



**TEXAS BROADBAND
DEVELOPMENT OFFICE**

Texas Broadband

Five-Year Action Plan

August 2023

Broadband Equity, Access, and Deployment Program



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Texas Comptroller
of Public Accounts

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1 Executive Summary

1.1 Plan Content

The following summarizes key takeaways of the Broadband Equity, Access and Deployment (BEAD) Program’s Five-Year Action Plan.

1.1.1 Vision and Objectives

The Texas Broadband Development Office’s (BDO) vision and objectives for the BEAD Program were crafted to align with the objectives that have been expressed by the National Telecommunications and Information Administration (NTIA) through its Notice of Funding Opportunity (NOFO) and other guidance. Though detailed further in Section 2 below, **Exhibit 1** offers a quick summary of what the BDO hopes to achieve through BEAD and other programs.

Vision Statement

Improve quality of life and promote economic growth by enabling fast, reliable and affordable broadband connectivity for all residents and businesses of Texas.

Exhibit 1: Objectives of the BEAD Program

Objective 1 Universal Access

Prioritize broadband service deployment to unserved locations followed by underserved locations while providing for an efficient distribution of funds.

Objective 2 Funding Optimization

Establish BEAD Program as a competitive and efficient grant program.

Objective 3 Affordability

Increase access to affordable broadband service offerings.

Objective 4 Subscribership

Increase the number of broadband subscriptions among households, businesses, community anchor institutions (CAIs) and public service entities.

Objective 5 Stakeholder Engagement

Inform program planning, design and implementation through stakeholder input and local and Tribal coordination.

Objective 6 Program Effectiveness

Design grant processes to ensure federal compliance as well as robust participation from a variety of applicants.

1.1.2 Current State

The current state of broadband in Texas is as complex as the state is big. In Section 3, the BDO provides detail of its understanding of existing programs, partnerships, assets and gaps. The BDO has captured detail about its own activities to date, current and planned staff, current and planned contractor support and an inventory of the 17 broadband funding programs available in the state. This section also lists the 341 partners — public, private and nonprofit organizations — with whom the BDO has engaged through statewide, regional and task force working groups to inform program planning and design.

Further in Section 3, the BDO provides inventory and analysis on data collected through three statewide surveys. The Digital Resources Mapping Tool (DRMT) Survey helped to inventory more than 163 broadband assets across the state and continues to gather more responses. The DRMT Survey provides a centralized repository to help facilitate broadband deployment and digital opportunity projects. Likewise, the Public Survey and Industry Survey have been enhanced with federal data sources to illuminate the needs and gaps in broadband across the state, all of which are critical to informing program priorities and key strategies.

1.1.3 Obstacles and Barriers

Section 4 takes a deep dive into the obstacles and barriers to closing the digital divide in terms of deployment- and non-deployment-related factors. Again, this drew from the Public and Industry Surveys, the latter of which noted commercial sustainability, topography, inaccurate availability data, workforce and regulatory issues as key barriers to deployment. The Public Survey found respondents mostly concerned with affordability, digital literacy and access to the right devices and networks. Understanding these barriers is key to developing a successful and effective program that organizes activities at the state level to help mitigate them.

1.1.4 Implementation Plan

The BDO has already set the implementation plan into motion, which is described in Section 5. This began in April 2023 with the launch of a robust stakeholder and public engagement campaign, including Tribal governments, designed to inform program planning and design. As mentioned, more than 300 stakeholder groups were actively engaged through a Statewide Working Group, Outcome-Area Task Forces and Regional Working Groups. The Regional Working Groups helped the BDO facilitate a series of 24 in-person public meetings, two in each of the 12 economic regions of the state identified by the Comptroller's office. As of July 2023, the BDO is nearly halfway through this statewide tour and has engaged with hundreds of individuals across the state including all covered populations. Additional public sessions will be held physically and virtually, including in Spanish. Additional engagement has been conducted through the surveys, which continue to be in circulation through August 2023 and have to date received roughly 10,000 responses in total.

Section 5 also outlines priorities, activities and key strategies designed to help the BDO achieve its BEAD Program vision and objectives. Examples include seeking ways to optimize the right mix of network technologies deployed, mitigating barriers to deployment, encouraging robust participation from industry, finding ways to lower consumer costs and establishing an effective grants management program. These will serve as guides to help the BDO design and implement the BEAD Program.

Lastly, the BDO has carefully considered an estimate of cost and timeline for connecting every location in the state. Considering many factors, including BEAD Program requirements and alignment with other broadband programs, the BDO estimates statewide deployment would cost roughly \$10 billion and will go into the year 2030 for deployment. This is an estimate that will need to be revised as more data

become available from current studies and actual deployments given the complex and unpredictable nature of the factors involved.

1.2 Plan Development

This Five-Year Action Plan has been developed in collaboration with partners and stakeholders across the state. It is informed by the Infrastructure Investment and Jobs Act (IIJA) and NTIA guidance, the mission of the BDO, the BDO’s 2022 State Broadband Plan and the public engagement campaign.

Voice of Texans

Throughout the document, these callout boxes are provided to highlight notable programs, relevant quotes and vignettes about lived experiences from those the BDO has engaged in this planning process.

The Five-Year Action Plan has been organized into the sections and subsections prescribed by the NTIA-provided template, and requirements from the BEAD Program NOFO have been addressed accordingly (**Exhibit 2** ~~Error! Reference source not found.~~).

Exhibit 2: BEAD Program NOFO Requirements and Five-Year Action Plan Contents

No.	NOFO Requirement Shorthand	Relevant Plan Section
1	Detail Existing Programs	Section 3.1: Existing Programs
2	Identify Existing Funding	
3	Identify Existing Projects	
4	Identify Employees	
5	Identify Obstacles, Barriers and Plans to Address	Section 4: Obstacles and Barriers
6	Develop Asset Inventory	Section 3.3: Asset Inventory
7	Describe External Engagement	Section 5.1: Stakeholder Engagement Process
8	Incorporate Government Data Sources	Section 3.4: Needs and Gaps Assessment
9	Identify Service Needs and Gaps	
10	Planning	Section 5: Implementation Plan
10a	Timeline and Cost	Section 5.5: Estimated Timeline for Universal Service
		Section 5.6: Estimated Cost for Universal Service
10b	Spending Plan	Section 3.1.4: Broadband Funding
		Section 5.7: Alignment
10c	Prioritization	Section 5.2: Priorities
10d	P3s and Cooperatives	Section 5.4.2: Selection Criteria
10e	Affordability	
10f	Workforce	
11	Identify Digital Equity Needs, Goals and Strategy	Section 3.4: Needs and Gaps Assessment
12	Align with Related Program Priorities	Section 5.7: Alignment
13	Identify Technical Assistance Needs	Section 5.8: Technical Assistance

2 Overview of the Five-Year Action Plan

The following vision statement, objectives and goals offer a broad overview of the intentions of the BDO as it plans, designs and implements the BEAD Program. It provides a variety of sources for inspiration and influence to inform and shape the vision and objectives. Consideration is given to the urgency of the digital divide and the opportunity for unprecedented public investment through state and federal programs. More tangible points of reference include:

- Statutory authorization in House Bill (HB) 5 of the 87th Texas Legislature, establishing the BDO, the BDO Board of Advisors and the office’s mission.
- [The 2022 Texas Broadband Plan](#),ⁱ developed by the BDO.
- Findings and recommendations made by the [Governor’s Broadband Development Council](#),ⁱⁱ in accordance with Texas Government Code Section 490H.007.
- Requirements and guidance issued by the administering federal agency, the NTIA, through the BEAD Program NOFO and other official guidance documents.
- Statute expressed by the 117th United States Congress in the 2021 IIJA.
- The extensive public engagement campaign described in this plan.

2.1 Vision

The vision statement is intended to provide a clear, specific picture of the Texas vision for broadband deployment. It succinctly describes what success looks like, informs strategies and serves as a guide for setting goals and objectives and the prioritization thereof. Thus, the vision statement for the BEAD Program is to:

Improve quality of life and promote economic growth by enabling fast, reliable and affordable broadband connectivity for all residents and businesses of Texas.

The increasingly digital world is bringing about significant improvements to quality of life and economic growth, but individuals and businesses affected by the digital divide are being left behind. This program is positioned to enable the closing of that divide by channeling public investment to the efficient and effective expansion of broadband service. The service must be fast, with speeds sufficient to handle multi-device households, businesses and community anchor institutions (CAIs) such as schools, libraries and health care centers. These use cases often include live video streaming both to and from the location. It must also be reliable given increasing dependencies for constant connection related to work, education, health, emergency services and economic development. And it must be affordable, so all Texans, regardless of their economic standing, have the opportunity to participate and benefit from the digital world.

2.2 Goals and Objectives

Six objectives have been grouped into three broader categories: Deployment and Access, Affordability and Adoption, and Program Success. Consideration was given to underlying activities that support the objective and drive its definition.

Goal 1: Deployment and Access

Achieve universal broadband access and quality of service providing all Texans the opportunity to participate in the digital economy.

Objective 1: Universal Access

Prioritize broadband service deployment to unserved locations followed by underserved locations while providing for an efficient distribution of funds.

Deployment to unserved locations must be prioritized to ensure those without any sufficient connectivity are brought online first. Remaining funds should then be prioritized to *underserved* locations to close any significant gaps in service quality. The design should also encourage inclusion of CAIs with the network buildout. The BDO will take steps to understand areas of need, establish standards and define the thresholds by which certain technologies may be preferred. For example, the Extremely High Cost Per Location Threshold (EHCPLT), described further in Section 5.4.2, helps mitigate excessive deployment costs in areas where the preferred technology — fiber — is economically impractical. Key activities include:

- Identify areas of need through collaboration and input from state and local governments, communities and industry.
- Establish standards for service quality in terms of speed, latency, reliability and resilience, while prioritizing fiber projects where possible to promote a future-ready broadband network.
- Develop the EHCPLT such that universal broadband access may be achieved through efficient use of subsidy and technology selection.

Objective 2: Funding Optimization

Establish the BEAD Program as a competitive and efficient grant program.

To ensure awarded subgrants are optimized for an effective and efficient use of public funds, this objective considers program factors such as robust participation, workforce readiness, barriers to deployment and utilization of existing assets. Key activities include:

- Promote viable business models and robust participation from a variety of applicants.
- Promote workforce development programs and partnerships to create and enhance broadband-related job opportunities for Texans through collaboration with industry, state and local agencies and community-based organizations.
- Assess and incorporate existing assets to optimize funding sources and mitigate unnecessary overbuild.
- Identify and mitigate barriers to deployment.

Goal 2: Affordability and Adoption

Augment deployment projects by increasing broadband subscribership through affordability and adoption strategies, especially within covered populations and historically marginalized communities, that help enhance business model viability.

Objective 3: Affordability

Increase access to affordable broadband service offerings.

Expansion of broadband service is not enough to close the digital divide. For many, the cost of a broadband subscription is either too high or the benefits of broadband do not justify the monthly price tag. This is especially true in high-cost areas where the capital investment and the operating income would not allow for a viable business model to recoup private investment. BEAD Program-funded projects must develop and include a low-cost option among service plans, and a prioritization scheme should favor proposed projects that most effectively incorporate affordability into service plan options. Key activities include:

- Define a low-cost option to encourage development of sustainable broadband service offerings suitable for low-income consumers, especially those within covered populations and historically marginalized communities.
- Prioritize proposals that improve affordability.
- Promote and support existing or future consumer subsidy programs similar to the Federal Communications Commission's (FCC) Affordable Connectivity Program (ACP).

Objective 4: Subscribership

Increase the number of broadband subscriptions among households, businesses, CAIs and public service entities.

Likewise, increased subscribership spreads network costs across a greater number of consumers, thus helping to reduce individual consumer costs. BEAD Program-funded projects should consider how to incentivize the development and promotion of *adoption* programs among subgrantees or fund such programs directly should there be available leftover funds to do so. Key activities include:

- Identify CAIs that can support digital literacy and skills programs and assess their needs, barriers and opportunities.
- Empower communities to improve digital literacy of residents and encourage participation in the digital economy.
- Facilitate inventory and coordination of existing digital opportunity data, programs and assets to optimize new public investment among existing capacity or development of new capabilities that can be leveraged across the state.
- Activate community-based organizations as advocates for the importance of "internet for all" and as conduit for ongoing local and Tribal coordination of broadband initiatives.

Goal 3: Program Success

Design, build and run an efficient, compliant and competitive grant program.

Objective 5: Stakeholder Engagement

Inform program planning, design and implementation through stakeholder input and local and Tribal coordination.

Stakeholder engagement is crucial to program planning, design and implementation. It provides an understanding of how different groups are affected by the digital divide and informs strategies for closing that divide. Moreover, early engagement should be designed so it allows the maintenance of ongoing channels for local and Tribal coordination during project implementation and beyond. Key activities include:

- Provide robust public engagement and data collection throughout the BEAD Program lifecycle.
- Continue engagement and local and Tribal coordination to smooth project development and implementation.
- Create a public feedback loop to keep stakeholders involved in the process and committed to ensuring success of the program.

