due to inability to access 911 services
- Costs are too high
 - Many businesses pay high rates for insufficient service
 - Hinders business and economic growth in these rural and economically distressed areas
 - Impacts level of service for their customers
 - Many residents lack awareness of affordability programs, such as ACP
 - If they were aware, the process to enroll was considered too cumbersome

7. External Engagement

Members of the enumerated covered populations outlined concerns unique to their communities

- Veterans
 - Costs are prohibitively high
 - Digital skills and literacy are low
- Individuals with a language barrier
 - Not aware of ACP
 - Difficulty obtaining support service in their appropriate language
- Individuals who primarily reside in a rural area
 - No access to broadband service, and when they do, costs are prohibitively high
 - Limited and oversubscribed community locations for support
 - Past promises of broadband infrastructure not realized
 - Farmers are unable to take advantage of real-time market data and farm with equipment-enabled applications
- Individuals with disabilities
 - Assistive services not always available
- Individuals who live in covered households (e.g., lower income)
 - Costs are prohibitively too high
 - Not aware of ACP
 - Multiple Dwelling Units (MDUs) are not provisioned or serviceable to the individual units (i.e., either the whole building is wired or none of it is)
- Individuals who are members of a racial or ethnic minority group
 - Urban broadband deserts (i.e., lower-income locations near densely populated communities) are often overlooked

Results from all meetings were tabulated and have subsequently served as the basis of our BEAD and DEA priorities.



7. External Engagement

Sovereign Tribal Nations Meetings

Four federally recognized Sovereign Tribal Nations reside in Kansas: (1) Iowa Tribe of Kansas and Nebraska, (2) Kickapoo, (3) Prairie Band of the Potawatomi, and (4) Sac and Fox Nation of Missouri in Kansas. KOBD facilitated meetings with the four Sovereign Tribal Nations to discuss their broadband needs and specific funding opportunities unique to them.

Each meeting had the goal of growing relationships between key stakeholder groups and covering common topics including updates on federal, state, and tribal initiatives; infrastructure access; digital equity; and workforce opportunities. Notes captured feedback from each session and next steps for the NTIA, KOBD and Sovereign Tribal Nations.

On February 24, 2023, the consultation with the Iowa Tribe of Kansas and Nebraska included tribal council members and staff, executives of Grey Snow Management, NTIA FPOs from Nebraska and Kansas, and the Office of Native American Affairs Executive Director for the State of Kansas. Emphasizing sovereignty, the tribal representatives shared a need to coordinate across state and other geographical lines. Related to digital equity needs, a point of contact will be provided to help all tribal members enroll in ACP. Workforce topics included discussion of partnerships with a Nebraska community college and succession planning needs.

On March 24, 2023, the consultation with the Prairie Band of the Potawatomi outlined a frustration with the lack of respect for their sovereignty, current infrastructure, ROW issues and mapping. Related to digital equity needs, a lack of infrastructure access and affordability presented a fundamental gap to digital inclusion efforts. The Sovereign Nation Tribe works with an existing workforce consultant to determine opportunities, of which there is a potential for KOBD efforts to accelerate already envisioned strategies.



On May 1, 2023, the consultation with the Sac and Fox tribes included tribal members and staff, along with the Office of Native American Affairs for the State of Kansas. Discussions included an overview of current technical support, ISP relationships, public relations, and areas such as public safety and historic preservation. Related to digital equity needs, affordability with the current provider is a challenge, along with a need for increased assistance to provide access and digital training, coaching, and support. The Sovereign Nation Tribe was particularly interested in the ability for broadband to help build the needed workforce, and the desire to continue communication with KOBD.

On August 4, 2023, the consultation with the Kickapoo nation outlined concern about underserved areas, infrastructure within public areas, supporting broadband within the tribe instead of relying on outside entities, modernizing technology in public ally accessible spaces, and communication and outreach within the community. Interest in assistance to support broadband use and adoption within the tribe was of particular focus due to lack of grant funding for the tribe directly. Plans to continue partnership with the Kickapoo tribe to support training to deploy broadband will continue, along with additional conversation on how KOBD can partner and support workforce efforts.

7. External Engagement

Digital Equity Advisory Council

The Digital Equity Advisory Council (Advisory Council was formed to advise KOBD on DEA planning efforts. This Advisory Council — whose members are noted in Table 6 below — consists of subject matter experts from education, healthcare, library, sciences, banking, non-profits, municipal, industry, sovereign tribal nations, NTIA and NDIA. The group meets bi-weekly to inform the mission, vision and actualization of digital equity and inclusion throughout Kansas, coordination of partners involved with access, adoption, and workforce development efforts underway. Members of the council also offered their time and talents by attending Roadshow meetings. Advisory council members also hosted outreach meetings to non-English speaking Kansans.

Table 6: Digital Equity Advisory Council Members

Name	Title/Organization
Sydney Bannister	Communication & Education Manager, League of Kansas Municipalities
Barbara Bichelmeyer	Provost and Executive Vice Chancellor, University of Kansas
Chan Brown	Program Officer, Kansas Health Foundation
Kenya Cox (with TJ Ingram)	President, NAACP - Kansas Chapter (State Legal Redress Chair, NAACP Kansas State Conference)
Aaron Deacon (with Leslie Scott)	Managing Director, Kansas City Digital Drive (Program Manager, Kansas City Digital Drive)
Glenda DuBoise	State Director, AARP Kansas
William Duncan	Assist Research Professor of Data Science, Kansas Data Science Consortium
Cris Fanning	Executive Director - Programs and Risk Reduction, Kansas Department of Corrections
Jennifer Findley	Vice President Education & Special Projects, Kansas Hospital Association
Scott Gowan	Chief Information Officer, Topeka School District
Lazone Grays	President/CEO, IBSA
Kathi Grossenbacher	Director, Information Technology, Kansas State Department of Education
Nathan Harjo	Supervisory I.T., Haskell Indian Nations University
Jeremy Hegle	Assistant Vice President & Community Affairs Officer, Federal Reserve Bank of Kansas City
Tabitha Hogan	Director, Winfield Public Library
Amy Huffman	Policy Director, National Digital Inclusion Alliance
David Jordan	President & CEO, United Methodist Health Ministry Fund
Stacey Knoell	Executive Director, Kansas African American Affairs Commission
Dana Ladner	Compliance, Education and Agency Support Program Manager, Kansas Department of Agriculture
Bryan Seamans	Chief of Telecommunications, Kansas Corporation Commission
Scott Smathers (with Hector Martinez)	VP for Workforce Development, Kansas Board of Regents (Director, Adult Education, Kansas Board of Regents)
Shanna Smith-Ritterhouse	President, Kansas Library Association

7. External Engagement

Table 6: Digital Equity Advisory Council Members Cont.

Name	Title/Organization
Melinda Stanley	Federal Program Officer, National Telecommunications and Information Administration
Monica Vargas-Huertas (with Carla Rivas-D'Amico)	Political & Community Outreach Director, UFCW2 (Executive Director, Kansas Hispanic and Latino American Affairs Commission)
Jancita Warrington	Executive Director/Tribal Liaison, Kansas Native American Affairs
Felicia Welch	Employment Services Program Administrator, Department of Children and Families

State Departments and Agency Meetings

KOBD held planning meetings with key state departments and agencies on the plans, timelines, and priorities of BEAD funding. Specifically, KOBD engaged with the following departments and agencies:

- Kansas Adjutant General’s Department: Kansas Homeland Security
- Kansas Behavioral Health Services Commission
- Kansas Commission on Veterans Affairs
- Kansas Department for Aging and Disability Services
- Kansas Department for Children and Families
- Kansas Department of Administration, Office of Financial Management
- Kansas Department of Commerce
- Kansas Department of Corrections
- Kansas Department of Education
- Kansas Department of Health and Environment
- Kansas Department of Labor
- Kansas Department of Transportation
- Kansas Department of Wildlife and Parks
- Kansas Tourism Division at the Kansas Department of Commerce

Each attendee was asked to consider key contacts in their agency, industry and associations across the state that could partner with KOBD. Each agency also was asked to amplify communications and support planning throughout the BEAD and DEA efforts. Additional meetings with key agencies, such as the Kansas Department of Transportation and Kansas Department of Labor, were held to further discuss items such as state fiber facilities, ROWs and workforce readiness. KOBD maintains a close working relationship with all agencies and will ensure their awareness of timelines, needs and priorities required as progress is made through the BEAD and DEA processes.

A complete set of meetings, invitees, attendees, and issues can be found in the Appendix 4—KOBD Engagement (Local Coordination) Tracker.

7. External Engagement

Telecommunications Industry, Internet Service Provider Meetings

KOBD maintains strong relationships with the internet service providers (ISPs) of Kansas. A commitment to transparency by KOBD in the planning and expectations of the ISP community underpins a robust set of outreach efforts to these partners. Specifically, KOBD covered BEAD and DEA requirements expected of KOBD by the NITA and, by extension, of our grant applicants and awardees.

In addition to attending dedicated meetings for the ISPs themselves, KOBD hosted two provider meetings to review timelines, funding, planning requirements and the cooperation needed from all providers. Another set of ISP meetings took place to provide updates on progress being made and to lay out 2023 KOBD funding opportunities that extend beyond BEAD and DEA. Moving forward, KOBD committed to biweekly meetings with ISP partners through 2023 and monthly meetings thereafter.

KOBD also met with the Kansas Cable Telecommunications Association and the Communications Coalition of Kansas, groups that represent multiple ISPs, to review the BEAD initiatives, timelines, goals, and objectives. A commitment to ongoing communications also was extended to these key partnerships.

A complete set of meetings, invitees, attendees, and issues can be found in Appendix 4—KOBD Engagement (Local Coordination) Tracker.

Surveys

To date, KOBD distributed four surveys to gather statewide data on key elements of the assets and needs inventories.

- **Wichita State University:** This survey focused on specific covered populations to assess broadband needs, barriers to adoption, and known content that may be available to assist in digital skills development. This survey and its results will be covered in the Kansas Digital Equity Plan.
- **University of Kansas:** Two surveys were conducted:
 - A provider survey was sent to identify private broadband assets within the state, currently and planned for the next five years. In addition, providers were asked to document any existing commitments on previously awarded federal and state funded broadband projects. Agency and association surveys were also sent to groups that may own fiber assets. The goal of this survey was to document facility routes, capacity, utilization, and commercial status to determine if any of these assets could complement any provider routes to reduce required expansion investments.
 - The University also distributed a Digital Equity Asset Survey on behalf of KOBD to agencies, associations, and non-profits in the state to gather information on existing digital equity programs, their funding source, the targeted audience, intended benefit, current progress, and future plans.
- **Workforce Development:** This survey sent to ISPs by KOBD asked them to document their projected workforce needs, by position, to fulfill BEAD infrastructure builds and ongoing operations. This survey will be addressed in Section 10.f. Workforce Development.

For the providers, agencies, and associations that may have fiber assets to consider, 176 surveys were sent with 53 responses. A copy of the survey is attached in Appendix 5—ISP and Agency Survey Forms.

7. External Engagement

Forty-three providers and 10 agency responses were received, although not all were complete. Incomplete responses were accepted to collect as much detail as possible. Summary of findings are as follows:

- Twenty-seven of the respondents own middle mile fiber covering 2,700 combined miles.
 - All the middle mile facility owners were last mile providers as well (no exclusive middle mile providers).
- Eleven of the respondents have previously received broadband grants totaling more than \$100 million:
 - Eleven state broadband recipients
 - Two USDA recipients
 - Three CAF 2 recipients
 - One RDOF recipient
- Seventeen of the respondents were Fiber to the Home (FTTH) providers and two provide fixed wireless only.
- Thirty-two respondents indicated plans to apply for additional grants, including BEAD.
- Most of the respondents provided contact information and requested an NDA be executed.
- Two respondents asked for contact to discuss BEAD plans.
- Seven state agencies also replied detailing the fiber assets they use, own, or manage:
 - KanREN
 - Kansas Bureau of Investigation
 - Kansas Department of Agriculture (two responses)
 - Kansas Department of Transportation
 - Kansas Department of Wildlife Parks and Tourism (two responses)
 - Kansas State Library
 - Kansas State Research and Extension
- All respondents offered to support KOBD community outreach efforts via email, their own websites, and newsletters.
- The Kansas State Library system also detailed their digital skills training database inventory of programs, called “Learning Express.”

These surveys are further evidence of the positive impact KOBD outreach is having and the opportunities to partner with providers and state agencies across the state.

7. External Engagement

Economic Development Meetings

Once the first set of meetings with the state departments and agencies was completed, a second layer of outreach meetings involved leadership teams from the eight Economic Development (ED) Regions.

Kansas Economic Development Districts



Meetings were hosted with each ED group individually and included their chosen geographical representatives. In these meetings, KOBD presented an overview of IJJA, BEAD and DEA opportunities. Each ED was asked to consider what counties, associations, non-profits, and community leaders KOBD should engage to accurately represent their geographic area. Specifically, participants were asked to “nominate” known individuals who might act as their broadband champion(s) (i.e., points of contact for local planning) to work alongside KOBD.

Each ED was shown an excerpt of the FCC Broadband Fabric Map depicting served and unserved areas for their region. KOBD also reviewed state maps showing current CAIs and had robust discussions on the definition of CAIs and the value of that designation. Engaging with each ED is the best method to ensure an accurate and inclusive list of CAIs that includes the needs of their regions, counties, and communities. Each ED also was shown their eligible ACP households and the current adoption rates.

The next set of ED planning meetings will occur with the designated local broadband champions to finalize localized broadband needs within their area; collaborate with local providers and ISPs; review technology choices; and project the buildout costs of their areas in conjunction with KOBD support. This level of outreach will foster the local buy-in needed for these broadband deployment projects and the extensive collaboration between the residents, businesses, farmers, ISPs and the state.

7. External Engagement

KOBD Website

KOBD's public facing website with the Department of Commerce engages and updates constituents across sectors. The website is used to share key strategic plans, funding opportunities, social media, links to the Kansas broadband speed testing website, KOBD contact information, and links relative to industry, state events or articles. The website provides transparency of resources allocated and application processes:

<https://www.kansascommerce.gov/broadband>



KOBD Newsletter

KOBD sends a Kansas Broadband Newsletter to partners throughout the state to provide updates on KOBD plans and progress. The newsletter is shared with:

- Agricultural community
- Community champions
- Economic development representatives
- Educational institutions
- Healthcare centers
- ISPs
- Local governments

All Kansas residents are welcome to sign up for the newsletter on the KOBD website.

7. External Engagement

State Speed Test Opportunity Communications

On May 16, 2023, KOBD launched a website for residents of the state to conduct speed tests and provide demographic survey data in support of our BEAD and DEA efforts. This website serves multiple functions for BEAD and DEA planning, namely:

- Validation of broadband service availability and quality
- Involvement of Kansas residents in the BEAD and DEA planning efforts by seeing their tests post to the KOBD website
- Collection of BEAD and DEA demographic data via the survey included on the test page
- Vehicle for NTIA-required challenge data, if required

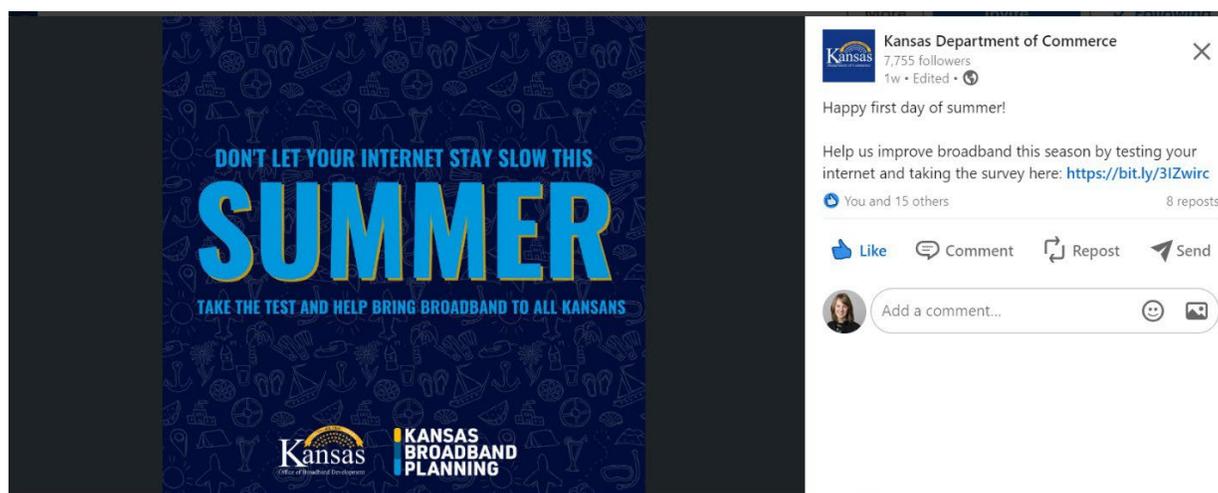
KOBD engaged in multiple outreach activities to ensure widespread knowledge of the speed test effort and to ask for participation. Letters were sent to every school district in the state with a request to distribute the letters to students, faculty and staff. In addition, state agencies and multiple state associations, groups, and communities were provided with flyers and letters to distribute to their membership. All letters and communications were sent in English and in Spanish.