Objective 6: Program Effectiveness

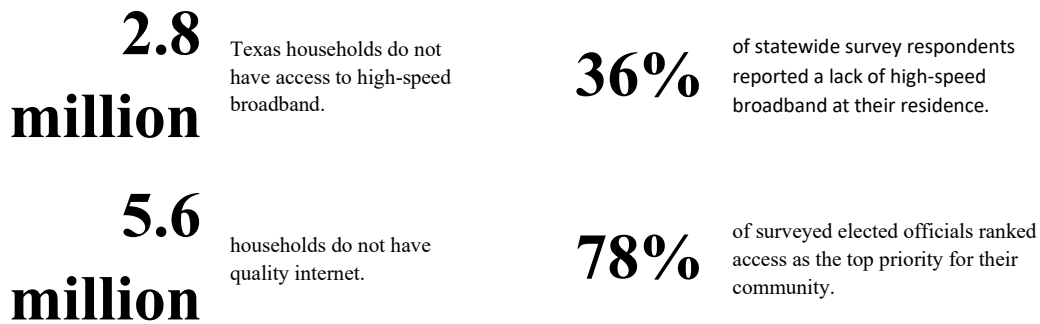
Design grant processes to ensure federal compliance as well as robust participation from a variety of applicants.

Lastly, the program will not be successful if it is not administratively ready to run effectively and efficiently. Awarded projects, and the BEAD Program itself, must be in compliance with federal requirements to avoid downstream federal and state compliance issues. Additionally, end-to-end processes for accepting applications, conducting evaluations, selecting awards and monitoring subgrantees should be as simple, transparent and expeditious as possible. Key activities include:

- Ensure awarded projects are aligned with requirements and objectives of funding sources.
- Create a streamlined application and evaluation process to encourage participation and optimize speed to deployment.
- Establish transparent and efficient challenge and subgrantee selection processes.
- Establish a robust risk assessment and compliance module for monitoring subgrantees.
- Develop BEAD *Initial Proposal* to clarify to industry members how they will participate and succeed as well as communicate to NTIA and the public how Texas will achieve universal access.
- Develop BEAD *Final Proposal* to identify subgrantee selection outcomes, project areas and timelines, and plans for implementation, monitoring and revision.

3 Current State of Broadband and Digital Inclusion

In 2021, the 87th Texas Legislature established the BDO within the Comptroller’s office and included certain mandates, including the development of the state’s first official broadband plan. This prompted the launch of a statewide campaign to gather data, research and public input to better understand the current state of broadband access, adoption and affordability in Texas. The resulting 2022 Texas Broadband Plan documents that understanding, which is now being expanded through additional ongoing research, public engagement, data collection and analysis, much of which is presented in this plan.



The following sections expand on the current state of broadband in Texas in terms of existing programs, partnerships, assets and gaps.

3.1 Existing Programs

The BDO has many current resources — including structural, financial, programs and personnel — available for the ongoing planning and implementation of the BEAD Program. Documenting the current landscape of broadband access and digital advancement opportunities is key to identifying the resources and relationships available to the BDO, understanding what gaps and barriers may exist and informing and improving future planning and implementation of program or office activities to effectively carry out its goals and objectives.

3.1.1 Current Activities

The following programs related to broadband expansion in Texas are either underway or will soon be ready for implementation (**Exhibit 3**). These activities are administered by the BDO and are informed by continued stakeholder engagement across the state.

Exhibit 3: Current Activities that the Broadband Program/Office Conducts

Activity Name	Description	Intended Outcome(s)
2022 Texas Broadband Plan	The 87th Texas Legislature created the BDO at the Comptroller’s office. The BDO is charged with broadband expansion, which includes establishing an official statewide plan for expanding access. The plan was informed through research, data and a statewide “listening tour” to hear directly from Texans about their experiences with broadband.	The plan compiles lessons learned from the Texas Broadband Listening Tour, survey responses, data analysis and recommendations to serve as a useful, insightful and sound understanding of the current state of broadband in Texas, as a baseline against which to measure change and as a road map for improvement.

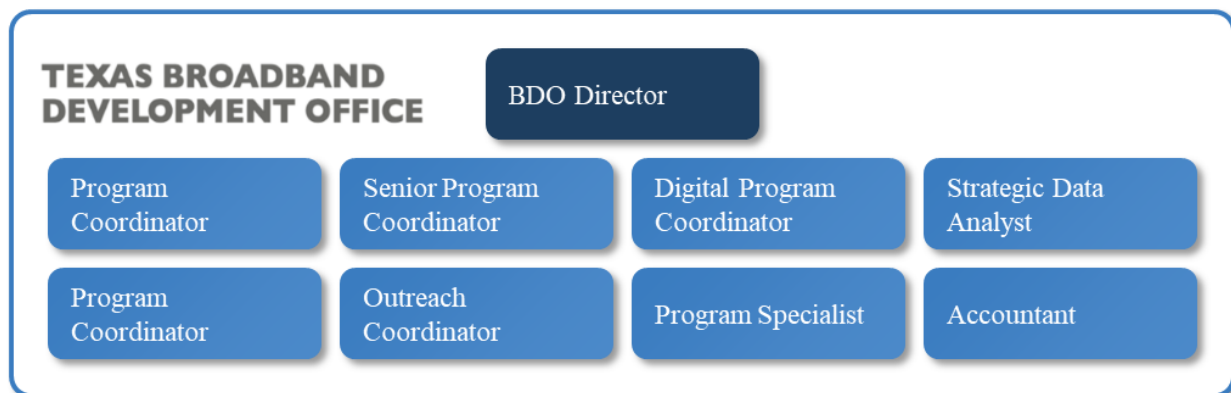
<p>Texas Broadband Development Map</p>	<p>The BDO has created a comprehensive address-level map depicting broadband availability data for the state of Texas.</p>	<p>The Texas Broadband Development Map will be used to better understand regional needs and make decisions in establishing programs to expand broadband access.</p>
<p>Texas Broadband Pole Replacement Program</p>	<p>This program, established by the 87th Texas Legislature under HB 1505, reimburses up to the lesser of \$5,000 or 50 percent of costs incurred or paid by a broadband provider or pole owner to replace a pole used to deploy eligible broadband service.</p> <p>Funding is currently pending an award decision from U.S. Treasury, which has discretion over the American Rescue Plan Act (ARPA) Capital Projects Fund (CPF) funds. However, in November 2023 Texas voters will have the opportunity to vote on a state constitutional amendment to create the Broadband Infrastructure Fund to expand high-speed broadband access and assist in the financing of connectivity projects. If approved, the Comptroller's office will be required to transfer \$1.5 billion in state general revenue to the Broadband Infrastructure Fund. Of that, the Comptroller's office is required to transfer \$75 million to the Broadband Pole Replacement Fund to be used as required by HB 1505. Per state statute, the state may not use the \$75 million in ARPA-CPF funds for the Pole Replacement Plan if the constitutional amendment passes.</p>	<p>The program is established to help speed deployment of broadband to individuals in rural areas and establish a modernized pole attachment regime that promotes consistency, transparency and fairness in the deployment of broadband service while ensuring consistency with the FCC's rules and regulations.</p>
<p>Bringing Online Opportunities to Texas (BOOT) Program</p>	<p>This program launched in March 2023 and is funded by the ARPA-CPF.</p>	<p>The BOOT Program intends to develop broadband infrastructure projects located in eligible areas that are designed to deliver, upon completion, service that reliably meets or exceeds symmetrical speeds of 100Mbps to directly enable work, education and health monitoring, including remote options.</p>
<p>Texas Rural Hospital Broadband Program (TRHBP)</p>	<p>Launched by the Texas State Office of Rural Health (SORH) and funded by CPF, the program seeks to understand and respond to the needs and challenges around broadband access and adoption for rural hospitals.</p> <p>Funding is currently pending an award decision from U.S. Treasury.</p>	<p>The TRHBP seeks to identify rural hospitals with the most critical connectivity needs, levels of adoption of telehealth services and other similar use cases and gaps. The grant program is designed to assist rural hospitals improve their broadband infrastructure. It also provides education and technical assistance and identifies additional resources that address broadband connectivity, reliability and adoption.</p>
<p>Infrastructure and Facility Access Improvement Grant (IFAIG) Program</p>	<p>Texas State Library and Archives Commission (TSLAC) has designed the</p>	<p>The program intends to provide IT support, facility improvements and</p>

	<p>IFAIG program to invest in capital projects equitably and intentionally in selected public libraries to directly enable work, education and health monitoring in response to the COVID-19 public health emergency.</p> <p>The program is funded through the BDO by the ARPA-CPF administered by U.S. Treasury.</p>	<p>network infrastructure for historically disadvantaged community libraries where capacity does not exist.</p>
<p>Texas Department of Transportation (TxDOT) El Paso District (ELP) Safety Rest Area (SRA) Broadband Infrastructure Project</p>	<p>This project consists of adding broadband infrastructure to six SRAs located in the ELP District.</p> <p>Funding is currently pending an award decision from U.S. Treasury.</p>	<p>SRAs are designed to give travelers a break from driving and return them to the road rested and alert. In addition to amenities like restrooms, food and beverage, drivers will also have access to high-speed public Wi-Fi when they otherwise may not have access elsewhere on the road, which is especially critical in emergency situations.</p>

3.1.2 Current and Planned Staff

The BDO is led by Texas Comptroller Glenn Hegar, a statewide elected official whose primary role is to serve as Texas' chief financial officer by fulfilling the duties as a treasurer, check writer, tax collector, procurement officer and revenue estimator. The BDO has a current staff structure that includes eight full-time staff (**Exhibit 4**) and 15 additional full-time equivalent (FTE) capacity recently authorized by the 88th Texas Legislature in 2023. The Comptroller's office has more than 2,500 FTEs focusing on the needs of the state and has dedicated additional resources to the BDO to ensure its success today and in the future. The staffing layout below consists of current and planned future positions. Planned positions are merely conceptual and may change based on shifts in the future broadband landscape.

Exhibit 4: Current BDO Staff



Descriptions of each current and planned role follow:

Exhibit 5: Current and Planned Full-Time and Part-Time Employees

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	1x Full-Time	Director	Oversees the BDO's initiatives, operations and strategic direction. Provides leadership, communication, strategic planning and project management skills to ensure the office's success.
Current	1x Full-Time	Senior Program Coordinator	Performs highly advanced consultative services and technical assistance work to develop and support programs related to broadband infrastructure development.
Current	2x Full-Time	Program Coordinator	Performs advanced consultative services and technical assistance work to develop and support programs related to broadband infrastructure development.
Current	1x Full-Time	Program Specialist	Performs complex consultative services and technical assistance work to develop and support programs related to broadband infrastructure development.
Current	1x Full-Time	Outreach Coordinator	Plans, directs and coordinates outreach activities designed to inform stakeholders and support the public image of the office. Raises awareness and solicits feedback through stakeholder management practices.
Current	1x Full-Time	Accountant	Performs financial analyses, prepares state-required reports and prepares federally required reports. Oversees accounting systems, procedures and controls. Secures federal funds and prepares the office's budget.
Current	1x Full-Time	Strategic Data Analyst	Performs data analysis and data research work, including data quality and control oversight. Provides key research, analytical and reporting functions in support of the office.
Current	1x Full-Time	Digital Program Coordinator	Performs advanced consultative services and technical assistance work to support programs related to advancing digital opportunities in the state.
Planned	1x Full-Time	Infrastructure Program Supervisor	Supervises the work of program staff within broadband development program area focused on infrastructure expansion. Supports the director by providing training and technical assistance in the program area.
Planned	1x Full-Time	Digital Opportunity Program Supervisor	Supervises the work of program staff within broadband development program area focused on advancing digital opportunities. Supports the director by providing training

			and technical assistance in the program area.
Planned	6x Full-Time	Grants Specialist	Performs detailed cost analyses, analyzes performance reports from grantees and provides training and technical assistance in the administration of grants and agreements. Interprets laws, regulations and policies related to grant management.
Planned	4x Full-Time	Contract Manager	Provides guidance for contracting activities, including assisting with and participating in the development and management of procurement and contract documents. Oversees and monitors the contract processes of various program areas.
Planned	1x Full-Time	Outreach Coordinator	Plans, directs or coordinates outreach activities designed to inform stakeholders and support the public image of the office. Raises awareness and solicits feedback through stakeholder management practices.
Planned	1x Full-Time	Technical Engineer	Provides technical assistance to the public in the form of best practices for installing and maintaining telecommunications networks. Provides technical assistance to the office in the form of evaluating technical proposals.
Planned	1x Full-Time	Operations Specialist	Provides administrative support to the BDO to ensure efficient operation. Carries out administrative duties and completes operational requirements by scheduling and assigning administrative projects and expediting work results.

The current and planned staff supporting the BEAD Program is not limited to the BDO. The Comptroller’s office will continue to support the BDO with additional dedicated and shared staff in the following agency divisions (see Appendix 7.1 for the organization chart): Agency Administration (including Budget and Internal Accounting, Contract Administration and Procurement, Human Resources and Support Services); Communications and Information Services; Fiscal and Agency Affairs Legal Services; Information Security; Information Technology; Legislative Affairs; and Operations and Support Legal Services (including Contracts and Open Records). While these positions are classified as employees of the Comptroller’s office, they have a primary purpose of supporting BDO programs, including the BEAD Program. Below are some notable examples of the BDO’s extended administrative support:

- Through the partnership with the Communications and Information Services division, the BDO and its dedicated outreach team have access to editorial, web design, graphics, social media, photography, videography and media relations services, including the agency spokesperson. The BDO website, surveys and other outreach efforts are supported and executed by this division.
- Through the partnership with legal services divisions, the BDO receives legal support for federal program compliance, legislative monitoring, administrative rule drafting, grant program notices of funding, contractor solicitations and grant contracting. This includes

legal support for compliance with the state’s Administrative Procedure Act, Open Meetings Act, Public Information Act, Universal Grant Management Standards, state procurement laws, Texas Procurement and Contracting Management Guide and other legal matters that may arise during program administration.

- Through the partnership with the Information Technology and Information Security divisions, the BDO develops and supports its grant management system and broadband mapping initiatives. This division also provides more mundane but critical support including the hardware and software the BDO requires for outreach and collaboration.
- Through the partnership with the Contract Administration and Procurement division, the BDO has additional experienced grant managers for the more technical and administrative portions of the grant process. This division provides dedicated administrative support, including reviewing and documenting the grant administration process. This division is likely to add more dedicated support as the number of grants increases.

3.1.3 Current and Planned Contractor Support

The BDO currently uses several contractors to support the office to accomplish the goals necessary to establish and maintain a broadband office in a state the size of Texas. The BDO also has plans to contract with separate external resources to provide technical assistance to resource strained local communities, conduct a risk assessment of subgrantees and support BDO’s monitoring of subgrantee compliance with state and federal rules. These current and planned contractors will help the BDO in lieu of hiring FTEs and assist the office in implementing and administering the BEAD Program:

Exhibit 6: Current and Planned Contractor Support

Current/Planned	Time	Position	Description of Role
Current	Full-Time	Broadband Planning Advisor	Provides programmatic development and strategic guidance to assist the BDO in executing the 2022 Statewide Listening Tour and development of the 2022 Texas Broadband Plan.
Current	Full-Time	Technical Grant Evaluator	Provides technical evaluation and insight of grant applications for the office, including review of applicant engineering plans.
Current	Full-Time	Broadband Mapping Advisor	Conducts quality control and assurance measures on broadband mapping data.
Current	Full-Time	State Broadband Map Developer	Creates, updates and maintains the data and technology solution for the Broadband Development Map. Works with ISPs to ensure a streamlined service data submission process.
Current	Full-Time	Scrum Master	Liaises with the Comptroller’s Information Technology (IT) Division and ensures the BDO project team successfully implements IT-related project goals.
Current	Full-Time	IJA Planning and Strategy Consultant	Supports and advises the BDO on IJA-related program planning, design and implementation, including public engagement and research necessary to

			inform BEAD Program and Digital Equity Act deliverables required for the state to secure funds and participate in the programs.
Current	Full-Time	Grant Coordinators	Works closely with the BDO staff and other contractors to successfully implement the project objectives. Coordinates all grant program-related budgetary and administrative functions of the project.
Planned	Full-Time	Community-focused Technical Assistance	Will provide selected communities broadband planning assistance to improve their understanding of needs and be better prepared for future rounds of funding.
Planned	Full-Time	Monitoring and Compliance	Will provide financial and performance auditing services for monitoring and compliance of state and federal requirements for grant programs. Will ensure programs meet state and federal program requirements, reporting requirements are timely met, and awarded projects are reviewed efficiently and accurately in accordance with state and federal law.

3.1.4 Broadband Funding

Several funding sources are available within the state of Texas for broadband deployment and other broadband-related activities (**Exhibit 7**).

Exhibit 7: Broadband Funding

Source	Purpose	Total	Expended	Available
U.S. Treasury - CPF	CPF provides \$10 billion to eligible governments to carry out critical capital projects that directly enable work, education and health monitoring, including remote options. The 87th Texas Legislature appropriated \$500.5 million, the state's entire allocation of CPF funding, to the BDO for broadband expansion purposes. The BDO plans to use CPF dollars to support multiple competitive last mile grant programs to fund broadband projects across Texas, as well as several state-agency-led initiatives focused on broadband expansion.	\$500.5 million	-	\$500.5 million
Texas Broadband Infrastructure Fund (BIF)	The 88th Texas Legislature passed HB 9 creating the BIF for the purposes of developing and financing projects related to broadband and telecommunications services and 911 services, as well as providing matching funds for federal money from the BEAD Program, among other	\$1.5 billion	-	n/a

	items. The funding is contingent on voter approval of a constitutional amendment in the November 2023 election, as described by House Joint Resolution 125 (Texas 88th R.S.).			
U.S. Department of Agriculture (USDA) - Reconnect Program	USDA is investing \$167 million in 12 states to develop broadband infrastructure in rural areas. Tatum Telephone Company, headquartered in East Texas, will use a \$4.4 million grant to deploy a fiber-to-the-premises network. The funded service area includes 986 households, 2,657 people, three educational facilities, two essential community facilities, a health care facility, 67 businesses and 60 farms spread more than 41 square miles.	\$4.4 million	n/a ¹	n/a
FCC - Rural Development Opportunity Fund (RDOF) Phase I	A step toward bridging the digital divide, RDOF aims to facilitate reliable and fast internet to rural homes and small businesses. 310,962 locations are covered by 456 bidders.	\$362.7 million ⁱⁱⁱ	n/a	n/a
NTIA - Connecting Minority Communities Pilot Program (CMC) ^{iv}	Provide high-speed internet service to colleges and universities for minority students and local communities. Eligible Institutions include: Our Lady of Lake University. Paul Quinn College. Sul Ross State University. Jarvis Christian College. Prairie View A&M University. South Texas College. Texas College. University of Houston – Downtown.	\$19.7 million	n/a	n/a
USDA - Small Business Innovation Research	Nanohmics Inc. proposes to develop and fabricate printed passive relay antennas, which may be applied alongside existing rights-of-way (e.g., roads, power lines or first responder antenna networks) in rural areas. The technology is intended to support broadband infrastructure deployment by drastically minimizing the burden of last mile deployments. Printed antennas are inherently low-cost and simple to scale to larger production levels. As a result, this antenna product would speed the deployment of internet access nationwide.	\$106,000	n/a	n/a
USDA - Distance Learning and Telemedicine Loans and Grants	Enable access to internet for rural communities. Funds can be used to purchase or support:	\$71.5 million	n/a	n/a

¹ Program administered by respective agency and funds are directly provided to the eligible entity.

	<p>Audio, video and interactive video equipment.</p> <p>Broadband facilities used for distance learning or telemedicine (up to a certain percentage).</p> <p>Computer hardware, network components and software.</p> <p>Instructional programming.</p> <p>Technical assistance and instruction on how to use distance learning and telemedicine equipment.</p> <p>Eligible entities include:</p> <p>Big Bend Telephone Co. Inc.</p> <p>Blossom Telephone Co.</p> <p>Border To Border Communications Inc.</p> <p>Central Texas Telephone Cooperative Inc.</p> <p>Five Area Telephone Cooperative Inc.</p> <p>Peoples Telephone Cooperative Inc.</p> <p>Taylor Telephone Cooperative Inc.</p> <p>Totelcom Communications LLC.</p>			
NTIA - Tribal Broadband Connectivity Program (TBCP)	<p>Assist Tribal governments in broadband deployment on Tribal lands, as well as for telehealth, distance learning, broadband affordability and digital inclusion.</p> <p>Eligible entities include:</p> <p>Alabama-Coushatta Tribe of Texas.</p> <p>Kickapoo Traditional Tribe of Texas.</p>	\$3.1 million	n/a	n/a
NTIA - Broadband Infrastructure Program	<p>Program directed toward encouraging partnerships between a state, or one or more political subdivisions of a state, and providers of fixed broadband service to support broadband infrastructure deployment, especially rural areas.</p> <p>Eligible entities include:</p> <p>County of Sabine.</p>	\$12.7 million	n/a	n/a
NTIA - Middle Mile Grant Program	<p>Program to reduce cost of middle mile deployment to bring high-speed internet to underserved and unserved communities.</p> <p>Eligible entities include:</p> <p>Concho Valley Electric Cooperative Inc.</p>	\$3.3 million	n/a	n/a
U.S. Department of Commerce - Economic Adjustment Assistance	<p>Program includes construction and non-construction activities to assist communities in becoming more economically competitive.</p> <p>Eligible entities include:</p> <p>City of Farmersville.</p>	\$18.7 million	n/a	n/a

	<p>City of Monahans.</p> <p>Deep East Texas Council of Governments.</p> <p>East Texas Council of Governments.</p> <p>Gulf Coast Economic Development District Inc.</p> <p>County of Medina.</p> <p>Rural Capital Area Workforce Development Board Inc.</p> <p>Town of Prosper.</p>			
NTIA - State and Local Implementation Grant Program	<p>Created under the Middle-Class Tax Relief and Job Creation Act of 2012, the grant program assists entities as they plan for the nationwide public safety broadband network.</p> <p>Eligible entities include:</p> <p>Texas Department of Public Safety.</p>	\$4.8 million	n/a	n/a
NTIA - Broadband Technology Opportunities Program	<p>Program administered by NTIA to deploy broadband infrastructure, enhance public computer centers and encourage sustainable adoption of broadband service.</p> <p>Eligible entities include:</p> <p>Mexican Institute of Greater Houston Inc.</p>	\$2.0 million	n/a	n/a
U.S. Department of Commerce - Measurement and Engineering Research and Standards	<p>Resilient mobile broadband communication and edge computing for FirstNet.</p> <p>Eligible entities include:</p> <p>Texas A&M Engineering Experiment Station.</p>	\$1.8 million	n/a	n/a
U.S. Department of Interior, Indian Affairs – Tribal Broadband Grant	<p>The Alabama-Coushatta Tribe of Texas has been allocated a funding award to explore developing or extending broadband services in its communities to spur economic development and commercial activity, create opportunities for self-employment, enhance educational resources and remote learning opportunities, and meet emergency and law enforcement needs.</p>	\$175,000	n/a	n/a
Institute of Museum and Library Services - National Leadership Grants	<p>The Arlington Public Library in Texas will expand its digital literacy offerings to serve more community members and address the digital divide at the local level.</p>	\$40,000	n/a	n/a
Public Utility Commission of Texas - Texas Universal Service Fund (High-Cost Programs)	<p>The Texas Universal Service Fund (TUSF) was established in 1987 and supports 11 programs to ensure</p>	\$182 million ^y	\$182 million ²	-

² The payout amount is forecast every year. It is mandatory for PUC to fully fund all TUSF programs and to make all disbursements required by existing TUSF orders and commitments.
https://www.lbb.texas.gov/Documents/SFC_Summary_Recs/88R/Agency_473.pdf

	<p>Texans have affordable access to voice services.</p> <p>TUSF is funded by a statewide uniform charge or assessment, payable by each telecommunications provider that are allowed to recover the amount of assessment from retail consumers.</p> <p>The High-Cost Programs mainly help telecommunications providers offer landline service at reasonable rates in high-cost-to-serve rural areas of Texas. These programs include:</p> <p>Texas High-Cost Universal Service Plan.</p> <p>Small and Rural ILEC Universal Service Plan.</p> <p>Additional Financial Assistance.</p> <p>PURA § 56.025 Make-Whole Provision.</p> <p>IntraLATA Support.</p> <p>High-Cost Uncertified.</p>			
Public Utility Commission of Texas - Texas Universal Service Fund (Social Service Programs)	<p>The Social Service Programs provide financial assistance for voice services for low-income consumers and support programs for Texans with disabilities, such as relay services for hearing-impaired consumers. These programs include:</p> <p>Lifeline.</p> <p>Texas Relay Service.</p> <p>Specialized Telecommunications Assistance Program.</p> <p>Audio Newspaper Program.</p> <p>Tel-Assistance Support.</p>	\$21.8 million ^{vi}	\$21.8 million	-

3.2 Partnerships

Since its inception in 2021, the BDO has taken steps to identify, engage and collaborate with individuals and entities to better understand the larger broadband landscape in Texas and to accomplish the important mission of the office. These partnerships were leveraged during the development and implementation of the BEAD Program Five-Year Action Plan and include organizations that are already engaged in issues related to broadband deployment and advancing digital opportunities. A list of these partners is provided below alongside the type of organization each represents. Here, partners are assembled categorically by the type of engagement group they participated in as part of a broader stakeholder engagement campaign the BDO embarked on, with accompanying description of those groups. (For more on the engagement model, see [Section 5.1.](#)) The BDO continues to engage with working group and task force members and intends to do so over the course of the program as it recognizes the value of maintaining these partnerships for ongoing

“Expanding broadband access will require collaboration and partnerships between local governments and private entities, across counties and among residents.”

- Comptroller Glenn Hegar

planning and implementation. Sustaining these relationships helps smooth individual project execution as well as local and Tribal coordination.

3.2.1 Statewide Working Group

The Statewide Working Group consists of 27 leaders representing various statewide broadband interests. Statewide Working Group members have participated in monthly group discussions, provided written input, and continually promote data collection tools and provide feedback on program planning and design. For more on the role of the Statewide Working Group, see Section 0.

Exhibit 8: Statewide Working Group

Partner Type	Partner
Governor's Office	Texas Office of the Governor
State Agency	Texas Veterans Commission
State Agency	Texas Health and Human Services Commission
State Agency	Texas State Library and Archives Commission
State Agency	Texas Workforce Commission
State Agency	Texas Department of Agriculture
State Agency	Texas Division of Emergency Management
State Agency	Texas Department of Transportation
State Agency	Texas Department of Information Resources
State Agency	Texas Department of Housing and Community Affairs
Tribal	Kickapoo Traditional Tribe of Texas
Tribal	Alabama-Coushatta Tribe of Texas
Community-Based Organization (CBO) - Aging	AARP Texas
CBO - Minority-led	Texas Black Caucus Foundation
CBO - Digital Inclusion	Texas Association of Goodwills
CBO - Immigrant and Refugee	Connect Humanity
CBO - Disability	Disability Rights Texas
Philanthropy	Texas Rural Funders
Government Association	Texas Association of Regional Councils
Government Association	Texas Municipal League
Education	Texas Education Agency
Education	Operation Connectivity
State Chamber	Texas Association of Business
Broadband Coalition	Texas 2036
Industry	Guadalupe Valley Electric Cooperative

3.2.2 Regional Working Groups

Twelve Regional Working Groups (RWGs) were established to align with the Comptroller’s 12 economic regions. RWGs were tasked with collecting current and previous community-based broadband plans and data sets within their regional boundaries. Activities of RWG members in summer 2023 involved handling logistics for community events, facilitating in-person events and leveraging networks and communications channels for survey promotion. For more on the role of RWGs, see Section 5.1.3.