To date, 6,754 tests have been taken at 4,098 unique IP addresses. The difference is explained by the request for users to conduct tests multiple times and at varying times of the day to validate speed of service when different usage patterns may exist. In addition, if any of these addresses want to be involved in the challenge process, more specific test timing and events will need to be coordinated to ensure compliance.

In addition to speed tests, 6,504 demographic surveys were completed detailing the number of users in the home; demographics for each user; predominate use requirements (i.e., work, education, healthcare, social, gaming); existing provider information; affordability; and price elasticity.

The KOBD Speed Test can be found at <https://broadbandks.com/>.

Example of Social Media Outreach



7. External Engagement

The following letter was sent to all educational institutions for distribution to students, faculty, and staff:

 <p>Department of Commerce Office of Broadband Development 1000 S.W. Jackson St., Suite 100 Topeka, KS 66612-1354</p> <p>Phone: (785) 296-5298 Fax: (785) 296-3490 TTY: 711 KansasCommerce.gov</p> <p>David C. Toland, Secretary Laura Kelly, Governor</p> <p>Faculty, Staff, Student and Parents:</p> <p>Kansas is creating a plan to expand broadband to every Kansan and asking everyone to visit https://broadbandks.com to take a quick online speed test and survey. The test is simple and will only take a couple of minutes to complete.</p> <p><i>If you do not have internet service at your home or business, you can call or text 1 (913) 349-9555 and share your address where there is no service.</i></p> <p>To take the speed test, just make sure you are on Wi-Fi (not just on your cell phone network) from your home or business. Look for this symbol this (📶) instead of this one (📶) to be sure you are not on your cell phone network.</p> <ul style="list-style-type: none">• The speed test will capture your internet speed, general location, and IP address, but will not record any other personal information.• You will also see a SURVEY button. The survey is optional, but we encourage you to take it. It will provide us with important information about how you connect, what training might be helpful, and how affordable your internet service is. <p>This may not be the first time you have been asked to do this, but it may well be the most important. It can help us prioritize the historic federal funding coming to Kansas! If possible, best results are obtained if you take 5-7 tests at different times of day with focus in the late afternoon or early evening since this is when you may experience the slowest service.</p> <p>We know that this is a busy time of the year with school ending and summer beginning. We deeply appreciate your help in getting these tests done to share where the opportunities are to better connect Kansas.</p> <p>Questions or want to learn more visit https://broadbandks.com.</p> <p>Kansas Office of Broadband Development (785) 480-8555</p>	 <p>Department of Commerce Office of Broadband Development 1000 S.W. Jackson St., Suite 100 Topeka, KS 66612-1354</p> <p>Phone: (785) 296-5298 Fax: (785) 296-3490 TTY: 711 KansasCommerce.gov</p> <p>David C. Toland, Secretary Laura Kelly, Governor</p> <p>Maestros/ Maestras, personal, estudiantes y padres:</p> <p>Kansas está creando un plan para expandir la banda ancha a todos los habitantes de Kansas y les pide a todos que visiten https://broadbandks.com para realizar una prueba y hacer un cuestionario de velocidad en línea. La prueba es simple y solo tomará un par de minutos completarla.</p> <p><i>Si no tiene servicio de internet en su hogar o negocio, puede llamar o enviar un mensaje de texto al 1 (913) 349-9555 y compartir su dirección donde no haya servicio.</i></p> <p>Para realizar la prueba de velocidad, solo asegúrese de estar conectado a Wi-Fi (no solo a la red de su teléfono celular) desde su hogar o negocio. Busque este símbolo este (📶) en lugar de este (📶) para asegurarse de que no está en la red de su teléfono celular.</p> <ul style="list-style-type: none">• La prueba de velocidad capturará su velocidad de Internet, ubicación general y dirección IP, pero no registrará ninguna otra información personal.• También verá un botón par una ENCUESTA. La encuesta es opcional, pero le animamos a que la responda. Nos dará información importante sobre cómo se conecta, qué capacitación podría ser útil y qué tan asequible es su servicio de internet. <p>Puede que esta no sea la primera vez que se le pide que haga esto, pero puede ser la más importante. ¡La información nos ayudará a priorizar los fondos federales que vendrán a Kansas! Si es posible, los mejores resultados se obtienen si realiza de 5 a 7 pruebas en diferentes momentos del día, preferiblemente en la tarde o temprano en la noche, ya que es cuando puede experimentar el servicio más lento.</p> <p>Sabemos que este es un tiempo ocupado del año con el final del año escolar y el comienzo del verano. Agradecemos profundamente su ayuda para realizar estas pruebas para compartir dónde están las oportunidades para conectar mejor a Kansas.</p> <p>Si tiene preguntas o desea obtener más información, visite https://broadbandks.com.</p> <p>Oficina de Desarrollo de Banda Ancha de Kansas (785) 480-8555</p>
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7. External Engagement

Key Covered Populations, Groups, Associations and Non-Profits

KOBD conducted focused outreach to organizations tailored to members of the enumerated covered population to present the BEAD and DEA planning efforts, understand their broadband needs, and to document barriers or limitations. A representative list of DEA partners is shown in Table 7 below, and a full list of Digital Equity Assets can be found in the KOBD Digital Equity Plan.

Table 7: DEA Partners

AARP	Kansas Department of Corrections
Kansas African Affairs Commission	Kansas Department on Aging and Disability Services
Kansas Association of Area Agencies on Aging	Kansas Farm Bureau
Kansas Association of City/Town Management	Kansas Hispanic & Latino American Affairs Commission
Kansas Association of Community Action Programs	Kansas League of Municipalities
Kansas Association of Counties	Kansas Library Association
Kansas Association of Educational Service Agencies	Kansas Silver Haired Legislature
Kansas Board of Regents	Kansas State Department of Education
Kansas Commission on Veterans Affairs Office	KANSASWORKS
Kansas Department for Children and Families	

Outreach Summary

Early in the BEAD and DEA planning effort, KOBD adopted an aggressive local outreach plan. With a goal to hear from Kansans from across the state, structured and organized plans were created for the Roadshow, surveys, agency meetings, ED discussions, partnership meetings and collaborative meetings with service providers. These outreach plans continue to evolve beyond FYAP. KOBD will continue to use the tools developed and add capabilities via social outreach, local planning and local covered population groups. In addition, KOBD is working with partners, state and local agencies, and associations to find and name broadband champions who can help “localize” messaging.

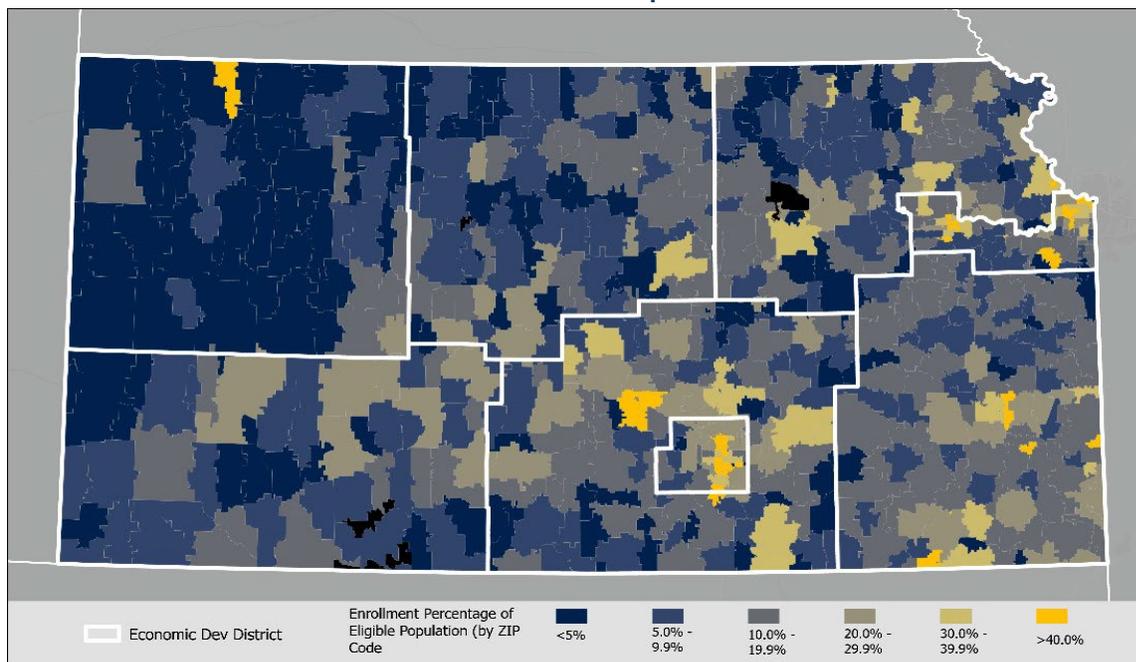
8. Data Incorporated

KOBD incorporated the available federal, state, and local broadband availability and adoption data into our analysis and evaluation of the asset inventory, while also identifying local and regional broadband service gaps and needs. This data is available below in both visual mapping platforms and tabular form in related appendices. KOBD will continue to research updates in existing data sets and validate new sources of data as we continue to refine our approach for the BEAD-IP and BEAD-FP. The data sets incorporated are as follows:

Federal Data Sets

Data from ACP was included by county and zip code. Quoting the ACP report from April 2023, the Federal Reserve Bank of Kansas City indicates ACP adoption by those who are qualified to apply is at 21%, which ranks Kansas in the lower third of states in the country. While that rate is low, it is rapidly rising in counties with DE-focused community organizations such as KC Digital Drive. The data indicates several targeted counties have more than doubled their ACP enrollment month-over-month for several recent quarters.

Kansas ACP Adoption Rates



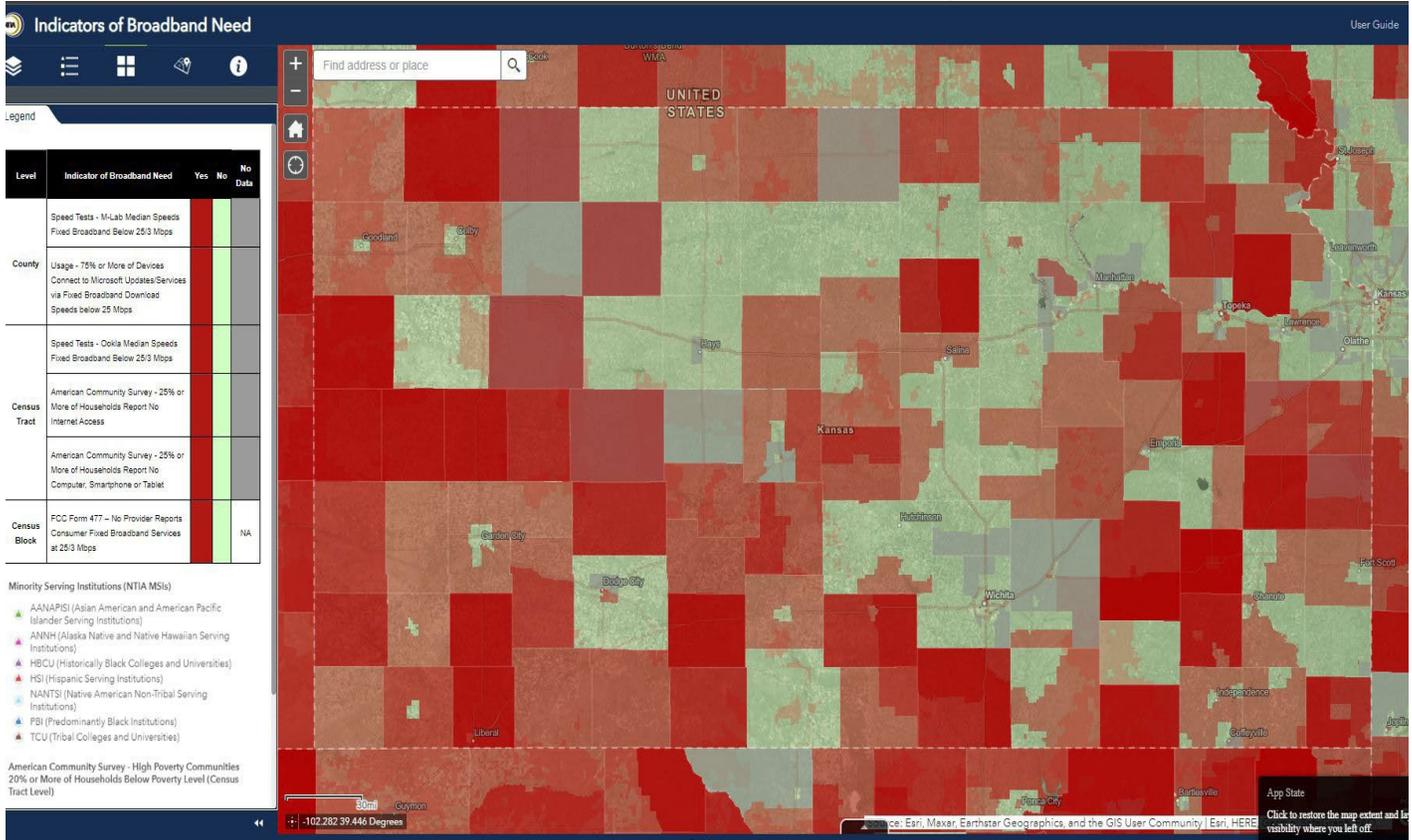
U.S. Census data from 2020 was incorporated by county to measure population, households, employer locations and square miles to determine potential subscriber density as a major factor in the cost of deployment and resulting broadband subscription. The data was then compared to the National Broadband Map (NBAM) Broadband Service Location Fabric (BSLF) locations by county for density comparison. The U.S. Census data and the NBAM data by county are comparable and reasonable for location density. Please see Appendix 6—U.S. Census to National Broadband Map (NBAM) Comparison for more information.

The NTIA Internet Use Survey was incorporated and will be used to evaluate Device and Internet Use, Non-Use of Internet at Home, Types of Internet Service, and Online Activities.

8. Data Incorporated

The NTIA Indicators of Broadband Needs Map was incorporated by county and will be used to target areas where classifications for underserved and unserved areas based on speed tests may be challenged.