See Appendix **Error! Reference source not found.** for full list of RWG members.

3.2.3 Outcome-Area Task Forces

The BDO has also created six Task Forces, ranging from 10-36 members each, consisting of experts and leaders who specialize in or bring unique perspectives from a particular broadband-related outcome area. Task Force members provide critical input through meeting participation and completing homework exercises that inform the development of IJJA-related planning deliverables. Much like the Statewide Working Group, Task Force members have supported the BDO in promoting data collection tools and providing feedback on program drafts. For more on the role of the Task Forces, see Section 5.1.4.

Economic and Workforce Development

The Economic and Workforce Development Task Force is responsible for considering how broadband expansion and digital opportunity programs can best impact the Texas economy, the upskilling of Texans through online resources and the enhancement of job creation and job search through better access to and use of the internet.

Exhibit 9: Economic and Workforce Development Task Force

Partner Type	Partner
State Agency	Texas Workforce Commission
Regional Economic Development Coalition	The High Ground of Texas
Federal Reserve	Federal Reserve Bank of Dallas
CBO - Digital skills	Austin Urban Technology Movement (AUTMHQ)
CBO - Workforce	Goodwill Industries
Research	Technology and Policy Information Institute
Research	The University of Texas – Rio Grande Valley
Statewide Agriculture	Texas A&M AgriLife Extension Service
Statewide Agriculture	Texas Farm Bureau
Rural Chamber	Texas Midwest Community Network
Urban Chamber	Greater Houston Partnership
Tech Industry	TechNet
Labor Union	Communication Workers of America

Education

The Education Task Force ensures the needs of educators and students for broadband access are duly represented as the state makes plans for the Texas BEAD Program and digital opportunity programs.

Exhibit 10: Education Task Force

Partner Type	Partner
State Agency	Texas Education Agency
State Agency	Texas Higher Education Coordinating Board
Technical College System	Texas State Technical College
Education	Windham School District
Association	Texas Association of Community Colleges
Association	Texas Association of School Administrators
Association	Texas Association of Community Schools
CBO	Dallas Foundation
Nonprofit	Raise Your Hand Texas
Association	Texas School Alliance
Education	Tyler Independent School District (ISD)
Adult Education	Distance Education Professional Development Center (at Texas A&M)
HBCU/HSI	Paul Quinn College
Education Service Center (ESC)	ESC Region 1
Nonprofit	Changing Expectations
Education	Operation Connectivity
Association	Texas Public Charter Schools Association

Health

The Health Task Force represents the perspectives of the health care industry on broadband access in the population. This includes a particular emphasis on telehealth, which many argue promises to increase the competitiveness, productivity and accessibility of health care, as well as being critical to pandemic resilience.

Exhibit 11: Health Task Force

Partner Type	Partner
CBO	Meadows Mental Health Policy Institute
CBO	National Alliance on Mental Illness Texas
CBO	Texas e-Health Alliance
Association	Texas Association of Community Health Centers
Research Institute	Texas A&M College of Medicine
Association	Texas Association of Rural Health Clinics
Association	Texas Association of Community Clinics
Association	Texas Medical Association
Association	Texas Rural Health Association
State Agency	Texas Department of State Health Services
State Agency	Texas Health and Human Services Commission

Rural Hospital	Texas Organization of Rural and Community Hospitals
Veteran Health Organization	Texas Veterans Commission
Research Institute	The University of Texas Medical Branch
Academy	Texas Academy of Family Physicians
Research Institute	Baylor College of Medicine

Essential Services

The Essential Services Task Force represents the perspectives on broadband from public safety and poverty relief organizations, including state and municipal agencies and nonprofits, as well as perspectives related to emergency management.

Exhibit 12: Essential Services Task Force

Partner Type	Partner
State Agency	Texas Department of Housing and Community Affairs
State Agency	Texas Department of Criminal Justice
State Agency	Texans Veterans Commission
State Agency	Texas Division of Emergency Management
CBO	Feeding Texas
CBO - Disability	Texas Technology Access Program at The University of Texas
CBO - I&R	United Ways of Texas
CBO - Veteran	Combined Arms
State Entity	Commission on State Emergency Communications
State Agency	Texas Achieving a Better Life Experience

Civic and Social Engagement

The Civic and Social Engagement Task Force represents local governments and community-based nonprofits. Its focus includes identifying the role towns, local governments and community organizations have in facilitating broadband expansion, digital skills training and affordability.

Exhibit 13: Civic and Social Engagement Task Force

Partner Type	Partner
Library - Rural	Abilene Library Consortium
CBO	Community Tech Network
CBO	Dallas Innovation Alliance
CBO	Senior Access (Capital Region)
CBO/Volunteerism	OneStar Foundation
CBO - Seniors	Texas AARP
CBO - Youth	Texas Network of Youth Services
State Agency	Texas Demographic Center
State Agency	Texas Department of Information Resources
State Agency	Texas State Library and Archives Commission
Government Association	Texas Association of Counties
Government Association	Texas Association of Regional Councils
Government Association	Texas Library Association
Government Association	Texas Municipal League
Philanthropy	Texas Rural Funders
VITA Tax Center	United Way Denton County
Library - Urban	Harris County Public Library
Philanthropy	T.L.L. Temple

Business and Telecom

The Business and Telecom Task Force serves as the primary voice of industry in shaping the BEAD Program in Texas, while also examining the best way for Texas to implement the Digital Opportunity Plan. Its members address all issues of concern to the telecommunications industry, and they diligently bring to the state’s attention matters that are critical to running the BEAD Program and digital opportunity programs in a manner that achieves high industry participation and mobilizes a variety of proposed projects that will jointly reach as far as possible toward closing the digital divide in Texas with respect to infrastructure and broadband availability.

Exhibit 14: Business and Telecom Task Force

Partner Type	Partner
Utility	Lower Colorado River Authority
State Agency	Texas Department of Transportation
Electric	Graybar
Construction	Congruex
Construction	Mears Broadband
Construction	Texas Area Telecom
Research Institution	Internet2 Technology Evaluation Center at Texas A&M

Provider Association	Texas Telephone Association
Provider Association	Texas Statewide Telephone Cooperative Inc.
Provider Association	Texas Cable Association
Provider Association	Wireless Internet Service Providers Association, Texas
Provider Association	Texas Electric Cooperative Association
Manufacturing Association	Texas Association of Manufacturers
Internet Service Providers	
AT&T	MSEC Communications LLC
Nextlink Internet	Electronic Corporate Pages Inc.
Cobb Fendley	Victoria Electric Coop/Infinium Broadband
HC Wireless LLC	AMA TechTel
Crown Castle	SignalNet Broadband Inc.
TekWav	Net Ops Communications LLC
AW Broadband	AMA Communications
Nexstream	Fiberlight
Highline	Rock Solid Internet a Vtx1 Company
Bluebonnet Fiber	Space Exploration Technologies
Lit Communities	Comcast

3.2.4 Texas A&M System

The BDO has further engagement with Texas A&M AgriLife, which connects agriculture and life sciences programs at Texas A&M University and the Texas A&M University System. The BDO provided the organization with a public engagement toolkit to promote public meetings and surveys to rural communities through their extension office community networks and communications channels. Efforts of this partnership have expanded outreach to rural areas and helped identify local broadband assets and needs. AgriLife has also shared relevant data and studies it has conducted, facilitated or contributed to. The information provided insight on the impact of broadband as well as the barriers faced across outcomes, such as rural and agricultural economies, health, education and social challenges.

The BDO has also contracted with the Internet2 Technology Evaluation Center (ITEC) at Texas A&M University. ITEC is a premier research lab focusing on public safety, communications and interoperability that convenes government, industry, practitioners and academia, creating collaborative teams to identify problems, define solutions and get technologies in the hands of first responders and other front-line professionals for testing and evaluation. ITEC’s staff of experienced and knowledgeable engineers will provide technical support and assist the BDO with evaluating BEAD Program grant applications. They will ensure proposed technology solutions meet the technical guidelines established by the BEAD Program and provide actual intended benefits prior to funds being awarded.

3.2.5 Board of Advisors

The Broadband Development Office Board of Advisors was created in 2021 to provide guidance to the BDO regarding the expansion, adoption, affordability and use of broadband service and the programs administered by the office. The Board of Advisors is composed of 10 members, including the Texas Comptroller who serves as chair and a non-voting representative of the BDO. The other members are appointed by the Offices of the Texas Governor, Texas Lieutenant Governor and the Speaker of the House. These appointees represent and bring the perspective of critical outcome-areas such as education, hospitals and telehealth, economic development, historically disadvantaged communities, construction and ISPs.

Exhibit 15: Broadband Development Office Board of Advisors

Partner Type	Appointed by	Board Member
Economic Development	Governor Greg Abbott	Adriana Cruz, Executive Director of Texas Economic Development and Tourism Office
Telecommunications	Governor Greg Abbott	Vacant
Urban Area	Lieutenant Governor Dan Patrick	Robert F. McGee, Senior Vice President of Telecom Operations at Quanta
Primary and Secondary Education	Lieutenant Governor Dan Patrick	Dr. Scott Muri, Superintendent of Ector County Independent School District
Border Communities	Lieutenant Governor Dan Patrick	Sergio Contreras, Chief Executive Officer at Atlas, Hall & Rodriguez L.L.P.
Rural Area	Speaker Dade Phelan	State Representative Trent Ashby, District 9
Health and Telemedicine	Speaker Dade Phelan	Mari Robinson, Director of Telehealth with the University of Texas Medical Branch
Higher Education	Speaker Dade Phelan	Alonzo Cantu, Member of the University of Houston System Board of Regents

3.3 Asset Inventory

The BDO has conducted a robust campaign to engage the partners listed above and other stakeholders to systematically collect data and catalogue broadband assets across the state. Identifying and taking inventory of resources available to implement the Five-Year Action Plan is critical to understanding the needs and gaps pertaining to broadband deployment and digital opportunity in the state and in determining which of those assets may be available to help the BDO achieve its BEAD Program goals.

Primary sources for this asset inventory included direct qualitative stakeholder engagement but also direct quantitative engagement through the DRMT Survey, described in Section 5.1.6. Through the DRMT Survey results, the BDO found a broad array of digital opportunity programs offered by responding entities, many of which focus on access to devices, digital literacy, technical support and broadband access and affordability. See Appendix Texas Digital Opportunity Asset Inventory for the full list. Other key findings include:

- Organizations serve covered populations across the state.
- Many organizations, including more than 90 percent of responding libraries, offer free Wireless Local Area Network (WLAN) or Wi-Fi for public use.
- Many organizations offer digital skills resources or training focused workforce-related skills.
- A variety of organizations and organization types promote broadband subsidy programs such as the ACP.

The asset inventory has been organized according to broadband deployment, broadband adoption, broadband affordability, broadband access and digital opportunity. That said, many assets have considerable overlap among these categories and should not be considered exclusive to a given category.

3.3.1 Broadband Deployment

In addition to assets owned by the 337 ISPs and associated industry groups within the state, several assets have been identified related to broadband deployment, including:

3.3.1.1 Public Infrastructure

TxDOT has several initiatives relevant to broadband deployment:

Exhibit 16: TxDOT Broadband Initiatives

<p>Joint Trench Opportunities^{vi}</p>	<p>A joint trench is an open-cut trench shared by several utility providers, specifically broadband providers. HB 2422 of the 86th Texas Legislature requires TxDOT to provide notice on TxDOT’s website of opportunities for broadband providers. Providers may collaborate with TxDOT to deploy broadband conduit or other facilities in those rights-of-way. TxDOT is required to give special consideration to broadband deployment that will likely improve access to broadband in rural or underserved communities. The Right of Way (ROW) division has created a Joint Trench Application that will allow broadband providers to submit a request for those interested in participating in the joint trench opportunity.</p> <p>TxDOT is required to submit a report to the Legislature explaining the action taken and any costs or savings to the state and private entities associated with voluntary joint trenching opportunities.</p>
<p>Joint Duct Bank Accommodation Program</p>	<p>The Joint Duct Bank Accommodation Program is designed to support the broadband movement and to accommodate broadband facilities within TxDOT ROW. The program is meant to provide better ROW management while supporting future broadband and utility installations. The soundness of the standards developed needs to be validated through discussions with the industry.</p>
<p>Right-of-Way Utility and Leasing Information System (RULIS)</p>	<p>The ROW and Transportation Program Divisions have launched RULIS as of July 2023, which serves to automate the utility and leasing process. To support this initiative, TxDOT offers virtual training and materials such as job aids and interactive training modules for consultants who access RULIS. This enables broadband deployment and fosters competition among companies through providing access to right-of-way.</p>
<p>Build and They Will Come</p>	<p>The methodology “Build and They Will Come” demonstrates how TxDOT builds in consideration of internet connectivity needs by installing empty conduit during highway construction. This allows TxDOT to form partnerships with providers or private groups to expand broadband with the natural growth of highway infrastructure. This effort by TxDOT contributes to broadband deployment and connects rural areas to internet as roads are developed.</p>
<p>Trade and Share Conduit and Fiber Optics</p>	<p>To expand fiber optic cabling and conduit, TxDOT trades existing or planned conduit and fiber on a foot-by-foot basis. This increases broadband deployment and makes services more affordable, as sharing fiber optic cables among agencies reduces telecommunication costs for the public sector.</p>

LEARN

In 2004, the Lonestar Education and Research Network (LEARN) was created when Texas research institutions and health science centers reached a consensus on a shared vision to create an organization

dedicated to high performance networking in Texas. LEARN was enabled by the 78th Texas Legislature via Senate Bill (SB) 1771. This effort is geared toward helping build a high-speed, advanced fiber optic network for research, education, health care and nonprofit partners to serve the state of Texas. In the years since, LEARN has become a vital and trusted partner that empowers its members to execute their missions through technology and collaboration. LEARN's vision is to be the most efficient and effective enabler of research, education, health care and public service communities in Texas through using technology and shared services. Its network infrastructure:

- Spans more than 3,200 miles across the state, running east to west from Beaumont to El Paso and north to south from Lubbock to Brownsville.
- Connects more than 300 direct and affiliate members.
- Relies on scalable state-of-the art optical fiber technology.
- LEARN-owned high-performance routers at its 26 strategically located Points of Presence (POPs).