NTIA Indicators of Broadband Needs Map

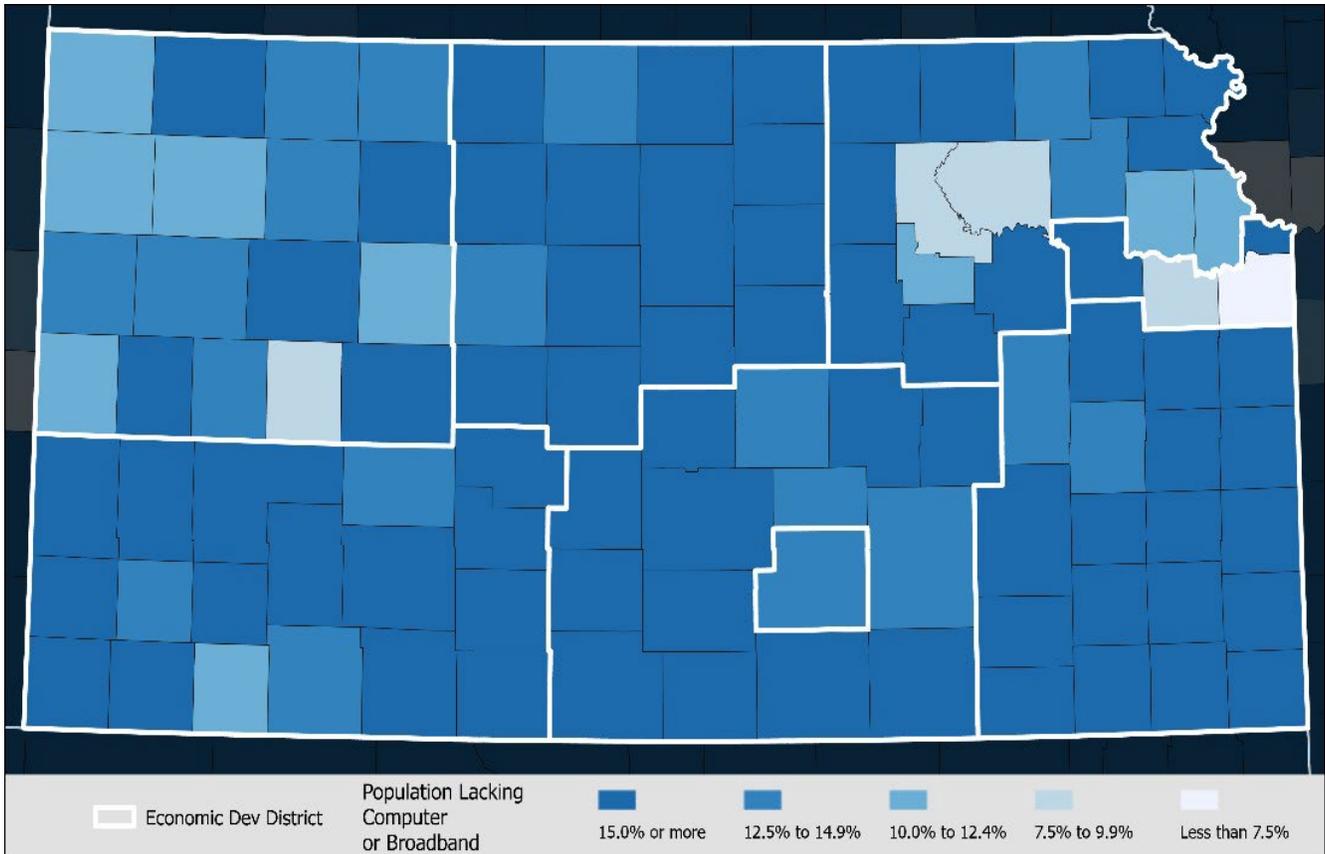


The American Community Survey (ACS) was incorporated by county and will be used to evaluate broadband penetration. The national average of Households with a Computer is 93.2%; the percentage is the same for Kansas. The national average for Households with a Broadband Internet Subscription is 86.5% compared to 87% in Kansas.

8. Data Incorporated

Please see the map below depicting populations lacking a computer or broadband and Appendix 7—Kansas Households with Broadband Assets.

Populations Lacking Computer or Broadband



In addition, KOBD examined similar states of Nebraska and Oklahoma and found comparable results for Households with a Computer of 92.8% and 92.0%, respectively. For Households with a Broadband Internet Subscription, rates were 87.3% to 84.0%, respectively. Kansas used the most recent ACS data for comparison.

State Data Sets

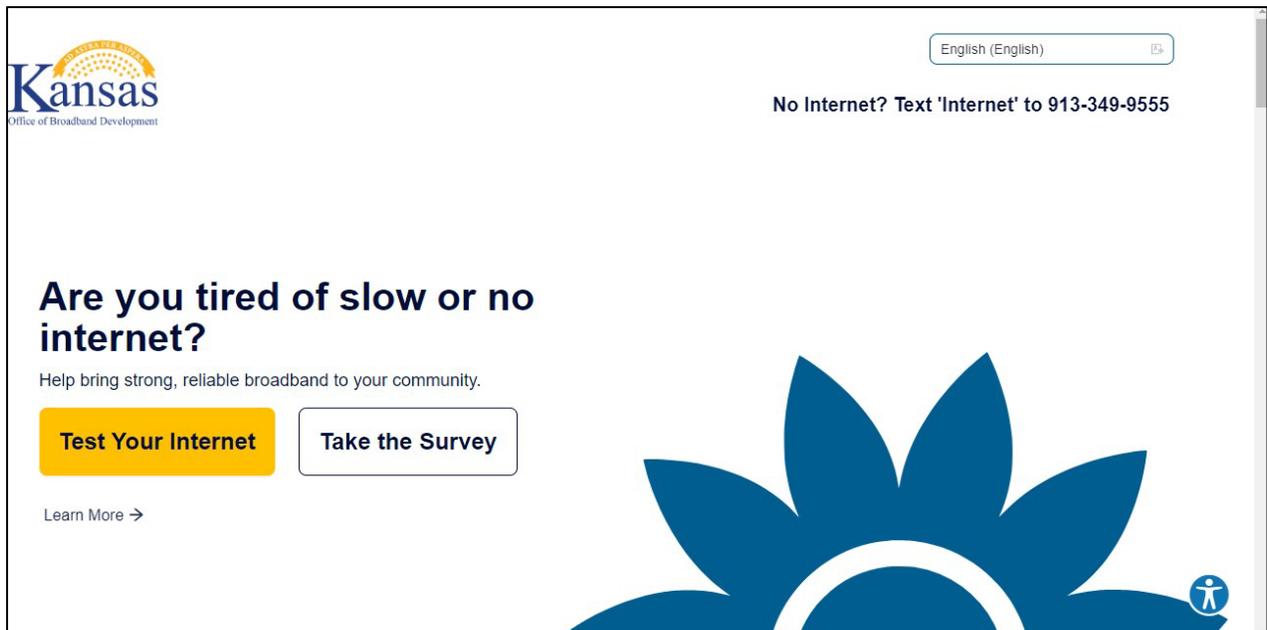
KOBD, with the University of Kansas (KU) and Wichita State University (WSU), conducted surveys measuring broadband availability, adoption and affordability with individuals and businesses. KU and WSU have additional extensive geographic data sets for representing Covered Populations. These surveys are detailed in Section 7.

KOBD is currently developing a state broadband map to collaborate with local and regional officials. A speed test and survey website (broadbandks.com) were released to the public on May 16, 2023. The speed test applies four different testing applications to assess broadband available speed at the time of the test to validate performance of the user’s broadband service (OOKLA, M-Lab, Cloudflare, and the Ready Strength Test). These industry-recognized testing strategies allow KOBD to look for anomalies that may vary from the internet service provider reports offered

8. Data Incorporated

by the FCC in the Broadband Fabric Map. Of the 6,754 tests taken as of July 17, 2023, 35% of locations were from unserved BSLs and 43% were underserved BSLs.

Broadbandks.com Website Home Page



Local Data Sets

KOBD generated and distributed regional and local surveys and speed tests, and conducted dozens of engagements with local officials, non-profits, and citizens. KOBD is in the process of gathering and summarizing affordability, adoption, and access information from our localized outreach, including the Roadshow, to best capture and measure the “lived experience” of Kansans. The work continues today with surveys, partner outreach and meetings with non-profits, associations and individuals that are champions for local broadband needs.

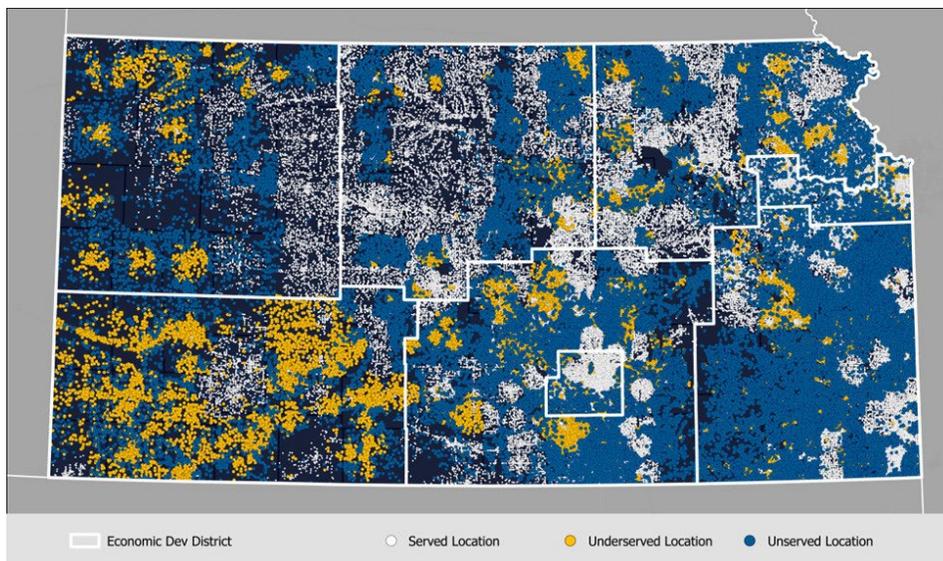


9. Needs and Gaps

Kansas currently does not have a state broadband availability map and has relied on federal broadband mapping data to identify areas lacking service. KOBD is currently creating a state map to augment the FCC Broadband Fabric Map.

KOBD worked with partners in the state to document regional gaps in reliable broadband service. According to the latest FCC Broadband Fabric Map of May 30, 2023, Kansas has 87,489 unserved broadband serviceable locations (BSLs) and 57,316 underserved BSLs for a total of 144,805 BSLs (i.e., 12.0% of BSLs in Kansas) without qualifying broadband service. These BSLs are spread through parts of the 105 counties, four Sovereign Tribal Nations, and 1,890 cities, towns, and villages that make up the State of Kansas.

Unserved/Underserved/Served BSLs



The percentage of unserved and underserved BSLs compared to total BSLs in any one county varies from .2% to 83% for the 105 counties in Kansas. Eight counties are more than 50% unserved or underserved with 37 additional counties that are over 25% unserved or underserved. These counties, where at least 25% of the BSLs in the county do not have qualifying broadband service, represent 43% of all Kansas counties which account for 45 counties. These 45 counties span each of the four corners of the state with the greatest concentration in the far west and southeast portions.

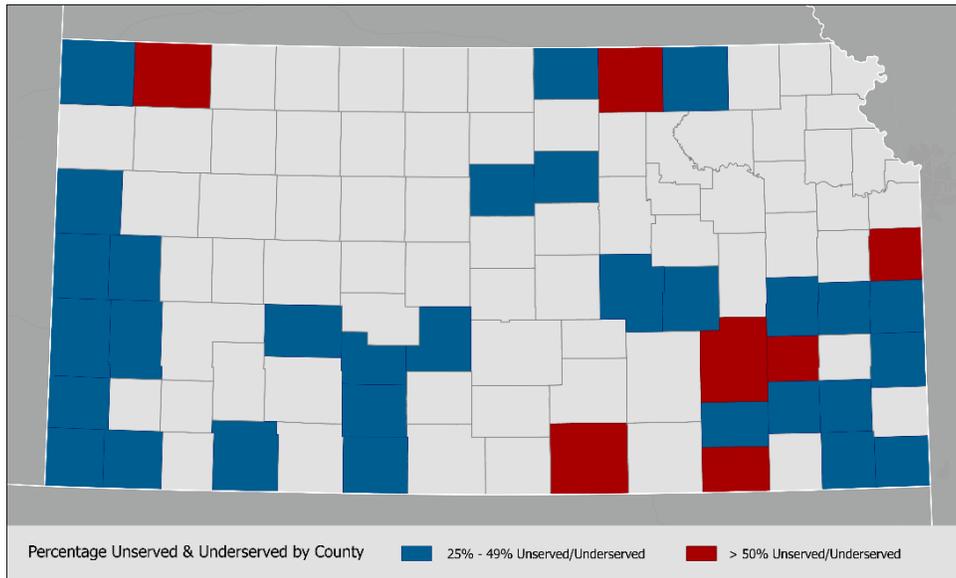
KOBD conducted extensive outreach to the provider community in Kansas to request assistance in documenting all provider routes in the state. KOBD wants to understand where infrastructure assets are available for use that might help speed community coverage or lower the cost of universal service.

This request was made via a Fiber Asset Inventory survey, conducted by the University of Kansas. Provider maps are the most efficient way to forecast optimal technology designs and projected costs. KOBD collected provider route maps from some ISPs and continues to work with others to procure this data. KOBD analyzed broadband grant applications from the June 2023 LINC grant program to determine provider interest in serving the 37 most unserved and underserved Kansas counties. Out of the 67 applications filed, only 13 of these 37 counties had an application for funding, pointing to a lack of provider interest in serving the most unserved and underserved counties, even with significant grant stimulation.

9. Needs and Gaps

Please see Appendix 8—Kansas BSLF Locations by County and the map outlining these 45 counties below.

45 Most Underserved and Unserved Counties



KOBD developed processes to make accurate determinations where broadband availability is unclear or unknown, including processes finalized by NTIA. The NTIA Model Challenge Process includes DSL Modifications, Speed Test Modifications and Area/MDU Modifications, which will be used by KOBD. Historically, KOBD managed challenge processes via an online portal.

KOBD will use the [BEAD Eligible Entity Planning Toolkit](#) to identify enforceable commitments and the federal, state, and local information on previous grant awards to ensure BEAD funding is used for unserved BSLs first, then underserved. All previous grant awards will be reviewed for the status of commitments on timelines, costs, and deployment progress. KOBD will seek commitment letters from previous subgrantees documenting their commitment to fully execute these awarded applications. Also, surveys were sent to all ISPs currently serving Kansas requesting that they identify their current broadband expansion plans.

KOBD implemented speed test tools complying with NTIA standards. The tests capture four different speed tests (i.e., OOKLA, M-LAB, Cloudflare, and Ready Strength Test) for cross-validation. In addition, the website [broadbandks.com](#) contains a survey to capture demographic information and data for BEAD and DEA purposes. These tests could eventually be used to verify BSLs, while providing valuable insight to local planning and provider discussions.

CAIs serve as the primary delivery location of digital skills, digital navigators, community identity, cultural engagement, and public safety for Kansas rural and urban counties. KOBD accepts the NTIA approved definition of CAIs, yet also recognizes the existence of unconventional CAIs, such as a local grocery store, grain elevator or park rotunda. These locations may need to be included as a CAI as they are the only places in some rural communities with space available to host community gatherings, public hearings, or emergency event coordination.

KOBD analyzed a variety of data sources to identify CAIs in Kansas. First, KOBD identified nearly 9,000 CAIs

9. Needs and Gaps

across all 105 counties, which included public and private schools, libraries, government buildings, medical facilities, public safety, higher education, public housing, and community organizations. Please see Appendix 9 for a list of all CAIs currently identified by county and type of location, which will be refined during the BEAD Initial Proposal, Volume 1 public comment period.

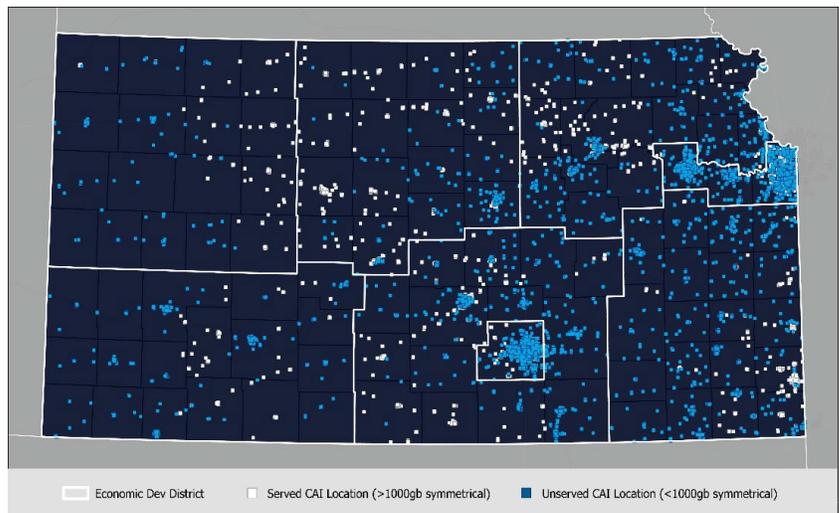
KOBD then validated the address of each CAI while assigning the National Broadband Map (NBAM) location code. Once a workable CAI list was compiled, KOBD started to reconcile the CAIs without an address, or an incorrect address, with the NBAM. Then, the list of CAIs was distributed to the eight Economic Development (ED) District managers to validate, add, delete, and edit the CAIs and help coordinate with the 105 counties as needed prior to public comment.

Feedback from the Department of Education, State Library, and the Department of Health and Environment indicates that most CAIs do not have 1Gbps symmetrical service. KOBD examined FCC E-rate and Rural Health Disbursement to CAIs and ISPs to discern billing rates versus services received. The validation of FCC E-rate disbursement data is made difficult by the fact that E-rate reporting does not disclose speed or service plan information. Data collected from representatives of multiple schools and school districts indicate many schools are not receiving the 1Gbps symmetrical speed of service they pay for. KOBD continues to work with the Department of Education, school district superintendents, and their IT vendors to identify individual schools benefiting from E-rate funding to verify actual speeds of service compared to billed speeds and the 1Gbps NOFO requirement.

KOBD studied Rural Health Care (RHC) subsidies offered by the FCC in Kansas to identify qualified healthcare or healthcare educational institutions that are receiving disbursements via the RHC program. The RHC does report service speeds in their disbursement reports, so KOBD conducted analyses on these locations to determine if they were receiving the 1Gbps broadband speed outlined in BEAD requirements. Only 19% of three hundred and 331 healthcare facilities receiving the RHC subsidy have 1Gbps symmetrical service; 48% have 100/20 Mbps; 33% had service less than 100/20Mbps.

Some critical care hospitals are running their entire operation on a 50/5 Mbps service, which prevents the electronic sharing of medical files; thereby breaking the continuity of care when patients transfer to other providers. KOBD will collaborate with the Kansas Department of Health and Environment to determine the most efficient way to share this data with impacted facilities. Those facilities can proactively work with their providers to improve service levels and KOBD can assist in these discussions, if needed. In addition, these service requirements for all healthcare CAIs will be included in the requirements for BEAD funding regardless of their participation in the RHC subsidy.

Community Anchor Institutions (CAIs)



10. Universal Service

10 a. Estimated Timeline and Cost for Universal Service

Kansas aims for universal broadband service by the end of 2029 by using all funding mechanisms available including, but not limited to, state grant funds, NTIA BEAD allocation, enforceable commitments from current grantees, local funds, and matching funds. All grant funds will be coordinated to ensure no duplication of funds or unqualified overbuilds occur.

Using the following analysis, KOBD estimates the cost of universal service for the entire state, with a mix of qualifying technologies, at \$995 million. After taking into consideration all funding sources, the estimated shortfall is \$236 million.

All BSLs were reviewed by census block, county, and region to calculate density. Location and potential subscriber density are key elements in determining the cost of universal service because they represent the projected revenues from broadband subscriptions and the providers’ ROI.

Based on Version 2.0 of the Broadband Service Location Fabric (BSLF), along with the U.S. Census data, KOBD used the number of unserved, underserved, and served locations to determine the density per square mile of BSLF locations in each of the 105 Kansas counties. Then, KOBD created four categories of density for the counties. See Appendix 11—Kansas Counties Grouped by Density for the complete listing of Kansas counties and their density statistics.

Table 8a: Counties by Population Density

Density Categories	Number of Counties
Extremely Low Density (<3 locations/square mile)	24
Low Density (3<>6 locations/square mile)	32
Medium Density (6<>20 locations/square mile)	33
High Density (>20 locations per square mile)	16

Next, KOBD examined the historical cost per location from federal and state grant programs that required a minimum speed of 100/20 Mbps. As these cost estimates are from the applicants and awardees, it provides more reliable project costs from those who perform the work (i.e., providers). Programs such as CPF and LINC, and their respective applications and awards, are reasonable proxies for the cost per location as they include the costs a provider would incur in delivering 100/20 Mbps. Of note, the historical cost in prior grant applications does not include fixed wireless technologies, as they were purely FTTH applications. See Appendix 10—Historical Cost Per Location for Qualified Broadband Service for more information.

As an example, see below the cost per location of the most current round of grant applications from LINC, which is then grouped into the four density categories:

Table 8b: Cost per Location by Population Density

Density Categories	Cost per Location
Extremely Low Density (<3 locations/square mile)	\$13,556
Low Density (3<>6 locations/square mile)	\$11,817
Medium Density (6<>20 locations/square mile)	\$7,229
High Density (>20 locations per square mile)	\$5,730

10. Universal Service

The cumulative total of project costs from reviewed grant applications is more than \$701 million with 96,674 as the total number of locations. Of these, 53,972 (56%) were awarded funding through one of the programs listed above. See below and Appendix 12—Kansas Imputed BEAD Cost per County for detailed information by county.

Then, the cost to bring universal coverage to each county with all fiber was calculated by summing the cost for each county (i.e., where the number of unserved and underserved locations for each county multiplied the historical cost of the density group to which each county was assigned). See Appendix 13—Kansas FTTH Universal Cost Estimate for more information.

Table 8C: Projected Universal Service Cost with Full FTTH by Population Density

Density Categories	FTTH Locations	Cost per Location (FTTH)	Total Cost
Extremely Low Density (<3 locations/square mile)	11,334	\$13,556	\$153,643,704
Low Density (3<>6 locations/square mile)	26,873	\$11,817	\$317,558,241
Medium Density (6<>20 locations/square mile)	54,949	\$7,229	\$397,226,321
High Density (>20 locations per square mile)	40,018	\$5,730	\$229,303,140
Total	133,174		\$1,097,731,406

It is important to note these calculations do not include the costs for provisioning 1Gbps symmetrical service to all CAIs. It is assumed CAIs will be upgraded by the providers and that any new CAI location will be included in regional plans as they are developed.

Cost Summary

Since the historical cost per location was developed on 100% FTTH grants and applications, KOBD assigned a 25% reduced historical cost per location for fixed wireless. While theoretically less expensive than FTTH, fixed wireless solutions still need tower, antennae and fiber backhaul construction, which also is expensive.

Therefore, KOBD assumed a technology mix of 25% fixed wireless and 75% FTTH for unserved and underserved locations in Kansas, with some percentage of extremely low-density locations requiring fiber assets for tower backhaul. Thus, KOBD estimates the cost of universal service for the entire state, with a mix of qualifying technologies, at \$995 million. See Table 8D below:

Table 8D: Projected Universal Service Cost with 75% FTTH / 25% Fixed Wireless

Classification	Total Locations	FTTH Locations	Fixed Wireless Locations	Cost per Location (Fixed Wireless)	Cost per Location (FTTH)	Total Cost
Extremely Low	11,334	2,267	9,067	\$10,167	\$13,556	\$122,918,636
Low	26,873	5,375	21,498	\$8,862	\$11,817	\$254,037,577
Medium	54,949	51,348	3,601	\$5,422	\$7,229	\$390,707,762
High	40,018	38,810	1,208	\$4,298	\$5,730	\$227,578,708
Total Kansas locations with FTTH/Fixed Wireless Mix	133,174	97,799	35,375			\$995,242,683
Included Fixed Wireless Assumption-Reduction						\$102,488,723

10. Universal Service

Classification	Total Locations	FTTH Locations	Fixed Wireless Locations	Cost per Location (Fixed Wireless)	Cost per Location (FTTH)	Total Cost
100% FTTH Model Cost						\$1,097,731,406
Less Reduction FTTH/Wireless Mix						\$102,488,723
Restated Kansas Universal Service Cost						\$995,242,683
Known Funding Sources without FTTH/Fixed Wireless Mix Contribution						\$758,863,621
Restated Universal Service Shortfall						\$236,379,062

10b. Utilization of Funding Sources

KOBD estimates the cost of universal service for the entire state, with a mix of qualifying technologies, at \$995 million. After taking into consideration all other funding sources, the estimated shortfall for universal coverage for Kansas is \$236 million. See Table 9 below:

Table 9: Projected Universal Cost Shortfall

Grant	Amount	Impact	Amount
BEAD Allocation	\$451,725,998	Kansas Universal Service Cost	\$995,242,683
BEAD Matching Funds at 25%	\$112,931,500		
BAG Grants (including matching funds) over 5 Year Coincident with BEAD	\$100,000,000	Less Known Funding	\$758,863,621
Known USDA grants	\$49,954,702		
LINC Program (including average matching funds)	\$40,000,000		
Realized Benefit In-Period from Middle Mile Grant-10%**	\$4,251,422		
TOTAL Kansas Known Funding	\$758,863,621	Shortfall to Universal Service	\$236,379,062

**KOBD included a 10% benefit from the awarded EMMBI grant as a funding source for realizing universal service. While the EMMBI grant is an enabler of long-term growth and network efficiencies, its deployment schedule will closely parallel BEAD infrastructure, so the immediate funding offset is limited. The realized benefits will accumulate as the work is completed and complement further conversion from fixed wireless to fiber facilities.

To address this shortfall, KOBD recognizes additional state, federal and private sources of funding will be required over the next five years. In addition, KOBD actively and aggressively seeks out other grant opportunities to augment our efforts. KOBD is working with state and federal officials to expand funding opportunities and change requirements that limit or delay deployment to encourage further investment in broadband deployment.

10. Universal Service

KOBD will leverage direct federal, state and local funding to realize universal service. See Table 10 below:

Table 10: Utilization of Other Funding Sources for Universal Coverage

Activity	Key Players	Funding Source	Expected Outcomes
Capital Projects Fund Program – ARPA (Treasury)	KOBD, ISPs	Federal	Completion of awarded projects to exceed the 100/20 Mbps NTIA standard to unserved, underserved and CAIs in the project area
Enabling Middle Mile Broadband Infrastructure (NTIA)	KOBD, KDOT, KanREN, Connected Nation, ISPs	Federal	Facilitation of last-mile projects and the removal of high-cost barriers through the buildout of open-access long-haul networks
Lasting Infrastructure and Network Connectivity Program (LINC) – ARPA SFRF (Treasury)	KOBD, ISPs	State	Completion of awarded projects to the 100/20 Mbps NTIA standard to unserved, underserved, and CAIs in the project area
ReConnect (USDA)	ISPs	Federal	Completion of awarded projects to the 100/20 Mbps USDA standard to unserved, underserved, and CAIs in the project area
Broadband Acceleration Grant (KOBD)	KOBD	State	Completion of awarded projects to the 25/3 Mbps standard for rounds one and two, and 100/20 Mbps in subsequent rounds for unserved, underserved and CAIs in the project area
Tribal Broadband Connectivity Program (NTIA)	Tribes, ISPs	Federal	Completion of awarded projects to the 100/20 Mbps NTIA standard to unserved, underserved and CAIs in the project area
E-Rate - Schools & Libraries USF Program (FCC)	Department of Education, State Librarian, ISPs	Federal	Upgrading existing services to 1Gbps and provision new 1Gbps service to all CAIs and lower pricing
Alternate Connect America Cost Model (ACAM) II (FCC)	ISPs, Kansas Corporation Commission	Federal	Completion of awarded projects to the 100/20 Mbps NTIA standard to unserved, underserved and CAIs in the project area
Rural Health Care Program (FCC)	Department of Health and Environment, ISPs	Federal	Upgrading existing services to 1Gbps and provision new 1Gbps service to all CAIs and lower pricing
Connect America Fund (Auction 903) (FCC)	ISPs, Kansas Corporation Commission	Federal	Completion of awarded projects to the 10/1Mbps FCC standard to unserved, underserved and CAIs in the project area
Rural Digital Opportunity Fund (Auction 904) (FCC)	ISPs, Kansas Corporation Commission	Federal	Completion of awarded projects to the 25/3 Mbps FCC standard to unserved, underserved and CAIs in the project area

10. Universal Service

10c. Prioritization of Areas for Federal Support

KOBD prioritizes the use of BEAD funds for broadband deployment, digital inclusion, and workforce development. These priorities are intended to maximize the public impact of the deployment of broadband infrastructure. See Table 11 below for priority funding areas:

Table 11: Prioritization of Areas for Federal Support

Priority	Category	Description
Leverage Existing Assets	Access	Identify, prioritize, and incentivize applications that use existing infrastructure and past and current project awards.
High-Cost Location Deployment	Access	Identify, prioritize, and incentivize for areas with higher subsidy needs in the competitive grant process.
Ensure connectivity across all Multi-Dwelling Units (MDU)	Access	Invest in Wi-Fi access to MDUs, targeting low-income and affordable housing.
Speed to Market	Access	Prioritize and incentivize infrastructure projects with completion dates within 24 months of award.
Sustainability	Access	Require deployment awards to demonstrate their sustainability of broadband services including maintenance and operations of the network and back-office customer service operations.
Supply Chain	Access	Prioritize and incentivize applications that have existing supply chain partners and have commitments for the broadband infrastructure components in place for infrastructure deployment.
Adoption Outreach	Adoption	Identify, prioritize, and incentivize applications that partner with ISPs, state, local and regional authorities to facilitate continuous outreach and develop new methods.
Public Outreach and Engagement	Adoption	Prioritize engagement efforts to communicate funding opportunities and promote the use of ACP.
Promote the use of ACP	Affordability	Prioritize engagement to promote ACP programs for device subsidies including Wi-Fi routers and modems for MDUs.
Price stability	Affordability	Prioritize infrastructure applications that offer long-term price stability (i.e., five years).
Increase availability of digital skills programs	Digital Equity and Inclusion	Identify, prioritize, and incentivize applications that partner with local partners supporting covered populations to deploy digital skills training.
Digital Navigators	Digital Equity and Inclusion	Identify, prioritize, and incentivize applications that partner with local partners supporting covered populations to identify locations for digital navigators and secure funding to sustain.

10. Universal Service

Table 11: Prioritization of Areas for Federal Support Cont.

Priority	Category	Description
Career Opportunities in Disadvantaged Areas	Digital Equity and Inclusion	Identify, prioritize, and incentivize applications that promote broadband industry career opportunities and broadband skills development in areas focused on covered populations.
Expansion of Agriculture Technology	Digital Equity and Inclusion	Identify, prioritize, and incentivize applications that promote digital skills for agriculture-based businesses using precision agriculture methods.
Expansion of Remote Learning	Digital Equity and Inclusion	Identify, prioritize, and incentivize applications that promote remote learning programs and expand to ensure every Kansan has access to K-12, higher education, special/disability education, and job training programs.
Expansion of Telehealth	Digital Equity and Inclusion	Identify, prioritize, and incentivize applications that promote federal and state opportunities for healthcare providers to submit for telehealth reimbursements, including Medicare and Medicaid to improve service and reduce cost.
Cybersecurity	Digital Equity and Inclusion	Identify, prioritize, and incentivize applications that educate residents and businesses on current threats to personal and business security and how best to protect themselves.
Workforce Development	Economic Development	Identify, prioritize, and incentivize applications that expand broadband technician apprenticeships and formal training programs.
Location Expansion	Economic Development	Identify, prioritize, and incentivize applications that identify expansion of new commercial, industrial, and residential properties and require Dig Once, egress, and supporting infrastructure such as conduit and poles.
Streamline permitting processes	Economic Development	Work with local, state, federal, railroad, electric and other entities to develop streamlined permitting processes for ROW and pole attachments.
Survivability	Resiliency	Identify, prioritize, and incentivize applications that include deployment projects with redundant and diverse facility paths to minimize service disruptions.
Climate protection	Resiliency	Prioritize and incentivize infrastructure projects that maximize protection against climate events, including tornadoes, floods, wildfires, and other events common to Kansas.
Community Anchor Institutions	Resiliency	Prioritize and incentivize infrastructure projects that address redundancy and diversity of facilities for CAIs, including public safety, medical and other critical “first responder” institutions.