LEARN is built on dense wavelength division multiplexing (DWDM) optical technology, providing the capability to transport multiple high-capacity signals over a shared optical fiber by using the different color wavelengths of laser light. DWDM is state-of-the-art technology that is scalable and permits LEARN to leverage its initial investment in optical fiber by adding additional capacity at marginal costs. LEARN has grown to 32 DWDM on-ramps within Texas.

LEARN's network relies on agreements with the private sector that provide the long-term use of optical dark fibers and/or long-term leases of optical wavelength capacity. When dark fiber is conveyed via an indefeasible right to use agreement, LEARN provides the infrastructure to "light" the fiber and can add additional capacity as needed without having to revise a contract with the fiber owner. In wavelength capacity agreements, the service provider provisions the infrastructure and bandwidth under the terms and conditions of the agreement.

Deploying LEARN-owned high-performance routers at its 26 strategically located POPs, LEARN makes it possible for its members and affiliates to bridge the last mile with their own network connections at minimal cost. In most cases, LEARN's network segments are protected through rings that ensure continued operation of the network in case of a fiber cut or other disruption to a segment.

Several university members, as well as the Texas Education Telecommunications Network (TETN), operate their own networks as overlays on LEARN's network, which in turn are linked into LEARN's statewide fiber and packet infrastructures at LEARN's POPs. LEARN collaborates

closely with those other organizations to ensure that high-performance networking is made available at the lowest cost, best reliability and highest performance possible.

Exhibit 17: LEARN's Network in Texas



Network services include:

- Blended and Resilient Commodity Internet.
- Cloud Bridge (Enhanced access to Amazon Web Services, Azure, Google Cloud Platform, Oracle Cloud).
- Content Provider Peering and Caching.
- Cross-Connect and Colocation.
- Dedicated Transport.
- Distributed Denial of Service Mitigation.
- Local Switching.
- Managed Services (Border Router, WAN).
- Multiprotocol Label Switching Transport.

The Lower Colorado River Authority (LCRA)^{vii}

LCRA operates a highly reliable telecommunications network and can provide middle mile and backhaul broadband access and radio products and services to its service territory.

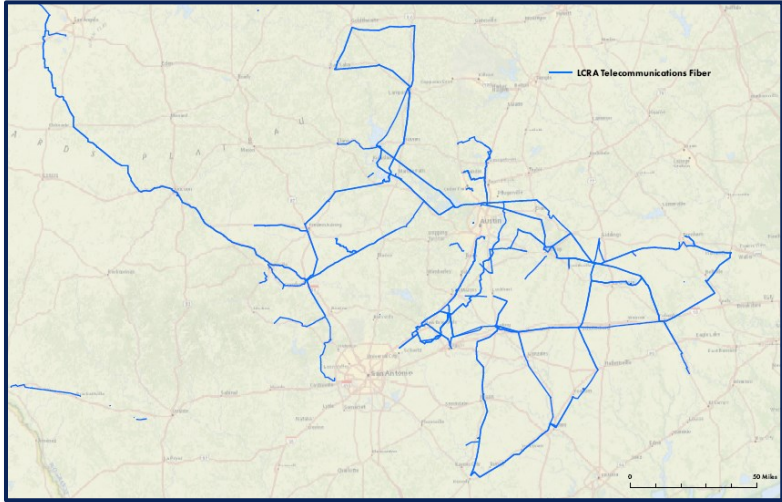
In May 2021, the 87th Texas Legislature passed SB 632, which authorized LCRA to provide fiber capacity and facilities for the purpose of facilitating broadband service connectivity. This bill contains key points that are critical to LCRA’s fiber business, allowing the provider to:

- Provide middle mile and backhaul fiber access to third parties.
- Build out fiber and related facilities to provide access points to connect potential middle mile and backhaul customers.
- Provide ISPs with the necessary infrastructure to connect to consumers.

Just as LCRA contributed to electrifying the Hill Country nearly a century ago, SB 632 and related legislation enable LCRA to contribute to the development of fast, reliable and cost-effective broadband services in their service territory.

Cost-effective and reliable broadband is vital for economic development, health care, government services and education in rural Texas communities. LCRA’s high-speed and high-capacity fiber optic network forms the backbone of the LCRA middle mile broadband network. LCRA seeks partnerships with those who can connect to their middle mile and deliver reliable, high-speed and cost-effective last mile internet service.

Exhibit 18: LCRA Telecommunications Fiber



SB 632 prohibits LCRA from acting as a local ISP and providing broadband service directly to a retail customer, but the quasi-state agency welcomes inquiries from private ISPs or from public/private partnerships that are interested in collaborating with LCRA to deliver fast, reliable and cost-effective broadband services in specific regions. LCRA was a bidder in NTIA’s Enabling Middle Mile Broadband Infrastructure Program.

3.3.1.2 Workforce Development

More than 30 percent of workers in the United States lack digital skills, and nearly 40 percent of those workers are required to use moderate or advanced computer skills on the job.ⁱⁱⁱ This skills gap creates talent recruitment challenges for businesses of all sizes. Within Texas, several organizations are working to address this gap and expand economic opportunity.

Program Spotlight

The Austin Urban Technology Movement is a nonprofit that bridges the gap between the Black and Hispanic communities and the tech industry through job placement, career development and networking opportunities.

Twenty-one organizations offering workforce development-related programs responded to the DRMT Survey. These programs range in scope, but they generally focus on building digital literacy skills for workforce competency. Several programs provide work-based learning opportunities and apprenticeships to students and adults.

Voice of Texans

“One of the key elements for the success of digital tools in learning transformation is access to technology. ... Having a statewide plan and funding program will help break the barriers and allow for our student population to have equitable access to technology and reliable broadband access.”

- Higher Education DRMT Survey Respondent

Many respondent organizations also serve key covered populations, including racial and ethnic minorities and incarcerated individuals.

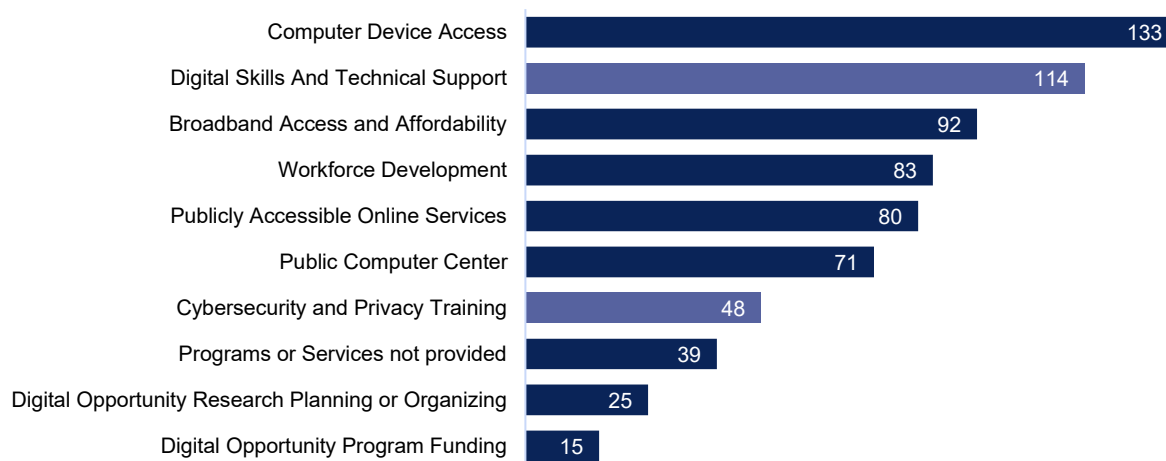
As libraries often serve as a place for community members to search and apply for jobs, TSLAC recognizes its role in workforce development and is pursuing avenues to support patrons in this area. In support of this cause, TSLAC has

hired a workforce development consultant and is creating a website for libraries to provide workforce development resources.

3.3.2 Broadband Adoption

Responding organizations to the DRMT Survey indicated they offer digital skills and technical support, collectively equaling 114 programs across the state. A total of 48 cybersecurity and privacy trainings are offered as well, creating a safe environment for Texans online (**Exhibit 19**). These offerings provide Texans with resources to improve digital literacy and avoid online threats, therefore increasing adoption of technology.

Exhibit 19: Programs and Services Offered by Respondent Organizations



Community Tech Network

The nonprofit Community Tech Network (CTN) is a catalyst for adoption through its capacity-building initiative called DigitalLIFT. DigitalLIFT is an online-learning platform created for nonprofits that want to promote digital opportunity. Multiple course trainings are offered for agency and organization staff to complete at their own pace. Offerings include Digital Navigator Training, Train-the-Trainer Training, ACP Enrollment Training and a DigitalLIFT Program/Project Management Intensive. CTN also offers specialized versions of the DigitalLIFT program, including SeniorLIFT for senior serving agencies and

LibraryLIFT, which is for librarians and library volunteers. Program attendees are then able to serve as digital navigators, train others to become trainers themselves or help constituents sign up for the ACP. DigitalLIFT programs foster adoption as they equip employees of CAIs and organizations with the skills needed to improve the digital literacy of others and allow for improved utilization of technology.

Pottsboro Area Public Library

The Pottsboro Area Public Library has expanded beyond traditional services offered to the community through the creation of a telehealth room in its facility. Community members set up doctors' appointments for this room through their personal providers or UNT Health Science Center. For patients lacking digital literacy, the library offers support services for appointments as staff can help with necessary pre-appointment paperwork and appointment check-in. Once inside, the telehealth room is equipped with the needed devices for a virtual appointment. This fosters adoption by introducing a new use for technology to many community members that are unfamiliar with telemedicine.

Exhibit 20: Telehealth Room in the Pottsboro Area Library



Texas State Library and Archives Commission (TSLAC) Grants

TSLAC is furthering the initiative of the Pottsboro Area Public Library through a telehealth grant. Funding provides the space and resources needed for telehealth services as well as training for library staff on technology, protocols, policies, marketing and consumer health information. This has been awarded to four libraries and has improved community adoption by expanding the use of technology for community members.

Voice of Texans

“Libraries have become the first line of defense in teaching digital literacy.”

- TSLAC Employee

Ten libraries across Texas were awarded funding from TSLAC through a Digital Navigators Grant. Through this funding, libraries implemented programs to identify and assist members of their community needing assistance with devices, connectivity and digital skills. The Digital Navigators Grant also trained library staff to be digital navigators through Literacy Minnesota training. This grant has spurred adoption as it enables awarded libraries to identify the digital literacy needs of their constituents and provide staff with the necessary skills to address the gap.

Digital Literacy Toolkit

TSLAC partnered with the Texas Workforce Commission and Texas Center for Literacy and Lifelong Learning in the creation of an online digital literacy toolkit. This toolkit offers seven digital literacy training modules that are downloadable and customizable. The Digital Literacy Toolkit contributes to adoption as it enables libraries to teach community members digital skills including computer basics, internet and cyber safety, as well as functions such as email, Microsoft Word and Excel. Further, this toolkit promotes economic opportunities as there are trainings on job search and resume writing.

Digital Literacy Study

In March 2023, TSLAC conducted a Digital Literacy Study that assessed the digital literacy trainings public libraries provide to their communities. Through interviewing more than 300 librarians, the study documents a holistic view of current practices across the state, barriers, cost estimates and partnerships with libraries to execute digital literacy training. [The Digital Literacy Study](#) promotes internet adoption by offering the following recommendations:

- Establish a grant program related to digital literacy in Texas libraries.
- Foster mentoring and peer support for small libraries.
- Provide more programmatic attention to older adults/seniors.
- Create local public library partnerships.

Ploud Website Program

Ploud, or Public Libraries in the Cloud, is a website that TSLAC offers for Texas public libraries to use and maintain as their own. This is utilized by more than 170 public libraries, with the majority being small and in rural locations. Ploud improves adoption as it offers a different channel for libraries to connect with their patrons. CAIs often serve as trusted sources to rural communities and provide important information, which is why it is critical for libraries to expand communication beyond the facility.

3.3.3 Broadband Affordability

Affordability is a common thread through all stakeholder and public engagement, and many organizations the BDO has heard from are actively promoting existing government subsidy programs.

3.3.3.1 Affordable Connectivity Program (ACP)

The ACP is an FCC benefit program that helps ensure households can afford the broadband they need for work, school, health care and more. The benefit provides a discount of up to \$30 per month toward internet service for eligible households and up to \$75 per month for households on qualifying Tribal lands. Eligible households can also receive a one-time discount of up to \$100 to purchase a laptop, desktop computer or tablet from participating providers if they contribute more than \$10 and less than \$50 toward the purchase price. As of July 2023, more than 1.5 million Texas households are enrolled in ACP. According to data made available on the ACP [website](#),^{viii} 216 ISPs in Texas include ACP as part of their offerings (**Exhibit 21**).

Program Spotlight

“We help families enroll in the Affordable Connectivity Program. We also provide a list of ISPs for families based on the addresses and provide a device for our students and MIFI if needed.”

- Ector County Independent School District

Exhibit 21: ISPs and ACP Offers

	Offers Connected Devices	Total ACP Providers
Fixed + Mobile Broadband	18	23
Fixed Broadband	7	121
Mobile Broadband	52	72
Total	77	216

Some ISPs responded to the DRMT Survey, reporting that they generally promote the ACP through scalable media, such as advertisements and bill inserts. Online and print advertisements were the most reported form of outreach. In addition to ISPs offering the program, several DRMT Survey respondents offer promotion and consumer support for the ACP and other consumer subsidy programs (**Exhibit 22**).

Exhibit 22: Organizations with ACP Promotions

	Promote ACP Enrollment	Provides or Promotes Home Internet Subsidies
Government Agencies	8	5
Community Based Organizations	13	10
Library, Schools and Higher-Education	20	10

3.3.3.2 Lifeline

The Lifeline program is a governmental offering established by the FCC that provides telephone assistance to low-income individuals. As stated by the [Public Utility Commission of Texas](#),^{ix} applicants may qualify for Lifeline if their household receives benefits such as Medicaid, Low-Income Home Energy Assistance Program support, Supplemental Nutrition Assistance Program (SNAP), Federal Public Housing Assistance, Supplemental Security Income (SSI), Health Benefit Coverage under Child Health Plan (CHIP), National School Lunch Program – Free Lunch Program or Temporary Assistance for Needy Families (TANF). An individual also qualifies if the household income meets or is below 150 percent of the poverty guidelines. This initiative expands affordable access through lessening the monthly cost of telephone service, reducing the basic monthly telephone rate up to \$12.75. This affordability also expands to eligible consumers living on Tribal lands, who receive up to \$25 of an additional benefit and up to a \$100 reduction for first-time connection charges.

3.3.3.3 E-Rate

The FCC offers the E-Rate program, which targets internet affordability for schools and libraries. E-Rate uses funds from the Universal Service Fund to offer discounts for telecommunications, internet access and internal connectivity for libraries and schools. Pricing discounts can range from 20-90 percent depending on the poverty level of the school. E-Rate also acknowledges the importance of broadband to these institutions in less populous communities as there is a higher discount awarded in rural areas. This program expands affordable internet as libraries and schools are CAIs utilized by community members for connectivity purposes.

Libraries Connecting Texas (LCT)

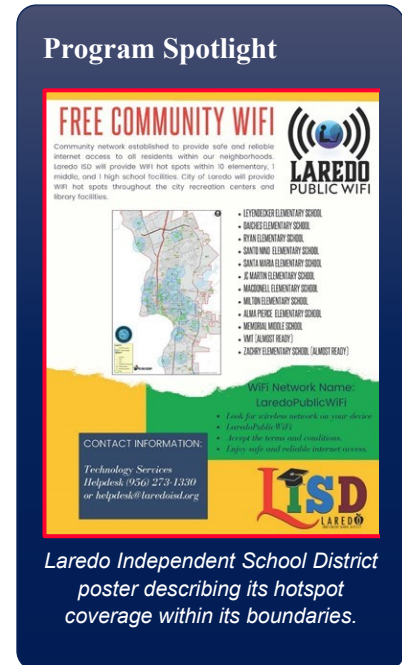
TSLAC launched LCT to assist libraries in applying for E-Rate. This has improved internet access as it increased Texas public library participation in the E-Rate program, with 181 libraries and 114 applications filed by LCT libraries in 2022. This totaled 124 funding requests amounting to more than \$1.2 million. LCT has brought greater bandwidth to the public and a lower cost for internet service, multiplying internet public access points for Texans across the state.

3.3.4 Broadband Access

Many assets were shared through stakeholder engagement and the DRMT Survey, including public Wi-Fi networks and middle mile infrastructure.

3.3.4.1 Public Wi-Fi Networks

Local libraries are the most widely known examples of organizations providing free and public access to broadband and related resources. These institutions have extensive experience in meeting digital opportunity needs for people of all ages and backgrounds with unparalleled reach and trust. *More than 90 percent of libraries reported in the DRMT Survey that they provide free WLAN or Wi-Fi for public use.* Several other organizations, such as nonprofits and government agencies, reported offering public Wi-Fi or hotspots for residents as well.



TSLAC

Competitive Grants

TSLAC CARES is an ARPA-funded competitive grant program that addresses libraries' digital access needs. Funding is channeled toward programs, training and tools that enable libraries to increase community access to important digital technologies and services.

Community Advancement Packages (CAPs) is an ARPA-funded competitive grant program administered by TSLAC that allows libraries to expand their offerings to the communities they serve. CAPs are for specifically targeted areas such as programming and services, technology, special collection development and critical needs of the library. This funding pertains to access as it allows for the improvement of technology services in libraries.

You Can Do I.T. Training

You Can Do I.T. Training was offered by TSLAC from 2016-2019. This training focused on improving the technology fluency of rural library staff and instilling confidence in communicating with IT staff and patrons. Recognizing that public libraries are expected to have a level of IT skills to run efficiently, TSLAC trained more than 300 library staff in networking, hardware and software and in teaching technology. Initial courses were created with Carson Block, and TSLAC now offers a free course online. You Can Do I.T. Training has improved access to public internet by empowering libraries to function as their own IT. As staff has the skills to resolve internet issues, public libraries maintain consistent internet availability for their communities.

Program Spotlight

“The Del Valle Libraries serve a growing area southeast of Austin in an unincorporated part of Travis County. There are few services in the area which had a 2020 census count of around 30,000 people. Many of our library users complain of having insufficient internet access at their homes.”

- Del Valle Libraries

Library Tech Academy

The Library Tech Academy was a training grant offered by TSLAC for three years and served 27 libraries. This program focused on rural libraries and worked to expand capacity for strategic technology planning through an eight-week course. This program furthered adoption as libraries designed and implemented a technology project funded by a reimbursement grant of up to \$1,000 at the conclusion of the training.

Edge

TSLAC offers an online assessment called Edge that enables libraries to make data-informed decisions and align their technology resources to the needs of the community they serve. This free service for Texas public libraries is used by more than 300 libraries in the state. The Edge assessment aligns with digital opportunity as it measures libraries in community value, engaging the community, decision-makers and organizational management. Edge training is also offered, focusing on digital opportunity and data fluency. The results of the Edge assessment and trainings maximize the impact of the public internet access as libraries can align offerings to the priorities of their community.

Annual Texas Public Library Speed Test

Once a year, TSLAC administers a speed test for all public libraries to take on a wired public access computer after hours. The test measures upload and download (Mbps) speeds, and results are sent to TSLAC for analysis. Results demonstrate the quality of internet at public libraries across the state and offer insight of trends by size and location. Understanding the status of internet access in public libraries allows TSLAC to shape data-based plans that support broadband improvement.

3.3.4.2 Public Middle Mile

Education Service Center (ESC) Region 20 Fiber Ring

ESC Region 20 has expanded the middle mile by creating 586 miles of fiber. This has connected 320,000 students and 11 rural and suburban public libraries to internet in the San Antonio area. The fiber ring reduces the barrier of the digital divide as middle mile not only connects but also reduces the cost of

internet connectivity. Its impact reaches beyond households with students and into the larger community as TSLAC worked to connect libraries in the area to the fiber ring. This innovative solution is the result of communities seeing the inefficiencies of E-Rate in their region and creating a customized approach that resolves the connectivity gap.

3.4 Needs and Gaps Assessment

The BDO has conducted the following assessment to identify the gaps between the current state and needs of broadband deployment and digital opportunity in Texas. The assessment has been organized according to broadband deployment, broadband adoption, broadband affordability, broadband access and digital opportunity. That said, many needs and gaps have considerable interconnections between these categories and should not be considered exclusive to a given category. Much of the quantitative input has been drawn from the Texas Digital Opportunity Public Survey, or simply the “Public Survey,” described in Section 5.1.6. Other sources include:

- [FCC National Broadband Map.](#)
- [NTIA Internet Use Survey.](#)
- [NTIA Indicators of Broadband Need Map.](#)
- [American Community Survey.](#)

Additional insights on needs and gaps are expected to be gleaned from the ongoing public meetings taking place through August 2023.

3.4.1 Broadband Deployment

Assessment of broadband deployment has relied on the most recent version of the [FCC National Broadband Map](#),^x which has data as of Dec. 31, 2022, and is based on “served” being reliable broadband service as defined by the BEAD Program NOFO. There are more than 9.8 million Broadband Serviceable Locations (BSLs) within Texas (**Exhibit 23**). Each BSL is considered “served,” “underserved” or “unserved” based on the download and upload speeds — in megabits per second (Mbps) — reported:

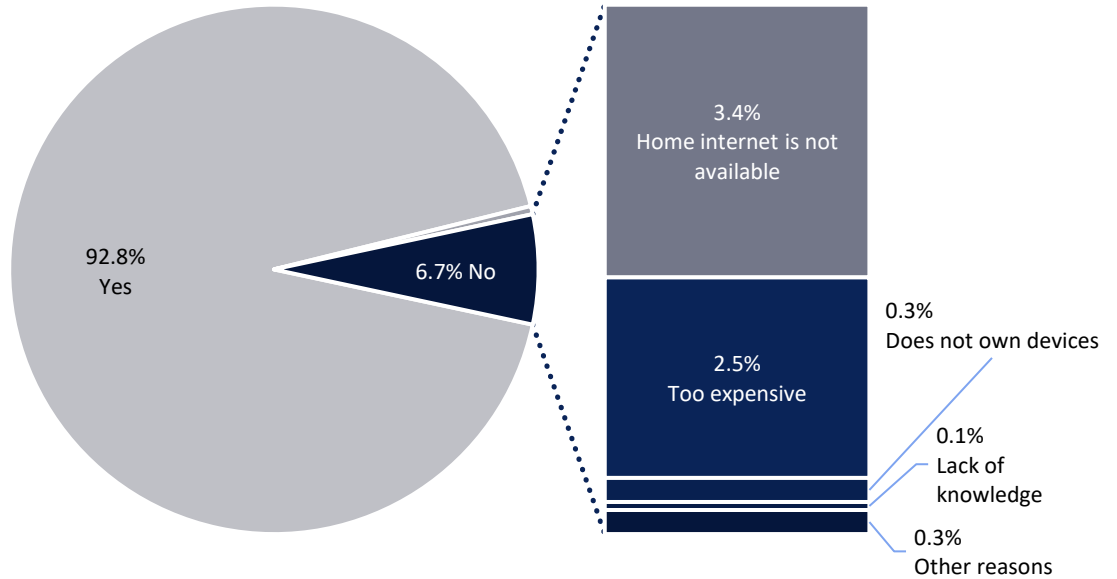
Exhibit 23: Upload and Download Speeds of Unserved, Underserved and Served BSLs

Classification	Down	x	Up	No. Locations	Percent of BSLs
Unserved	< 25	x	3	779,378	7.9%
Underserved	> 25	x	3	362,878	3.7%
	< 100	x	20		
Served	≥ 100	x	20	8,734,827	88.4%

3.4.1.1 Public Perception

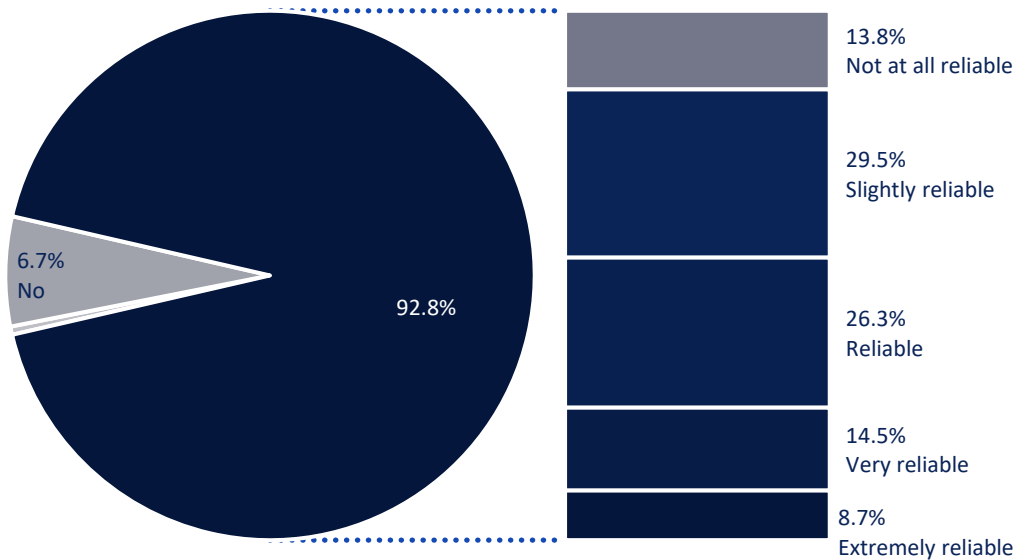
Although most rural residents who responded to the Public Survey did have home internet access (>90%), for those who did not, availability was cited as the top concern, followed by affordability (**Exhibit 24**).

Exhibit 24: Can rural Texans connect to the internet at home, and if not, why not?



Although most rural residents who responded to the survey did have home internet access (>90%), 47 percent of these rural residents responded that their Internet speed was not at all reliable, or only slightly reliable, for their needs (**Exhibit 25**).