10d. Public-Private Partnerships

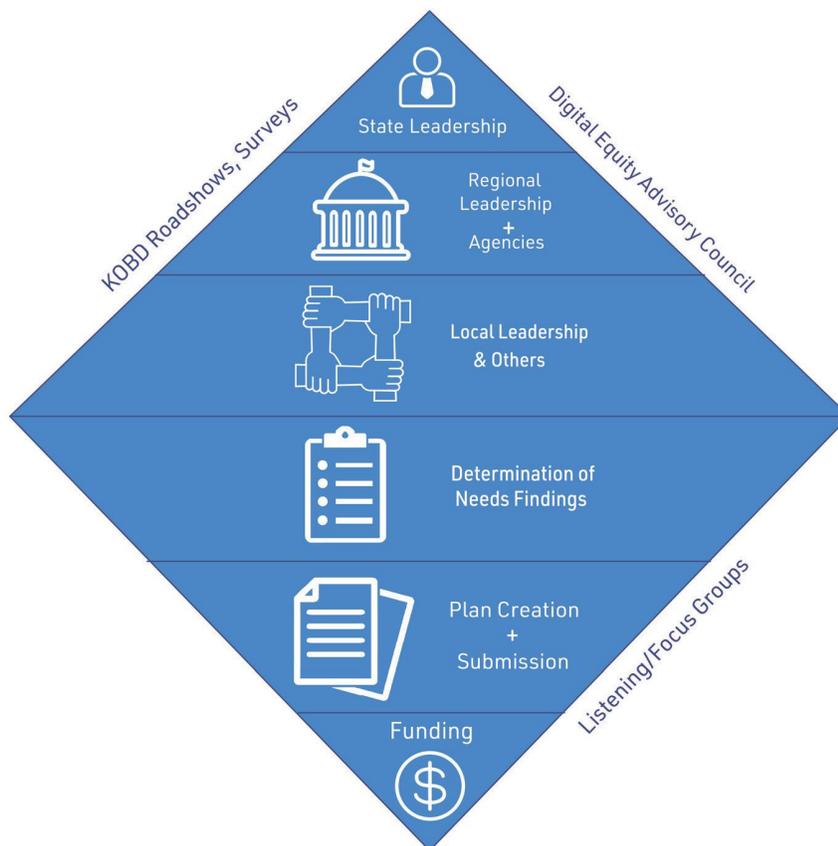
KOBD encourages the use of public-private partnerships and cooperatives to realize universal broadband coverage in Kansas. Partnerships are critical to the efficient deployment of infrastructure, especially where limited resources and varying obstacles to broadband expansion exist. Partnerships and cooperatives also are instrumental for the

10. Universal Service

Digital Equity Plan, as these entities promote and deliver digital skills throughout Kansas. The key goal is to identify entities and individuals who may serve as “broadband champions” for regional and local outreach support.

KOBD used a multi-tier process to identify local, regional, state, and ISP partners to facilitate coordination between the regional and local tiers throughout the outreach process. A list of regional and local partnerships and cooperatives in each Kansas county was compiled for each of the eight Economic Development Districts (EDD).

The EDD managers assisted in identifying regional agencies, local associations with existing partnerships, and those interested in developing a new partnership(s) for broadband deployment and digital equity in their region. This effort led to the identification of more than 9,000 potential partners throughout Kansas.



10e. Strategies to Address Affordability

KOBD has several strategies to address affordability issues, including promotion of the Affordable Connectivity Program (ACP) to increase enrollment, reduce the cost of device ownership, and decrease the costs of line extensions.

Kansas currently ranks 35th in the nation for ACP subscriptions. To increase enrollment to ACP, KOBD will:

1. Work with social services agencies and organizations that administer ACP-qualifying programs (i.e., SNAP, WIC, TANK, etc.) to promote and assist those attempting to enroll in ACP.

10. Universal Service

2. Work with social services agencies and organizations that promote programs with covered populations to promote ACP through direct and social media outlets.
3. Require ISP subgrantees to offer and promote ACP with current and new subscribers.
4. Partner with Education Superhighway to develop a statewide outreach campaign focused on ACP.
5. Continue the use and promotion of the FCC ACP Outreach Tool Kit.
6. Coordinate with the ACP Outreach grantees (e.g., City of Topeka, Kansas City Digital Divide, and Wichita State University) to develop best practices and expand outreach across Kansas.
7. Promote ACP on Sovereign Nation Tribal lands in Kansas and emphasize the greater level of available support to them.

Ownership of internet-enabled devices, such as laptops and desktops, is limited in unserved and underserved households due to cost constraints. To decrease the cost of device ownership, KOBD will:

1. Encourage providers to offer devices to those enrolled in ACP.
2. Investigate a bulk purchase contract with retail stores, device manufacturers, and/or warehouse devices for widespread distribution.
3. Work with social services agencies and organizations that administer ACP-qualifying programs (i.e., SNAP, WIC, TANK, etc.) to promote and assist with the ACP device program applications.
4. Research and implement device ownership best practices.

Feedback from rural Kansans reveals the cost of broadband installation can be burdensome, especially for locations far from a ROW, as the extension of the line to their home can cost thousands of dollars. This is particularly true for farmsteads, large lots and other structures located far from the splicing point. To decrease the cost of line extensions, KOBD will:

1. Develop a “Line Extension” grant program to offset the installation and provisioning costs. Requests for broadband service would be aggregated geographically and bid to ISPs for installation. These requests represent a 100% captured sale for the ISP and minimize the cost of installation by limiting the number of truck rolls, associated labor and permit costs.
2. Encourage implementation and conformity with “Dig Once” provisions, particularly when new addresses are under construction.
3. Leverage “reuse” of existing ROWs, private property and utility easements by ISPs to minimize impacts of line extension activities.

KOBD will develop other ways to address affordability in the Digital Equity Plan, BEAD-IP and BEAD-FP.

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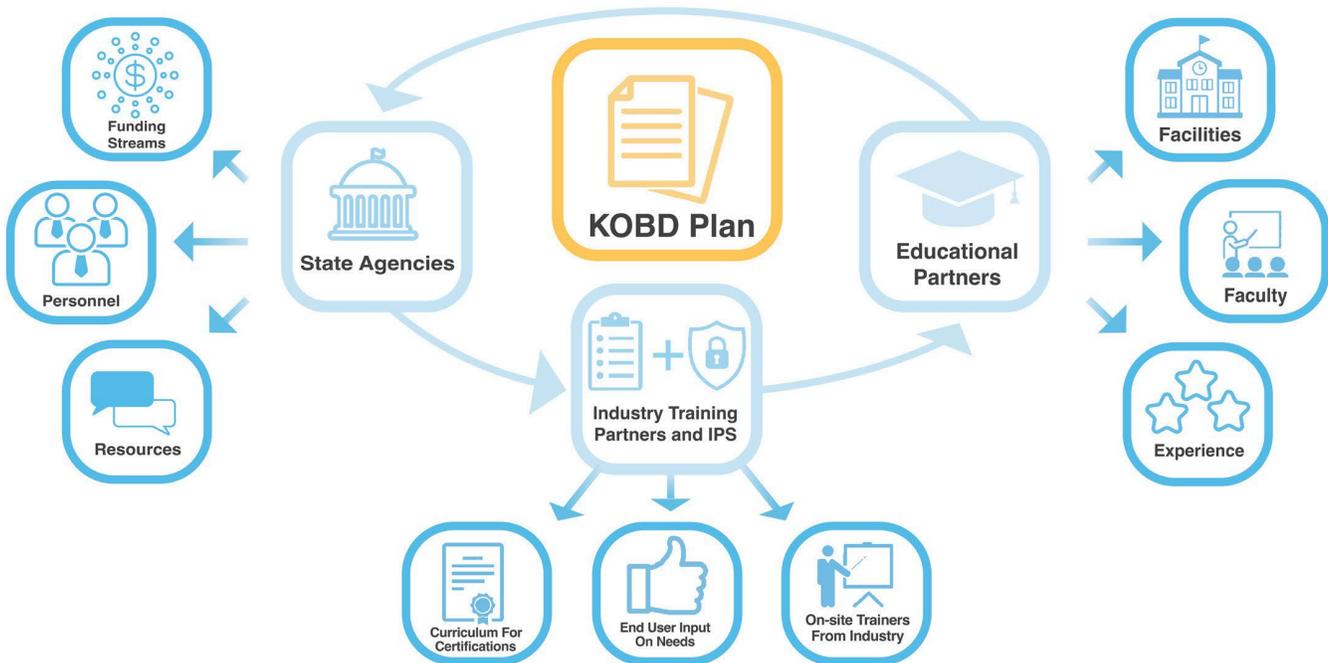
10f. Workforce Development

KOBD, in partnership with key stakeholders, considered the strategies, programs and policies necessary to assure a diverse and skilled workforce is in place to meet the goals of universal coverage. KOBD conducted local public listening sessions across Kansas and partnered with regional, state and national organizations to craft strategies to attract, retain, and transition the needed workforce. Surveys were sent to stakeholders and outreach was made to various educational entities. Most noted the lack of a skilled workforce as a major concern.

As the Kansas Department of Commerce (KDC) is responsible for workforce development, KOBD works closely with KDC's Workforce Services division and the Office of Registered Apprenticeships. KOBD also collaborates with the Kansas Board of Regents, community colleges, K-12 institutions, broadband providers, and industry partners to align broadband workforce development goals.

Kansas Office of Broadband Development Workforce Development Planning

This model facilitates continuous communications between all parties to ensure goals are met



KOBD plans to allocate a portion of BEAD funding toward the development of apprenticeships and community and technical college training programs that educate and train broadband industry workers. See the activities and job roles KOBD will be targeting to develop a diverse and skilled workforce needed in Kansas below:

10. Universal Service

Activities and Job Roles in Fiber Broadband & Wireless Networks

Activity	Job Roles	Pre-Construction	Construction	Post-Construction
Network Planning	<ul style="list-style-type: none"> • Network Planner • Network Designer • Project Manager • Estimator 	■		
Surveying	<ul style="list-style-type: none"> • Land Surveyor • Pole Surveyor • OSP Engineer 	■		
Permits	<ul style="list-style-type: none"> • Permitting Officer 	■		
Procurement	<ul style="list-style-type: none"> • Procurement Lead 	■		
Network Construction	<ul style="list-style-type: none"> • Laborer • Pole/Anchor Foreman • Tower/Antenna Forman • Safety Lead • Locator • Quality Inspector • Field Engineer 		■	
Tower Construction	<ul style="list-style-type: none"> • Tower Technician • Wireless Technician • Tower Climbers 		■	
Fiber Splicing	<ul style="list-style-type: none"> • Fiber Optic Technician • Splicer Technician • Fiber Lineman 		■	
Optical Network Installation & Commission	<ul style="list-style-type: none"> • Fiber Technician 		■	
Wireless Network Installation & Commission	<ul style="list-style-type: none"> • Antennae Installers • Wireless Technician • Electrician 		■	
Customer Installations	<ul style="list-style-type: none"> • Premise Installation Technician • Customer Support representative 			■
Field Maintenance	<ul style="list-style-type: none"> • Maintenance Technician 			■

KOBD highlights three projects underway in this effort.

First, KOBD is working with the Wireless Infrastructure Industry Association (WIA) to create training curriculums within the community and technical college system. WIA serves as the Federal Department of Labor’s designated Industry Intermediary for Registered Apprenticeship in the telecommunications industry and was awarded a four-year contract to work with telecommunications companies to expand apprenticeship through the Telecommunications Industry Registered Apprenticeship Program (TIRAP). TIRAP focuses on improving training and expanding Registered Apprenticeships for high-growth, high-demand occupations critical to broadband deployment. WIA’s

Telecommunications Education Center (TEC) is the leading developer of training and curriculum for the telecommunications industry, offering more than 40 courses tailored to the training, education, and professional development needs of the industry. KOBD and WIA are delivering this expertise and workforce training to the citizens of Kansas.

KOBD and WIA are in the early stages of a partnership with the following three community and technical colleges in Kansas: (1) Colby Community College, (2) Dodge City Community College, and (3) Garden City Community College. These community colleges are in rural counties and are not within proximity of existing training centers.

10. Universal Service

Second, KOBD is developing partnerships with our providers to leverage industry-created content and training programs. For example, two rural providers headquartered in Kansas, NexTech and Ideatek, are assessing and summarizing workforce development needs, including manufacturer training and certification. These assessments will give KOBD insight into workforce hurdles and help design ways to collaboratively address constraints. Amplifying recruitments efforts through marketing channels, facilitating contacts with other providers who have similar training needs, and identifying appropriate curriculum partners are ways to collectively benefit industry labor needs.

Third, KOBD is working with the Kansas Board of Regents, Kansas Association of Community College Trustees, the Kansas Association of Technical Colleges, the Kansas Independent College Association, and others to promote broadband curriculums across Kansas. Two community colleges are expanding broadband and fiber training programs that are already in place.

Butler Community College (Butler) created a “Certified Fiber Technician” training program by working with the Fiber Optic Association on a curriculum that offers students hands-on education. Butler has two training semesters per year, averaging a dozen students in each session. Moreover, Butler has the desire and facility space to grow the program curriculum at any of their campuses in Kansas. The challenge for this program is the need for additional trainers and more partnerships with providers. KOBD will support this program by working with other state workforce agencies to help identify and provide potential students and trainees. The office also will pursue opportunities to create “train the trainer” programs to expand the base of qualified instructors throughout Kansas. KOBD also will work with state partners to identify opportunities to obtain space, equipment, and trainers to help the institution expand this program.

North Central Kansas Technical College (NCKTC) is interested in expanding their broadband training program that operates in cooperation with a local service provider. The program currently has six students enrolled and they have already filled next year’s enrollment capacity of 12. However, the planned departure of the instructor for this program has created a critical need for his replacement. KOBD will support this program by working with NCKTC to find the most effective means of recruiting students from across the state, develop expanded curriculums, create linkages to apprenticeships and certifications, as appropriate, and collaborate to find the resources necessary to ensure their expansion and success.



KOBD maintains a strong history of requiring fair labor standards in prior grant programs. Through partnerships with the Kansas Department of Labor and others, KOBD is committed to the continuing integration of fair labor standards into our BEAD programs and will provide our award-winners clear instruction to meet federal labor and employment requirements. KOBD will assure applicants are aware of all NOFO requirements during the grant process. KOBD also will require binding commitments to support compliance with federal labor standards and protections for all grant applications and awards. Kansas’ digital equity efforts also will provide workforce benefits by addressing the necessary upskilling of workers who lack digital skills.

11. Digital Equity

11a. Vision for Digital Equity

Broadband access and adoption are some of the most important tools for individual, economic, and community success in the 21st century. From its inception, KOBD partnered with state leaders to help connect with Kansans who face barriers to accessing and adopting broadband. During the COVID-19 pandemic, KOBD programs such as the Broadband Partnership Adoption Grant (BPAG) program, were aimed at digital inclusion. Through those efforts, KOBD created the Digital Equity Advisory Council (Advisory Council) to build a comprehensive vision and goals for digital equity, which is as follows:

Ensure that all Kansans can enjoy their universal right to education, healthcare, employment, social services, and participation in the digital economy at home. These rights hinge on equitable access to quality and reliable high-speed broadband at affordable prices, the training required to support digital skills, and the devices and sustainable technical assistance needed to strive and thrive across the entire state.