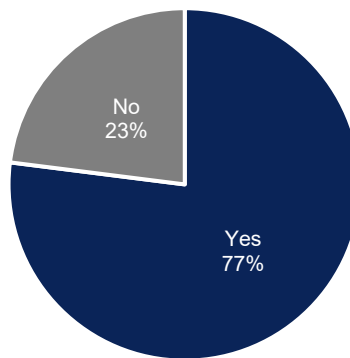
Exhibit 25: Can rural Texans connect to the internet at home, and if so, how would they rate it?



3.4.1.2 Industry Perspective

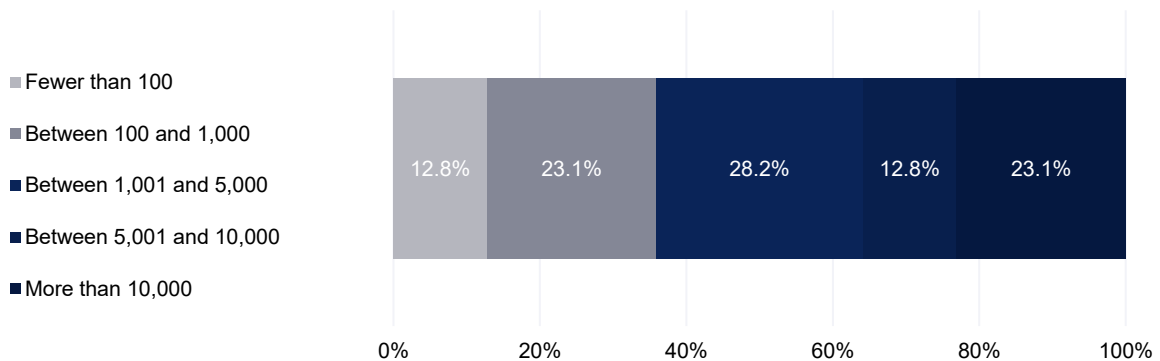
The BDO sought to shed light on the scale of the funding gaps that potential broadband deployers face by probing how much deployment they would be prepared to carry out for different levels of subsidy per location. Because this question would be difficult to answer in the abstract, the respondent pool was limited to ISPs that indicated they already had identified specific expansion opportunities for which they might apply to the BDO for BEAD Program funding. Fortunately, most of the ISP respondents who had indicated an intention of applying for BEAD Program funds also indicated they had identified such opportunities (**Exhibit 26**).

Exhibit 26: Have you identified specific expansion opportunities for which you might apply to BDO for BEAD Program funding?



Asked about the total number of locations that would be served by the BEAD Program projects they were considering, ISPs responded with plans to deploy to more than 100,000 locations; however, this figure is not precise because the ISPs were asked for ranges, and almost one-quarter chose the highest of the ranges, which had no upper bound (**Exhibit 27**).

Exhibit 27: About how many locations are there in the areas that you have identified as potential BEAD Program expansion opportunities?



Voice of Texas Industry

“NOFO is silent about partnerships – partnerships with one bid and a mix of technology.”

- Business and Telecom Task Force Member

From these responses, it looks as if the BEAD Program is already driving impressive demand that, as fulfilled, will build a lot of broadband. Of course, even 100,000+ locations of BEAD Program-funded expansion being contemplated falls far short of demonstrating demand for BEAD Program grants will be sufficient to meet the program’s ambitious universal access goal. But it is a large enough pool of BEAD Program-funded expansion plans to serve as a basis for inquiry about needed subsidies per location that can shed substantial light on BEAD Program “demand.”

3.4.1.3 Workforce

Availability of workforce to support broadband deployment across the state will be a critical success factor. Domains where workforce will be required include telecom, civil, information technology and electronics and electrical, among others. Implementation of similar programs across the country can lead to a shortage of technical workforce that includes roles like fiber splicers, technicians, etc. It is estimated that Texas currently employs 23,446^{xi} workers with core telecom equipment and line installation skills.³ Inputs from the Business and Telecom Task Force⁴ suggest that the workforce supply is a concern for the industry and dedicated investments in the sector will require larger workforce (**Exhibit 28**).

Voice of Texas Industry

“Recommend that BDO looks at different metrics when choosing under the threshold, likely that the licensed fixed wireless highest cost hits overall metrics – critical to not fall to the lowest cost metric under threshold – one that is higher cost could hit other metrics like fair labor, more fiber, etc.”

- Business and Telecom Task Force Member

Exhibit 28: Texas Labor Market Statistics - Current and Projected for workers with Telecom related technical skills

SOC Code	Occupation Title	2020 Est. Employment	2030 Est. Employment	Education	Experience	Training
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	12,346	13,593	Postsecondary non-degree award	None	Moderate-term on-the-job training
49-9052	Telecommunications Line Installers and Repairers	11,100	11,689	High school diploma or equivalent	None	Long-term on-the-job training

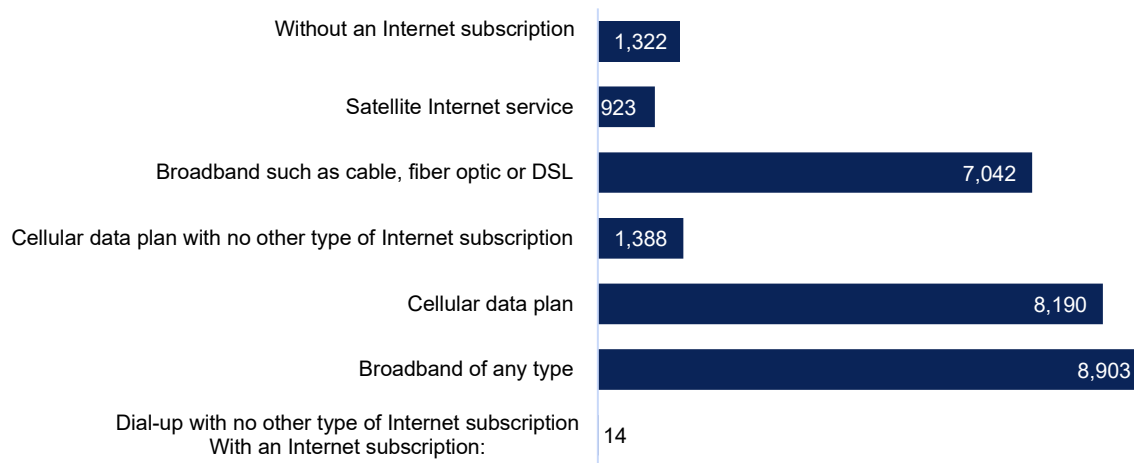
³ Telecom equipment and line installation skills refer to SOC Code 49-2022 and 49-9052 for Telecommunications Equipment Installers and Repairers, Except Line Installers and Telecommunications Line Installers and Repairers, respectively.

⁴ Business and Telecom Task Force is a part of Texas BDO’s Public Engagement Plan. Please refer to Section 5.1: Stakeholder Engagement Process for details.

3.4.2 Broadband Adoption

According to recent data from the U.S. Census Bureau’s American Community Survey, 1,322,000 Texas households do not have an internet subscription. For households with a subscription, 923,000 have access to satellite internet service, which is considered unreliable. 1,388,000 households only have a cellular data plan with no other type of internet subscription (**Exhibit 29**). This statistic supports input received from the Education Task Force, where a member voiced that a student owning a smartphone does not necessarily have internet at home. The significance of an internet subscription never felt as crucial as it did during the pandemic when schools transitioned to virtual learning, and access to reliable, quality internet became a necessity for academic success.

Exhibit 29: Broadband Subscribers: By Technology (number of households, in thousands)^{5xii}



3.4.2.1 Digital Literacy: Completing Tasks

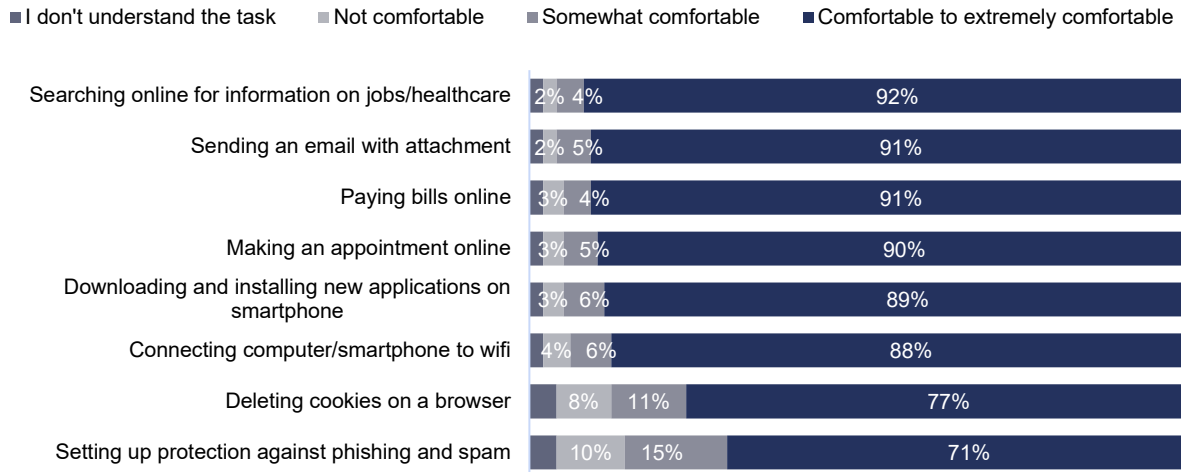
When asked about “Individual Confidence in Successfully Completing Tasks Using Digital Literacy,” preliminary findings showed:

- Responses reflected a high level of confidence in digital skills generally and across covered populations: 92 percent of all survey respondents are comfortable searching for information about jobs or health care and sending an email with an attachment.
- Respondents expressed the lowest degree of confidence with digital skills related to online safety and cybersecurity: 71 percent are comfortable protecting against phishing and spam email.
- 53 percent of respondents who identify as individuals with limited English proficiency would be interested in internet or computer training classes.

At least 85 percent of respondents felt at least somewhat comfortable performing tasks using the internet, from paying bills to more sophisticated tasks such as deleting cookies or setting up protection against phishing and spam (**Exhibit 30**).

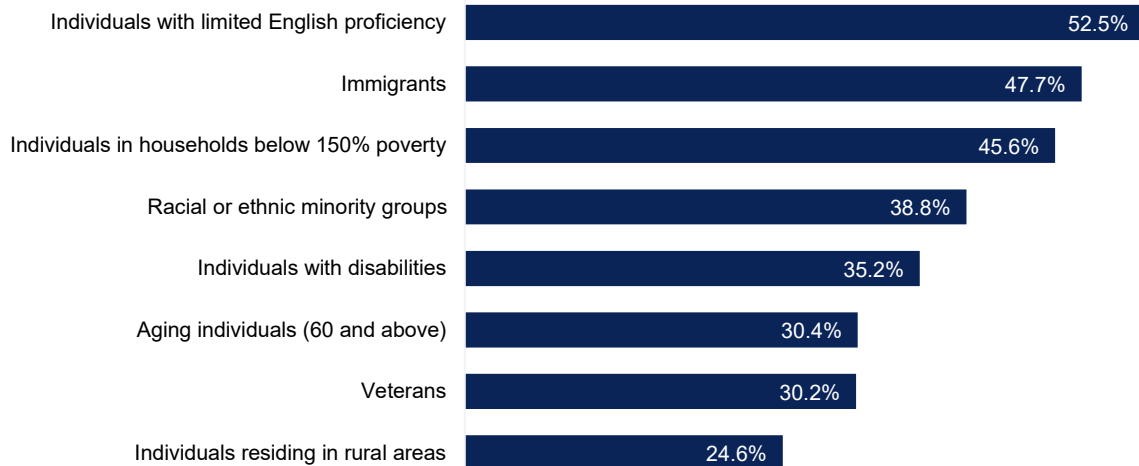
⁵ ACS 5-Year Estimates Subject Tables

Exhibit 30: Please indicate how comfortable you would be doing each of the following tasks.



Individuals with limited English proficiency and immigrants were the most likely covered populations responding to the survey to desire access to internet or computer training classes (**Exhibit 31**).

Exhibit 31: By covered population: Would you be interested in internet or computer training classes for you or your family?



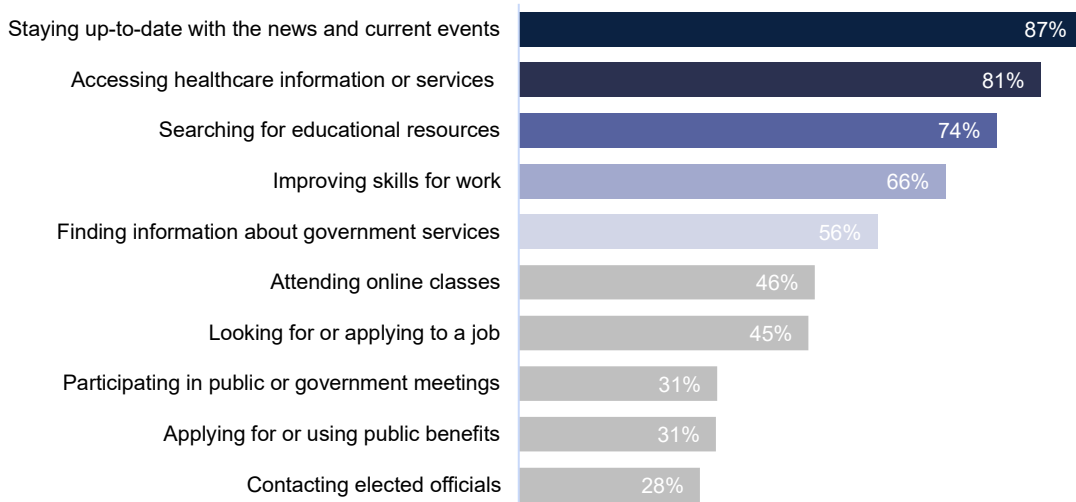
3.4.2.2 Digital Literacy: Using Online Services

Preliminary DRMT Survey findings regarding how respondents use the internet showed:

- Most survey respondents use the internet for accessing public resources for services such as news and current events, accessing health care, searching for educational resources, improving work skills and finding information about government services.
- Respondents who identify as individuals with limited English proficiency use the internet more frequently for educational resources, work skills, attending online classes and applying for jobs.
- Respondents who identify as aging individuals and individuals with disabilities use the internet more frequently for accessing health care information and services.