- Where you live is not a determinant of how you participate in the digital economy
- Future-proofed broadband infrastructure is available to all Kansans
- All Kansans have access to the needed technology devices, education and training to actively enjoy broadband access and the doors that it opens in our society
- Every location in the state of Kansas that is central to a community and its ability to support its residents is considered a Community Anchor Institution (CAI) in our society

KOBD will take full advantage of this opportunity to build more on-ramps across Kansas for our covered populations to expand digital literacy and develop digital skills.

Most of this material is referenced and expanded upon in the full Digital Equity Plan.

11b. Asset Inventory

Asset Inventory of Ongoing Digital Equity Activities

KOBD used multiple avenues of information to accomplish this asset inventory. KOBD partnered with the University of Kansas (KU) to conduct a survey focused on Kansas digital equity leaders, which was based on the National Digital Inclusion Alliance's (NDIA) asset map template. The Advisory Council was, and remains, an invaluable resource as each member introduced more digital inclusion connections as DE efforts progressed around the state. Dozens of conversations with state agencies were held to enhance understanding of the state's network of existing digital equity programs. Information also was generated from the many local leaders who attended the Roadshow. Below are some important statewide digital equity assets documented during these discussions:

- Kansas Library Association (KLA) and the local library system: The three hundred and thirty-seven (337) libraries across the state, along with the support of KLA, emerge as a critical resource. Continually responding to the needs of their communities, libraries are important CAIs with a long tradition of making computer access available to those without connectivity at their home, training those who need to build digital skills, and providing technical and content support to those learning to navigate these resources.

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- **Kansas Board of Regents:** As part of their Workforce Innovation and Opportunity Act (WIOA) commitment to the Kansas Department of Commerce, the Board of Regents administers “Accelerating Opportunity: Kansas” in 17 community and technical colleges. This program offers access to job training for individuals who qualify for WIOA benefits. A digital literacy software program, Northstar, assesses individuals and their digital skill levels as part of this program.
- **Kansas Department of Education (KSDE) and the local school districts:** KSDE responds to the education needs of Kansas’ K-12 student population. During the COVID-19 pandemic, assessing and addressing students’ broadband access became a critical focus. Digital literacy and skills development are interwoven with standard student curriculum. For instance, the state adopted Career Standards and Assessment Services (CSAS) to help students access career pathways that lead to meaningful employment. KOBD and KSDE will align the growing broadband workforce needs with this program.
- **Kansas Health Foundation (KHF):** A leading funder of digital equity work, KHF has three key purposes: empower Kansans to lead the nation in health; (2) eliminate inequities that create health disparities; and (3) become the model for philanthropic impact. Digital equity is a funding priority for KHF, making them a powerful advocate for DEA efforts.
- **Kansas Farm Bureau:** Acting as the voice of agriculture in the state, Kansas Farm Bureau is extremely active in advocating for better broadband service in rural communities. Examples include mobilizing members to attend the Roadshow, creating a broadband survey for their members (which was shared with KOBD), and being a constant and reliable resource on DEA issues.

Digital Inclusion Assets by Covered Population

Dedicated state departments and agencies, generally supported by federal and state funded programs, provide support to covered populations. The Department for Children and Families, the Department for Aging and Disability Services, the Department of Corrections and the Department of Health and Environment all are engaged in a collective effort to expand digital equity resources and address DEA needs in the state, despite their varying missions and scopes.

A complete, yet constantly evolving, list of DEA organizations will be found in the full Digital Equity Plan.

Many non-profit organizations may not see digital equity work as central to their mission. Yet because their service population expresses a need in this area, the organization pivots to include digital inclusion and equity initiatives to address the need. This organic growth into digital equity work is a common trajectory KOBD heard about on the Roadshow.

11. Digital Equity

The table below demonstrates the support for the enumerated covered populations, including state agencies, statewide resources that serve a particular covered population, and an example of a non-governmental entity focused on digital equity. See Table 12 below:

Table 12: Digital Inclusion Assets by Covered Population

Covered Population	Digital Equity Asset
Individuals who live in covered households	State: Department for Children and Families Other: KC Digital Drive
Individuals who primarily reside in a rural area	State: Kansas Farm Bureau Other: Peabody Township Libraries, Economic Development Districts, USDA
Veterans	State: Commission on Veterans Affairs Other: Tech for Troops
Individuals who are members of a racial/ethnic minority: African American	State: Kansas African American Affairs Commission Other: NAACP chapters
Individuals who are members of a racial/ethnic minority: Hispanic	State: Kansas Hispanic & Latino American Affairs Commission Other: Toolbox
Individuals who are members of a racial/ethnic minority: Asian / Pacific Islander	State: NAAAP - Kansas Chapter Other: United States Pan Asian American Chamber of Commerce
Individuals who are members of a racial/ethnic minority: Tribal Nations	State: Tribal Liaison, Governor’s Office Other: Tribal Leadership
Individuals with disabilities	State: Department for Aging and Disability Services, Kansas ADA Coordinator Other: Assistive Technology for Kansas
Incarcerated (“Justice Involved”) Individuals	State: Department of Corrections Other: American Prison Data Systems (APDS.works)
Aging Individuals	State: Kansas Department for Aging and Disability Services Other: AARP Kansas
Individuals with a language barrier	State: Kansas Hispanic and Latino American Affairs Commission, English to Speakers of Other Languages (ESOL), Kansas Relay Center Other: International Rescue Committee Kansas, Kansas City Catholic Charities, Catholic Charities of Northeast Kansas

11. Digital Equity

Existing Digital Equity Plans

As Kansas communities begin to tackle their broadband accessibility, affordability and adoption issues, several cities, counties, and regions will only be beginning their digital equity efforts. To that end, widespread digital equity plans are not available currently.

However, two entities have started the process of developing digital equity plans. First, the City of Topeka began the two-year process of creating a digital equity plan, which is set to be completed by 2024. Second, Mid-America Regional Council (MARC) created a “Kansas City Regional Digital Equity Plan” for the Kansas City, Kansas (KCK), and Kansas City, Missouri (KCMO) areas.

As the need for digital equity plans becomes paramount for our communities, KOBD will support these efforts and understand how these forthcoming plans will be incorporated into the Digital Equity Plan.



11. Digital Equity

11c. Needs Assessment

Covered Population Needs Assessment

Through focus group conversations with members of the enumerated covered populations, listening sessions with state agencies and organizations conducting DEA work, various survey results, and Roadshow conversations, KOBD actively listened to the individuals and organizations that support the communities and members of covered populations. The barriers and needs of the covered populations for full participation in the digital economy are found below.

Individuals who live in low-income households

Broadband adoption rates for low-income households tend to be lower than that of the general population due to prioritization of funds for other essential needs. Despite the availability of adoption and affordability programs, such as ACP, many individuals either do not know about these programs or fully appreciate the benefits of having access to the internet.

Affording internet enabled devices and having the digital literacy to use the devices is a continual barrier for members of this covered population. Even if a household qualifies for other supportive subsidies (e.g., WIC, SNAP, Lifeline, etc.), they still may be unaware of ACP, device purchasing programs, or loan programs. Exacerbating the problem is inconsistent support from county to county. For instance, some counties have higher rates in purchasing devices in comparison to others, which could be due to case workers effectively using the program in one county, but not another. Plus, there is evidence to suggest that ACP has not been clearly communicated to all case workers. Clearly, a concentration of resources is needed for ACP outreach.

The lack of cybersecurity training also can act as a deterrent to broadband adoption by this covered population.

Individuals who primarily reside in a rural area

Deployment of broadband infrastructure in rural areas has historically been inconsistent and unreliable. In the Farm Bureau survey, rural partners acknowledged public resources and services are miles away from many rural residents, especially in the western portion of the state, driving the need for infrastructure to be expanded in these traditionally difficult to reach areas. Expansion of these services requires grant supported projects, and BEAD will be effectively used in these areas.

Agriculture is a predominant force in Kansas' rural communities and is a key industry for the state. Agriculture also is becoming more technology dependent, which makes connectivity to active farmland — which in some cases can be hundreds or thousands of acres — more necessary than ever. In WSU's report from the Roadshow, agricultural partners emphasized how broadband access must be delivered through the last acre, not the last mile ("broadband to the acre").

Another concern for the agricultural community is the need for safe and secure infrastructure. From WSU's report, rural partners stated "everything from livestock auctions, sales, marketing, market trading, invoicing, and other basic business activities rely on a secure network. Business financials should not become prey for cybersecurity threats." Without an eye on cybersecurity, this remains an issue for our farms.

Given the BSL data identifies structures that are unserved or underserved, extending broadband access beyond physical structures must also be part of the planning process.

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Veterans

The Kansas Commission on Veterans Affairs explained two common problems related to veterans’ use of broadband: (1) affordability of broadband connectivity and (2) awareness of ACP or device programs. There is evidence to suggest that not all veteran services points of contact are familiar or properly trained with these newer affordability programs. Access to employment training and opportunities often relies on digital skills, which presents a significant barrier for many veterans, especially for those who are unhoused.

Older veterans have specific barriers to using technology because of a lack of digital literacy and training. Those in this group tend to be on limited or fixed income with little computer literacy and limited access to technology.

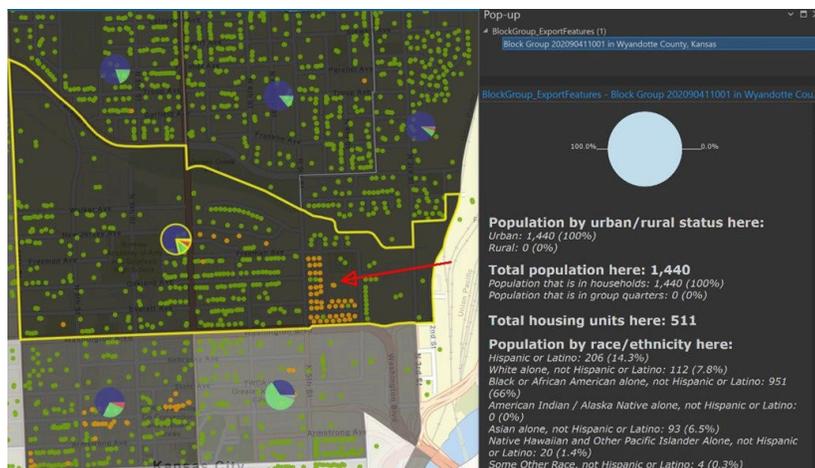
The health of veterans and the need to access telehealth was of specific concern and highlighted often in conversations. In WSU’s broadband survey, of those who identified as a veteran, 26.1% believed training would help them with online doctor visits, while 29.8% did not know where to go for help with digital skills.

As observed on the Roadshow, the western portion of the state lacks veteran affairs locations, which amplifies the importance of online access to those benefits. Telemedicine is a critical outlet because these services for veterans, including medical and mental health support, are not available in person unless one travels far from home. If a veteran lives in an area without broadband infrastructure, access to these services becomes virtually non-existent, and the veteran will likely not receive needed services. To fill this need, Kansas Workforce Centers offer a local veteran representative who can help assist in employment services, training, and education, and offer referrals to other veteran programs.

Individuals who are members of a racial/ethnic minority

Most of Kansas’ African American population resides in or near densely populated urban locations. Affordability is a barrier, but not the only significant one.

Another key barrier is that despite being near densely populated areas that are served, there remain large areas that are unserved (“the donut/donut hole” paradox). Neighborhoods with higher percentages of African American residents had speeds that registered as underserved, compared to neighborhoods with a different demographic make-up. This is particularly true for those who reside in MDUs that need equipment and wiring upgrades to improve unit access. An example of this is shown below. The census block group highlighted, which includes 66% African American residents, depicts one block as underserved despite proximity to served areas.



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A visual check shows this block consists of MDUs that should be considered for equipment upgrades, potentially through BEAD funding.



Low-income thresholds and language barriers are prevalent in other Kansas markets like Dodge City, Garden City, Wichita, and Liberal. These cities all have growing migrant populations that experience multiple barriers beginning with language. Given that these locations are important in meat-packing, farming, and dairy operations, they are critical to the Kansas economy and are expected to continue their growth patterns.

Additionally, Kansas City, Kansas is, a sprawling metro area with unique challenges and opportunities. The city is struggling with issues given a highly diverse, high needs population along with a multitude of small, distributed 'downtown' areas amidst residential neighborhoods. These smaller "downtown areas," defined by geography and multi-ethnic populations, have significant need for revitalization and investment and purportedly lack sufficient access to business class broadband services, a deterrent to spurring small business development in these areas. The small businesses could help to educate, employ, and support the multi-ethnic populations by investing locally to enrich the communities around them.

The Kansas City, Kansas, Unified School District (USD500) reports a highly diverse student population (55% Hispanic, 24% African American, 9% Caucasian/White, 6% Asian American, and 6% Pacific Islander/American Indian/Native Alaskan) speaking more than 65 languages.

All of these factors, plus the extremely rural areas of the state impacted by very low density, few business hubs, and poor broadband coverage give a view to the disparate nature of need across the entire state to ensure that all Kansans can not only participate, but thrive, in the digital economy. There also are inter-generational needs where family communication and connections are part of their native cultures. For instance, in a specific focus group conversation with the Hispanic population in Ford County, many in attendance worked at the local meatpacking facility. The lack of a reliable and quality internet connection was an important point. In emergencies, there was no way to communicate with family members, especially children. Focus group attendees mentioned how digital literacy and skills training were not part of the onboarding or continuing education of their jobs and would be welcomed and helpful. Moreover, important work-related documents such as paystubs, certain forms, and access codes, are online. Training in digital skills would be beneficial, although it was noted that the training must be the right amount at a rate that can be absorbed.

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Speaking with the Sovereign Tribal Nations in dedicated consultations, KOBD learned how Tribal members struggle with signing up for ACP, even if there is connectivity, due to the cumbersome process. Each of the Tribal consultations revealed that while the tribes may have slightly different approaches to solving their affordability and digital literacy problems, these needs are universally on the minds of Tribal leaders.

Individuals with disabilities

KOBD held various listening sessions with key agencies that support individuals with disabilities, including the Assistive Technology for Kansans, and citizens who identify as or support someone with a disability. These firsthand experiences highlighted how their broadband access issues intertwine with their health-related needs. Specifically mentioned were telehealth and mental health services. If a reliable and quality broadband connection is not available, phone support is the only outlet, which is severely limiting. Most of the programs that provide the appropriate services for their disability are online.

The cost and training of special equipment designed for those with specific needs was raised as well. Funding to sustainably support these tools was listed as a need. Access to supportive additional services, like instruments that can translate into braille or other necessary supportive services, needs to be more robust in the state.

Incarcerated (“Justice Involved”) individuals

The Department of Corrections (DOC) is working to support the needs of justice involved populations while being mindful of connectivity firewalls needed in a prison setting. Many of the conversations focused on individuals nearing the end of a sentence or re-entering the general population. In a specific focus group conversation with justice involved individuals, formerly justice involved individuals and staff who oversee and assist these populations, KOBD learned not all corrections facilities have access to robust broadband services. Not only does this hinder the digital skills and literacy of the justice involved individuals, but it also creates security risks during outages. Redundant, robust services for broadband access should be considered as a security need.

This focus group discussed how unstable, unreliable broadband access affects their daily lives while in prison. When service goes down, the lack of reliable broadband hampers access to resources and prevents connections with loved ones that provide emotional support. As an example, a focus group member explained how the inability for the facility to download music in jail can put a serious strain on the Justice Involved population.

For those re-entering the general population, many start their post-incarceration cycle with a government-issued cell phone. This limited-in-utility cell phone does not allow for two-factor authentication, which often is needed to access governmental assistance programs and job application sites. The affordability of broadband service is the next barrier, as many formerly justice involved individuals are financially constrained when re-entering. Deciding between core necessities and a broadband connection is a difficult choice when beginning a new life in today’s digital economy.

Applying online for jobs and social services also was mentioned by this population, with training and support as points of emphasis. For many who are re-entering, ongoing technical support and training are necessary. DOC built some programs for individuals close to the end of their sentence to begin this work; however, security features in place create barriers to this upskilling.

Continuity of job training and skills training also relates to recidivism, and DOC pointed toward a need to build more programs that develop job certification for justice involved individuals prior to re-entry.

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Aging Individuals

“Aging in place” is a major concern for older adults who reside in areas that currently do not have reliable or quality internet service. In counties with higher populations of citizens 65 and older, the ability to access telehealth and medical services online, such as long-term monitoring, telemedicine visits, and access to care, is crucial to the success of this covered population.

From WSU’s broadband survey, 44.7% of older adults use the internet for online doctor visits, 74.5% spend more than four hours a day online, 28.9% do not know where to go for internet help, and 10% disagree or strongly disagree they know how to use the internet (compared to 5% of the general population).

In our surveys and listening sessions, older adults emphasized the importance of using broadband connections to reach loved ones. Those who live in rural areas with little to no broadband infrastructure experience periods of isolation because video chats with loved ones are not an option.

Understanding how to use the internet also is a barrier to older people across Kansas. The speed at which devices are upgraded is a challenge for individuals who are not familiar with or native to technology. Another important concern is safety when using devices and technology. Security precautions, and how to identify criminal activity, is a concern and an ongoing risk for the older population, especially for those on a fixed income.

Individuals with a language barrier

For members of this covered population, barriers can arise at all points in the access and affordability of broadband services. If a digital navigator is not available to assist, an application process can be too confusing to complete. If there are any issues when the equipment is being installed at their home, the installer may not be able to successfully install the equipment. Digital navigation of resources is immensely important to this covered population, given resources of all types now are primarily located online. A lack of translation or effective guidance creates insurmountable challenges for those trying to access these resources.

For instance, ISPs do not always offer support for ACP, or other affordability programs, in languages other than English. This is a large barrier especially for refugee populations navigating resettlement. The WSU report highlights the International Rescue Commission (IRC), which states their clients have significant barriers because most job applications are in English or Spanish. IRC’s Wichita service center helps those who speak Swahili, Pashto, Dari, Arabic and Ukrainian.

Language is not the only barrier for this covered population. Concerns over proper documentation were mentioned in WSU’s conversations. For parents and guardians of school-aged children who speak other languages, navigating online education can be difficult, frustrating, and harmful to the children if not successfully managed. During the COVID-19 pandemic, families who had to participate in school from home faced additional hurdles to equitable schooling if they did not have the expertise to troubleshoot online software or equipment.

Broadband Adoption Measures

The barriers that affect broadband adoption are amplified in covered populations. The stacking of barriers was an issue learned through discussions with key stakeholders from the Roadshow, state agencies and organizations.

The Advisory Council mentioned the negative impact of these issues working in concert, regardless of which covered population they were primarily serving.

Some of the noted concerns that could hinder KOBD’s goal of universal service include:

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Telehealth and Telemedicine

Telemedicine and telehealth are important components to medical care in the 21st century, and the impact of the lack of reliable, affordable and quality broadband service is a major issue. Currently, Kansas does not have a statewide plan or initiative to help develop telemedicine-specific support across the state.

The Center for Telemedicine & Telehealth at the University of Kansas Medical Center is an excellent partner to guide member healthcare facilities through the process of establishing telehealth and telemedicine programs. The Center serves 72 of 105 counties in the state but lacks the appropriate resources to expand. With funding, the Center could develop the staff and program implementation to do the necessary outreach, implementation, and administrative support to establish a full statewide initiative.

Digital Navigation

Digital navigation and navigators are key pieces to the puzzle of closing the digital divide, yet resources are not equitably available across Kansas. Most rural counties have only one organization that offers digital navigation support, and the distance to that resource limits participation. Rural organizations have limited computer stations open to the public and many lack rental device programs to help residents develop skills and learn at home.

Digital navigation programs usually grow organically based on the need of a local population, with a committed organization gathering the resources and community to support them, but their growth and success is not always accessible through a centralized service. This leads to uneven access to digital skills training and digital navigation throughout the state.

Organizations such as the United Food and Commercial Workers Union that serve much of the Hispanic population around Dodge City have been successful in building digital navigation programs as an extension of their core services. With funding, this program could develop the staff and program implementation to do the necessary outreach, implementation, and administrative support to establish a full, statewide initiative.

Digital navigation is in its infancy, with many programs still in the start-up phase of their organizational life. As this resource matures, career pathways within digital navigation can be developed. Special attention to building digital navigator career tools will help grow the resources needed to adequately support these statewide programs inside this tight labor market.

Digital Literacy Skills Training

Strong digital literacy partners in Kansas, such as Workforce Centers, have been doing this work for some time. Unfortunately, no centralized resource exists to support these disparate efforts.

The Advisory Council, key non-profits and state agencies offer digital literacy training to their constituencies but have expressed a need for a “basket of tools.” Understanding and addressing the barriers of broadband access and adoption requires various tools such as Northstar, DigitalLearn.org, and Human-i-t. Tools with robust reporting features to track and achieve milestones will help meet the objectives in the Digital Equity Plan.

The ability of digital literacy organizations to scale to a statewide access program for all Kansans would increase if these resources and tools were subsidized or provided at no cost to these organizations.

Philanthropic Support

A common concern from the Advisory Council is that federal funds will be insufficient to satisfy Kansas’ digital equity requirements, signaling a need for private investments and support.

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Connect Humanity found only .05% of philanthropies currently contribute to digital equity causes. This illustrates the need to connect with and educate those private funding partners throughout the state. KOBD will prioritize building relationships with community foundations, corporate foundations and family foundations that serve Kansas. These relationships also will ensure that programs are built with long-term sustainability in mind.

Local and Regional Broadband and Digital Equity Planning

Local participation in supporting digital equity programs is necessary for the continued success of Kansas' digital equity mission. Many local and regional leaders are new to learning about broadband infrastructure and the digital equity needs of their communities. KOBD is engaging local and regional leadership on broadband-facing topics, including digital equity, by creating a "Broadband Ready Communities" (BRC) program. The Kansas BRC program plans to increase community participation and awareness in preparation for future investments over the next few years. Incenting interested communities to put broadband buildout-friendly ordinances in their local codes is crucial to developing local buy-in. Communities that successfully implement these changes will be recognized by KOBD and could receive preferential treatment in future grant cycles.

When discussing the interplay between BEAD and DEA, the Advisory Council suggested digital equity resources, such as a toolkit and/or training module, become part of local and regional broadband education, along with additional regional planning support.

Community Anchor Institutions (CAIs)

CAIs do not have equitable access to affordable and reliable broadband service across the state. Through E-Rate data, KOBD learned many school districts do not have access to 1Gbps symmetrical speeds or, when accessible, are charged a prohibitive amount.

Many rural counties also do not have a CAI under the traditional categories of CAIs. KOBD recognizes this gap and looks to expand CAIs to include community gathering spaces that fall outside municipal buildings, medical or educational institutions, and libraries, and will work to connect these facilities with affordable 1Gbps speeds.

Broadband Affordability

The cost of monthly broadband subscriptions was a concern raised by Roadshow attendees and survey participants. In WSU's broadband survey, KOBD found:

- Sixty-two percent (62%) of respondents paid between \$50 and \$99.99 per month for a broadband subscription.
- Eight percent (8%) paid between \$0-\$49.99 per month for a broadband subscription.
- Those who reported earning between \$20,000 and \$99,000 per year reported paying an average of \$86 per month for a broadband subscription.
- Those who reported earning over \$100,000 per year reported paying an average of \$132 per month for a broadband subscription.

The inconvenience of "bundling" services (i.e., when providers offer discounts for subscribing to multiple services such as cable, wireless connections, cell phones and internet-of-things (IOT) home offerings) was mentioned as an issue. Households who wish to pay for a broadband subscription face a different cost than someone who "bundles." This disincentivizes those with financial constraints from subscribing to an internet service.

11. Digital Equity

11d. Strategies

Implementation Strategy & Key Activities

KOBD is finalizing the Digital Equity Plan with input gathered from listening sessions; focus groups with members of all covered populations; outreach sessions with state agencies and key organizational partners; and bi-monthly meetings with the Advisory Council.

Draft implementation strategies and key activities that will be updated in the final Digital Equity Plan are as follows:

1. **Strategy: Leverage the work of existing partners to enhance the number of digital equity resources throughout the state**
 - a. Coordinate state agency support of covered populations
 - i. KOBD will work with an inter-agency committee of covered population subject matter experts to make sure external facing services are aligned with existing digital inclusion programs.
 - ii. Ensure state agency resources are more inclusive and accessible to all Kansans.
 - iii. Develop a training and communications program to increase awareness and promote ACP and other digital equity affordability programs.
 - iv. Engage with entrepreneurial-facing resources in the Department of Commerce to reach underrepresented members of covered populations.
 - v. Tie existing efforts, like the Community Healthcare Worker program, library initiatives, and other covered population specific programs, like Revolucion Educativa, into digital navigation skills development.
 - b. Create a consolidated funding pool to scale up support
 - i. Create a funding mechanism to promote collaboration between digital equity organizations to expand offerings. These funding opportunities would pilot new collaborations from cohort support. By building these efforts and giving them short, attainable goals, the program design will lead the coalition to larger funding opportunities once benchmarks are successfully fulfilled. Ideas include supporting a consortium of tech hubs (example: like Topeka's IBSA and a larger, regional urban and rural coalition), initiatives that expand remote-work upskilling (example: The Innovation Center and new rural partners working on remote worker training opportunities, especially for covered populations).
 - c. Fund expansion of existing efforts
 - i. KOBD will support existing efforts and work with additional funding, allowing established partners, like the Kansas Library Association (KLA), KC Digital Drive, and Goodwill Industries, to continue to build their footprint until digital equity services are offered statewide.
 - ii. KOBD will promote the replication of successful models with new partners when appropriate.

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- iii. Increase awareness, skills, and support about ways to make services more accessible, available, and inclusive.
 - iv. KOBD will utilize CPF-DCT funds to promote broadband access in communities where affordability is a barrier to broadband adoption through the purchase and installation of laptops, tablets, desktop personal computers, and public Wi-Fi equipment.
 - d. Create a statewide clearinghouse of digital equity resources
 - i. Establish a collection of software resources accessible to digital equity entities. Tools, like Northstar, DigitalLearn.org, and Human-I-T, will be free to partner organizations and housed by another institution to train and track metrics. This will allow for systematized measurement of tools and progress toward our goals.
 - e. Expand technical capabilities to cover the entire state
 - i. KOBD will support the expansion of the KUCCT's suite of digital offerings throughout the entire state. Additional support will be requested, such as the hospital association and the Medical Society, to expand telemedicine access.
 - ii. Support telemedicine training and information fairs within healthcare facilities in partnership with organizations like AARP.
 - iii. Support emergency services and navigators for public services, especially in rural areas, by partnering with local nonprofits to deliver virtual training sessions in hard-to-reach communities.
- 2. **Strategy: Create sustainable affordability options building on the success of current partners and programs**
 - a. Identify and expand digital navigator resources
 - i. Create a Digital Navigator Expansion grant program designed to identify and assess digital navigation programs and navigators committing to beginning or expanding their digital navigation offerings. Cohorts of participating organizations will meet on a regular basis to co-learn, receive guidance, and connect with the growing network of digital navigator programs throughout the state.
 - ii. Increase KOBD's awareness of resources to make agency and organization online services more available, accessible, and inclusive to support the work of navigators.
 - iii. Provide knowledge, training, and support for navigators to ensure familiarity with available services, benefits, and opportunities for civic and social engagement online.
 - b. Support ACP outreach efforts
 - i. Support the growing network of organizations performing ACP outreach, including state agencies and FCC ACP Outreach grantees. KOBD can help identify any resources, monitor the improvement in enrollment, and identify areas of the state where resources will be the

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most effective.

c. Build a device distribution network

- i. Build a strong network of device distribution programs that serves the entire state, working with partners to close identified gaps. Leads in this partnership will include PCs for People, Digitunity, and others.

d. Develop a robust and sustainable Kansas affordability program

- i. Explore the development of a long-term state affordability strategy if ACP is not funded long-term. Activities may include:
 - Create a pool of funds comprised of both public and private sources to fund a long-term affordability program for Kansas.
 - Build on existing affordability programs to create efficiencies, like KC Digital Drive's Internet Access Support Program that provides pre-paid debit cards for monthly subscription payment.

3. Strategy: Establish KOBDD's digital equity division as a repository of information and connections

a. Create a digital equity map and dashboard

- i. Collaborate with partners to create an online digital equity map and dashboard. This will help the agency, organizations, and the public to understand progress in closing the digital skills gap. The tool will be updated to improve accuracy, keep data current, and add useful new data.

b. Fund digital navigator training programs

- i. Fund train-the-trainer programs for organizations that are rapidly expanding their digital navigation systems and build a cadre of certified and qualified trainers capable of providing basic device support, guidance for online public services, information on navigating of the internet, training for commonly used software, and more.

c. Convene and connect practitioners

- i. Act as a convener of resources bringing together practitioners from across Kansas with intention. This includes working with local and regional leadership on their broadband efforts, which will include digital equity guidance.

4. Strategy: Engage and educate partners and donors to cultivate long-term investment in digital equity

a. Build upon existing work by philanthropic partners

- i. Strengthen existing relationships with the philanthropic sector to establish digital equity as part of their grant-giving priorities, like the Kansas Community Foundation and others. These partnerships will focus on identifying the most impactful programs for covered populations, facilitating, and encouraging events, and inspiring action.

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- b. Guide investments
 - i. Focus investments on strategic projects including but not limited to scholarship programs, provider-led broadband technician training programs, tech hub network creation, and investment in technology centric “Career Cluster” exposure programs, particularly to students who are members of the covered populations.

5. Strategy: Empower Kansans with in-demand workforce skills so they can thrive wherever they live

- a. Integrate digital equity with broadband infrastructure planning
 - i. Ensure regional and local broadband planning teams receive information about digital equity needs early in the process of building their own local efforts. As local and regional digital equity plans are developed, KOBD will help.
 - ii. Promote BEAD-related workforce development programs like scholarships or employment matching to covered populations by facilitating collaboration between digital equity partners and their local colleges and other providers.
- b. Promote advanced digital skills programs
 - i. Identify, support, and promote programs that build basic and advanced digital skills for high-demand workforce careers. This includes technology forward programs in higher education institutions, technology skills programs in communities like Future Leaders Outreach Network, Youth Entrepreneurship Exchange, Lead for America Fellows program, and others. Maximizing access to members of the covered populations is essential.
 - ii. Help expand technology-centric “Career Cluster” efforts for K-12 students in school districts where programs have lagged in the past, paying particular attention to areas with historic underinvestment.
- c. Align statewide cybersecurity efforts
 - i. Align existing efforts on cybersecurity with the Kansas Office of Information Technology (OITS), the universities, the Kansas Board of Regents (KBOR), and others to ensure there is a continued evolution of and learning about cybersecurity issues.

KOBD will continually monitor and identify gaps in needed programs, such as identifying a robust cybersecurity asset, creating a common digital skills toolbox that is accessible to all digital equity partners, and developing a Digital Navigator guidebook. There will be areas that need additional support, such as technical assistance or introduction of a resource to a region, and this continual monitoring will promptly identify these needs. Knowing the needs will shift as statewide implementation of the Digital Equity Plan progresses, KOBD will work with stakeholders to collect feedback throughout the five-year process.

KOBD is committed to universal broadband service, which requires closing the digital skills gap across the State of Kansas.

12. Alignment

This FYAP integrates a comprehensive review of all state goals and objectives. Aligned with Governor Kelly’s priority of ensuring that universal broadband service is available to all Kansans, KOBD’s goal of ensuring that all Kansans can live, work, learn and compete in a global economy regardless of where they are in the state guides our collective efforts regarding broadband funding, either from BEAD or elsewhere.

Achieving the state’s vision for universal broadband service will support and advance Kansas’ broader economic and workforce development, education, health, civic and social engagement, and the delivery of other essential services. Our strategies to bolster our economy and develop a diverse and skilled workforce are advanced by increasing access to broadband and closing the digital divide. Resources to develop skills, find jobs and conduct business are increasingly located online. As such, reliable and affordable broadband is a vital component to a thriving economy and workforce.

The FYAP’s goals in closing the digital divide will bolster Kansas’ short- and long-term plans for its economy and workforce. The objective of increasing the availability of high-speed internet will support the state’s transition to online platforms, enable residents to take advantage of online services, and advance the various goals of our state leaders.

This FYAP is being developed concurrently and holistically with the Digital Equity Plan. The alignment between both plans is regularly reviewed to ensure priorities are balanced against covered populations and their needs.

Through the evaluation of all available grant programs, KOBD focuses on understanding the application and intention of each opportunity to assess how they support the universal access goal for Kansas. See Table 13 below for alignment of funding programs:

Table 13: Alignment

Grant Name	Funding Vehicle	Amount	Focus	Current State
Connectivity Emergency Response Grant (CERG)	Coronavirus Relief Funding (CRF)	\$49 million	Unserved and underserved locations	Funds disbursed and projects complete
Broadband Partnership Adoption Grant (BPAG)	Coronavirus Relief Funding (CRF)	\$10 million	Leverage partner ISPs infrastructure to support low-income households	Funds disbursed and projects complete
Broadband Acceleration Grant (BAG)	KDOT Eisenhower Legacy Transportation Program (IKE)	\$85 million	Unserved and underserved locations	\$5 million to be awarded
Lasting Infrastructure and Network Connectivity (LINC)	ARPA’s State and Local Fiscal Recovery Funds (SLFRF)	\$30 million	Enable work, education, and healthcare in underserved locations at 100/20 Mbps	Applications closed in June 2023; projected awards announcement in Nov 2023
Enabling Middle Mile Broadband Infrastructure Program (EMMBI)	IIJA/BIL	\$42.5 million	Expand/extend middle mile infrastructure to reduce the cost of connecting unserved and underserved areas	Award notification received

12. Alignment

Table 13: Alignment Cont.

Grant Name	Funding Vehicle	Amount	Focus	Current State
Capital Projects Fund (CPF) Program	ARPA	\$83.5 million	Enable first-time fast, reliable internet to 24,000+ homes, businesses, healthcare organizations, schools, and public institutions	Program awards allocated in three phases, with grants announced.

Kansas Department of Commerce

Under the leadership of Governor Kelly and Lieutenant Governor/Commerce Secretary Toland, and in partnership with the Kansas Department of Commerce, communities, businesses, academia and economic development partners across the state, Kansas implemented a comprehensive economic development strategy, known as the Framework for Growth (Framework). This strategy is grounded in four pillars: (1) Talent, (2) Innovation, (3) Community Assets, and (4) Policy.

Each aspect of the Framework touches industry, education, business development and economic growth, all while considering how the people of Kansas best succeed and flourish. High-speed broadband is needed to ensure the full program potential of the Framework is achieved.

In 2022, Governor Kelly established the [Office of Registered Apprenticeships](#) (ORA) to meet the talent needs of Kansas’ businesses, give workers the skills and experience they need to compete in the modern economy, and knock down barriers to employment. KOBD reviews opportunities with the ORA to encourage students to consider careers in the broadband industry.

KOBD’s efforts to ensure workforce readiness include collaborations with the Kansas Department of Labor, KANSASWORKS, ORA, multiple educational institutions, and national broadband training organizations such as the Fiber Broadband Association and Wireless Infrastructure Association. The workforce readiness plans help expand existing broadband technician certification programs across the state.

Kansas State Department of Education

The mission for the Kansas State Department of Education (KSDE) is to prepare Kansas students for lifelong success through rigorous, quality academic instruction, career training and character development based on each student’s gifts and talents. The State Board supports a student’s right to learn in public, private, charter or online schooling. Broadband deployment will support their agenda by broadening learning opportunities for Kansas’ students.

The Kansas Charter and Virtual Advisory Council reviews and provides input to the Kansas State Department of Education (KSDE) concerning charter and virtual schools and their respective programs. The state recognizes virtual learning may be the best solution for many students, as more than 70 virtual school structures are aligned via sponsorship with local school districts. These schools serve K-12 and adult students with accredited classes. The success of this program requires high speed broadband for the schools, instructors, and students.

KSDE has defined pathways for secondary schools. Many of those schools have agreements with higher education organizations to ramp workforce opportunities through dual credit programs, vocational pathways (including networking, electrical, and more) and advance entry into the workforce. Large school districts also have specific schools and partnering technical schools established to advance these efforts.

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Kansas Schools for the Deaf and Blind Program

Many of the students who attend and use resources provided by the Kansas Schools for the Deaf and Blind are included in two of the enumerated covered populations (individuals who primarily reside in a rural area and individuals with disabilities). Children attending these schools rely on the internet, specialized assistive devices, and software. Many of these tools are unavailable throughout Kansas because of the lack of broadband access and affordability. The Kansas Deaf Program ([KSDeaf](#)) prioritizes the online availability of digital tools through its “Blended Learning” program. The Kansas School for the Blind ([KSSB](#)) offers online courses that address academic needs and provide an opportunity for students to learn from a certified Teacher of Students with a Visual Impairment (TSVI). KSDeaf, KSSB and other similar organizations require reliable and affordable broadband service to broadcast lessons to students wherever they live in the state.

Kansas Department of Health and Environment

Kansas includes miles of expansive and sparsely populated land. Many residents live in remote areas several hours away from healthcare facilities. Making the trip for regular checkups can be both time consuming and costly. For rural Kansans, telehealth may be the key to making healthcare affordable and accessible. Increasing the availability of affordable high-speed internet can support the state’s telehealth goals, as highlighted in the Department of Health and Environment plans.

The Kansas Department of Health and Environment has prioritized the continued expansion of telehealth services for behavioral health, primary care and other health-related needs and recognizes telehealth’s importance in increasing access to timely, affordable, and effective health services. Given Kansas’ vast area and low population density, residents — particularly in rural areas and on tribal reservations — face considerable barriers to accessing medical care. With adequate broadband and internet-capable devices, these Kansans could access these services remotely, saving a great deal of time and resources, which would in turn encourage more frequent use.

Secretary of State

A key priority for the Kansas Secretary of State is the deployment and use of a new online voter registration application, particularly ahead of the next cycle of elections. As voting is central to civic engagement, implementation of this new system will further engage and civically involve Kansans. FYAP’s plans for deployment of broadband will make this online voter registration program successful and scalable.

Kansas Department of Wildlife and Parks

Fishing, hunting and spending time in the great outdoors are central tenets of life in Kansas. The Kansas Department of Wildlife and Parks prioritized replacing its Automated Licensing System “to provide a comprehensive business and customer service portal for hunting, angling, and recreation opportunities.” Hunters and anglers rely on affordable and accessible broadband and devices to access this updated system. Furthermore, safety for our recreational users often depends on a sufficient broadband connection to parks, shelters, trails, and campgrounds.

Kansas Department of Agriculture

Agriculture and livestock are at the center of Kansas’ economy. KOBD and the Farm Bureau partner to understand and solve the urgent need for broadband connectivity to farms and ranches, or “broadband to every acre.” This level of connectivity will enable the use of the newest, most efficient, autonomous farm equipment. This will help address labor shortages while boosting productivity and economic savings and bring higher yields to Kansas farmers. Internet-enabled equipment allows for 24-hour, seven-days-a-week operations where equipment can be programmed or

12. Alignment

managed from a home office, tablet or in person. Broadband and cellular technologies both are key components to these technological advancements.

The need for precision agriculture driven by better broadband to Kansas farms is underscored by the continued depletion of the Ogallala Aquifer. Irrigation consumes the largest share of the aquifer's water. The ability to use broadband-enabled precision application to conserve water for farming will stave off a critical shortage of the resource that helps fuel the production of food for the state, nation, and world.

In addition, the Kansas Department of Agriculture has a goal to keep "the livestock industry and public informed of industry programs and issues through timely and accurate public information and education." Better connectivity will allow this state department to share much of this information online in a timely fashion.

Department of Environmental Quality

The Department of Environmental Quality uses digital resources to keep citizens up to date on pertinent safety guidelines related to air, energy, mining, waste management and remediation, and water quality. Better connectivity will allow this state department to share its information online in a timely way.

Kansas Commission on Veterans Affairs Office

The Kansas Commission on Veterans' Affairs Office mission is to provide Kansas veterans, their relatives and other eligible dependents with information, advice, direction and assistance through the coordination of programs and services. The FYAP initiatives related to the expansion of broadband availability and digital skills may offer noted benefits to several covered populations with whom the Commission often interfaces: veterans; individuals who live in rural areas; aging populations; and individuals living with disabilities. Better connectivity will allow this state department to share much of this information online in a timely fashion.

Today, Kansans depend on online platforms to connect with work, healthcare, friends, and family; pursue their interests; participate in their communities; and explore the world. Many of Kansas' plans related to civic and social engagement include using digital platforms to make access easier for residents, which can be supported by increased access to affordable broadband. KOBD's mission to ensure universal broadband service involves all of these efforts.

Other Agency Partners

There are a number of other agency partners with whom KOBD will collaborate including, but not limited to the Kansas Department for Children and Families, Kansas Department of Corrections, and the Kansas Department for Aging and Disability Services.



13. Technical Assistance

Kansas actively used the support of its NTIA Federal Program Officer (FPO). KOBD recognizes the need for all BEAD and Digital Equity Plans be coordinated with the FPO for review and consultation to eliminate the possibility of rework. In this framework, the NTIA FPO is considered a key technical resource in support of BEAD and DEA efforts.



KOBD will depend on active collaboration with all ISPs and sub-grantees in previously awarded grants to ensure commitments made in those grants are realized. KOBD will facilitate discussions between local and regional communities, along with providers, to determine broadband needs, plan and timeline development, technology choices, and cost estimations to ensure competitive grant applications are submitted.

KOBD may rely on state agencies and representatives to help sponsor legislation or rule making(s) that will support the timely and efficient approval of permits, pole rights, infrastructure plans, rights of way, or other areas. Similarly, KOBD may require collaboration with large parcel landowners, counties, railroads, or other right of way/easement owners that could impact the success of design and deployment plans.

KOBD will rely on its network of stakeholders for review of multiple plans or policies throughout the BEAD lifecycle. Outreach by KOBD has been extensive, and the stakeholder relationships that have been developed will serve as strong advocates to review priorities, timelines, designs, costs, resources, sub-grantee processes and other plan elements as required.

KOBD may sometimes require support from engineering resources to review and validate technology or infrastructure design recommendations. KOBD will rely on its contracted business partners to assist in priority setting, plan development, cost and timeline projections, mapping, grant development, the grant award process and BEAD compliance reporting.

KOBD will rely on leadership and support from the Department of Commerce to review all plans and priorities as they are drafted. Other state agencies will be asked to review specific plan portions for impact assessment to ensure plan congruency with existing state efforts.

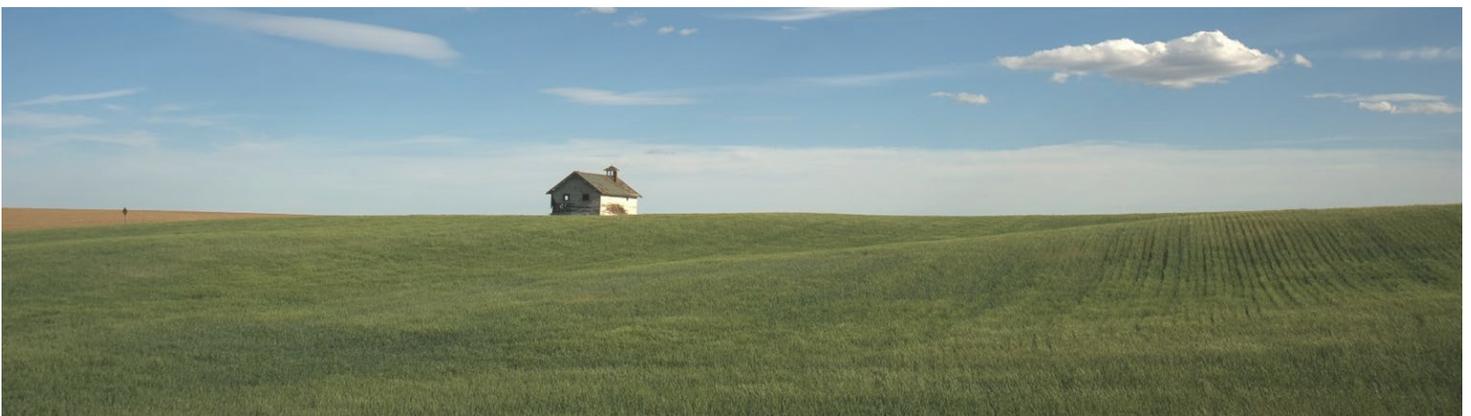
KOBD is confident that all partners required to support any aspect of the BEAD or DEA process have been identified and are willing to serve as active and strong partners for the BEAD effort across Kansas.

14. Conclusion

KOBD developed this FYAP to capture the historic, ongoing, and needed work to achieve universal broadband service in Kansas. The data presented represents the lived experience of Kansans across the state, who vary in income levels, experience with technology, geography, ethnic and racial background, and age. While many Kansans know only a world integrated with the internet, some are still adjusting to the increasing commonness of internet-enabled services, and others have no experience with the digital world whatsoever. Some Kansans live in densely populated urban areas, while others live miles away from their nearest neighbors. KOBD believes all Kansans need and deserve broadband access for full participation in our society, democracy, and economy. KOBD's work aims to make that possible.

In five years, Kansas envisions its broadband landscape drastically different than the present. KOBD's ambitions to eliminate the digital divide by 2029 are widely embraced by elected officials, stakeholders, and Kansans. For too long, access was the sole focus of statewide conversations. Kansas has since concluded that broadband adoption also hinges on equitable distribution of digital programming that focuses on affordability, digital skills and device availability. Ongoing local engagement is critical as well. Strategies are inclusive of state agency priorities while considering the outstanding local need. To close the existing digital gap, Kansas plans to leverage all its assets. Targeted investment for MDUs is another key strategy to ensure connectivity in areas that traditionally have been overlooked. Community involvement also will be integral to guiding investment and keeping industry accountable to universal service. Upon authorization of funding, KOBD will launch a concerted effort to offer programs aimed at nonstructural broadband solutions. The Kansas Board of Regents, Kansas State Library and the Department of Education's digital skills pilot program is a prime example. Teaching digital skills is as significant to broadband adoption as offering financial assistance. Removing barriers will require distinctive strategies among varying populations including the covered populations. These strategies are further highlighted in the Digital Equity Plan.

While achieving universal service is no small feat, our plans—FYAP, DE plan, BEAD-IP and BEAD-FP—are the next steps in the right direction. High-speed internet is critical to be economically competitive in the future. In five years, Kansas anticipates offering many more opportunities for telehealth, remote learning and working, advanced manufacturing, precision agriculture, and innovative solutions for cybersecurity. The BEAD investment allows Kansas to remove the barriers for adoption and attain internet for all.



15. Appendices

BEAD Five Year Action Plan (FYAP) Glossary

Appendix 1—US Census: Kansas Location Density by County

Appendix 2—Kansas BSLF Location Density by County

Appendix 3—Providers in Kansas

Appendix 4—KOBDE Engagement (Local Coordination) Tracker

Appendix 5—ISP and Agency Survey Forms

Appendix 6—U.S. Census to National Broadband Map (NBAM) Comparison

Appendix 7—Kansas Households with Broadband Assets

Appendix 8—Kansas BSLF Locations by County

Appendix 9—Kansas CAI Entity Type by County

Appendix 10—Historical Cost Per Location for Qualified Broadband Service

Appendix 11—Kansas Counties Grouped by Density

Appendix 12—Kansas Imputed BEAD Cost per County

Appendix 13—Kansas FTTH Universal Cost Estimate