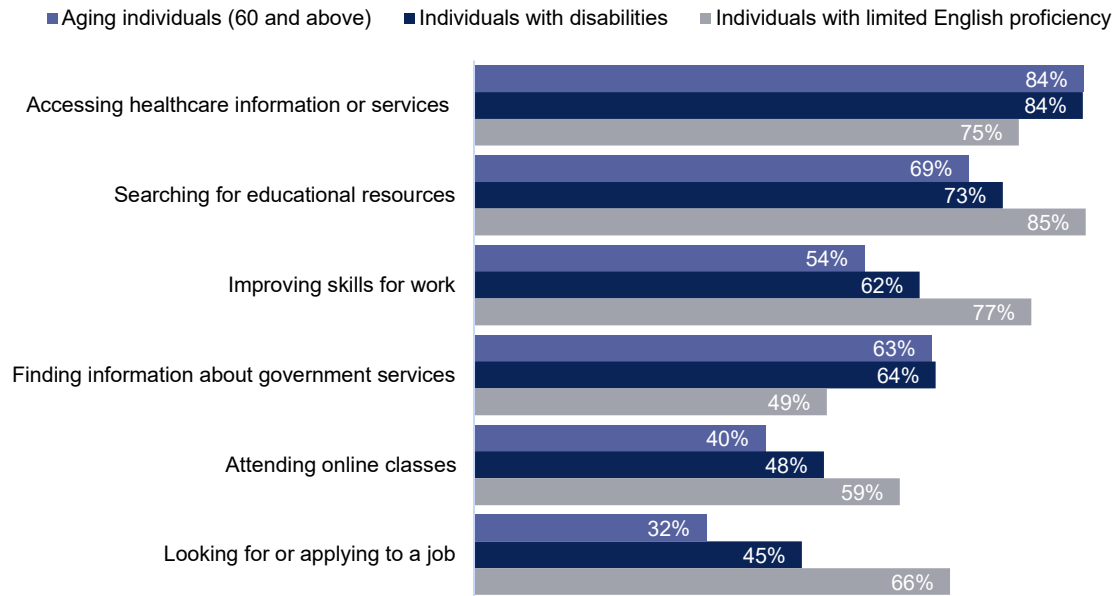
More than half of survey respondents use the internet to stay informed about new and current events, access health care, search for educational resources, improve work skills and find information about government services (**Exhibit 32**).

Exhibit 32: How frequently do you use the internet or go online for the following? (Sometimes or Often)



Respondents who identify as individuals with limited English proficiency reported more frequent use of the internet for educational resources, work skills, attending online classes and applying for jobs. Respondents who identify as aging individuals and individuals with disabilities use the internet more frequently for accessing health care information or services (**Exhibit 33**).

Exhibit 33: By Covered Population: How frequently do you use the internet or go online for the following? (Sometimes or Often)

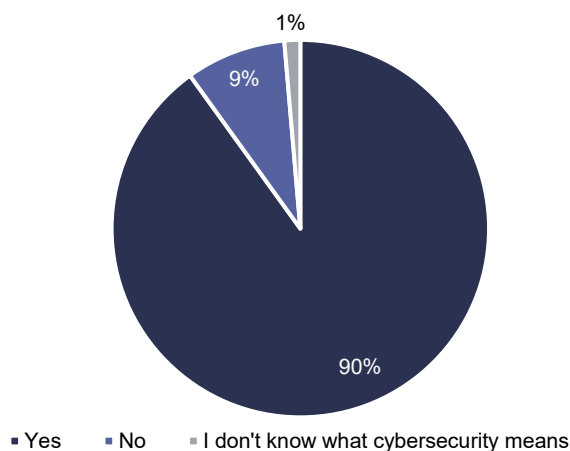


3.4.2.3 Digital Literacy: Privacy and Cybersecurity

Preliminary DRMT Survey findings regarding privacy and cybersecurity showed:

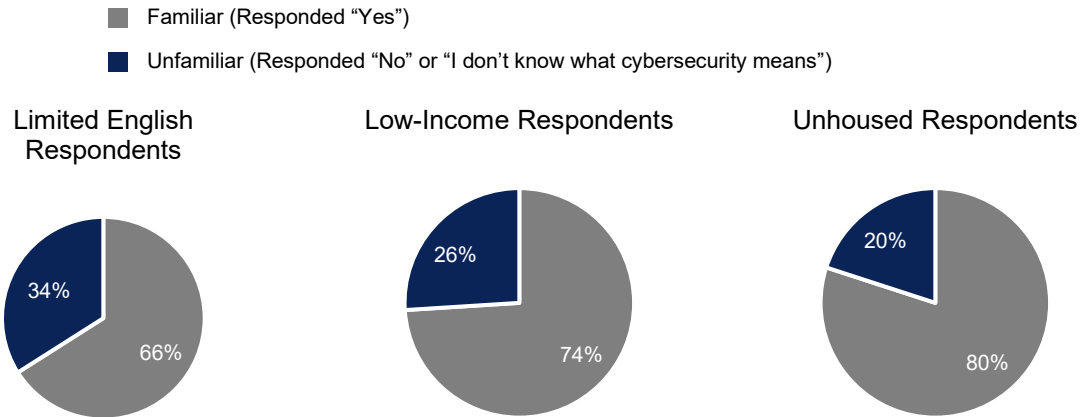
- Among respondents who use a desktop, laptop or tablet at least a few times a year, 90 percent are familiar with cybersecurity measures (**Exhibit 34**).
- Of the 10 percent of respondents who answered that they were unfamiliar with cybersecurity, the covered populations with highest rates of unfamiliarity included: those with limited English proficiency, those who are unhoused and those who are low-income (**Exhibit 35**).

Exhibit 34: Are you familiar with cybersecurity measures to prevent unauthorized access and damage to your devices?



Of the 10 percent of respondents who answered that they are unfamiliar with cybersecurity, the covered populations most likely to indicate a lack of familiarity with cybersecurity included those with limited English proficiency, those who are low-income and those who are unhoused (**Exhibit 35**).

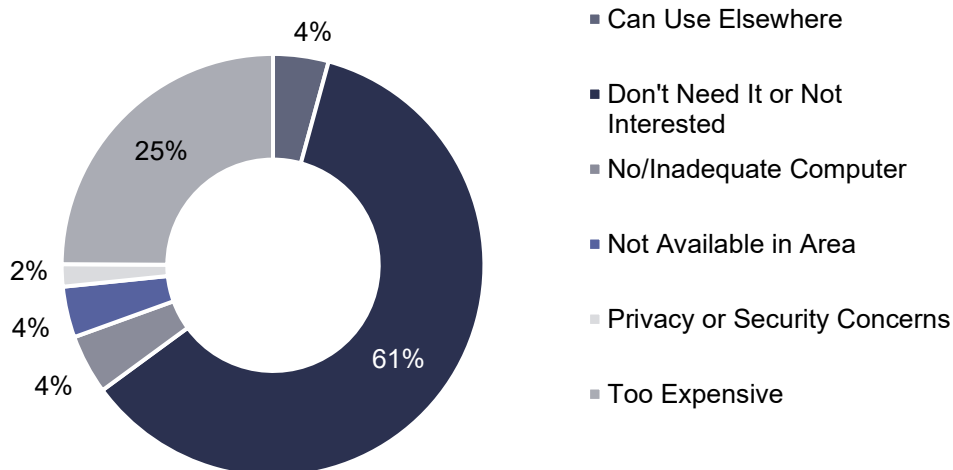
Exhibit 35: Familiarity with cybersecurity for populations with limited English, low income and unhoused



3.4.2.4 Household Broadband Subscriptions

Further hindering adoption is the lack of broadband subscriptions among households driven by a variety of reasons, but most of which indicate a lack of need or interest (**Exhibit 36**).

Exhibit 36: Reason for no internet at home (% households)^{6xiii}



Currently, the internet is not being utilized to its full potential for economic factors such as searching for a job and taking classes or job training online (**Exhibit 37**). While online resources exist to help people find jobs and gain new skills online, there is not widespread adoption of these opportunities across Texas.

⁶ NTIA Digital Nation Data Explorer, Data universe: noInternetAtHome, November 2021 data set

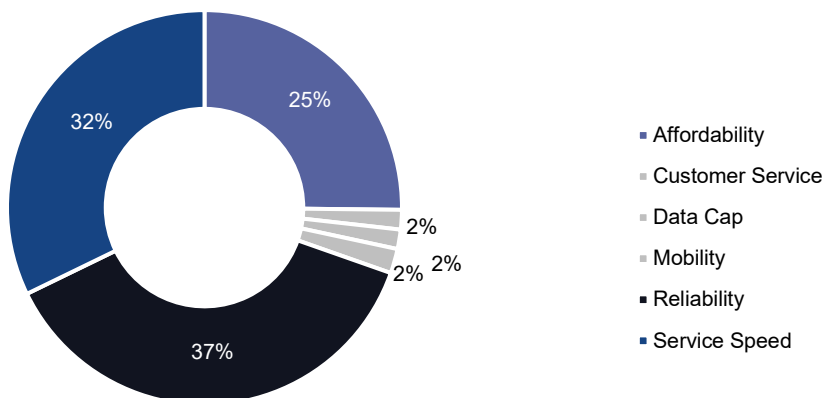
Exhibit 37: Uses of Internet by Adult User^{7xiii}



Respondents to an NTIA study are largely split in terms of what factors are most important for home internet service (**Exhibit 38**).

⁷ NTIA Digital Nation Data Explorer, Data universe: adultInternetUser, November 2021 data set

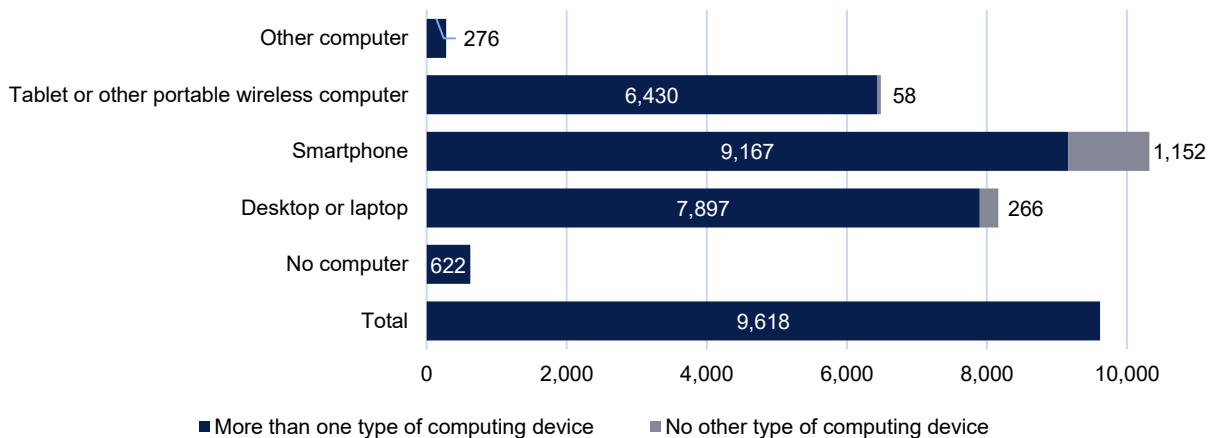
Exhibit 38: Most important factor for home internet service^{8xiii}



3.4.2.5 Devices Used to Connect

American Community Survey data help answer which devices Texans are using to connect to the internet, with many indicating they connect with multiple devices.

Exhibit 39: Access to devices (number of households, in thousands)^{Error! Bookmark not defined.}



More than 1.1 million Texas households only have access to a smartphone, as seen in **Exhibit 39**, sourced from the American Community Survey. While this device allows for connectivity to family and internet, it can prove insufficient as the only device. Desktop or laptop computers are more compatible with many online applications and offer improved accessibility for people with disabilities. **Exhibit 39** further demonstrates the importance of CAIs for device access, as there are 622,000 households without a

⁸ NTIA Digital Nation Data Explorer, Data universe: internetAtHome, July 2015 data set

computer. With affordability found as a roadblock to access across all research, it is essential that this is addressed as a major concern for Texans.

Preliminary DRMT Survey findings regarding consumer devices and technical support show:

- The smartphone is the prominent device that survey respondents use to connect to the internet (94%), followed by laptops (79%) and tablets (56%) (**Exhibit 40**).
- Just 7 percent of survey respondents *only* use a smartphone to connect to the internet. This share is much larger for households in poverty (20%) and individuals with limited English proficiency (19%) (**Exhibit 41**).
- When having trouble with computers or the internet, 18 percent of respondents have no one in their household or community who can help them (**Exhibit 42**).

Exhibit 40: Which of the following devices do you use to connect to the internet at home?

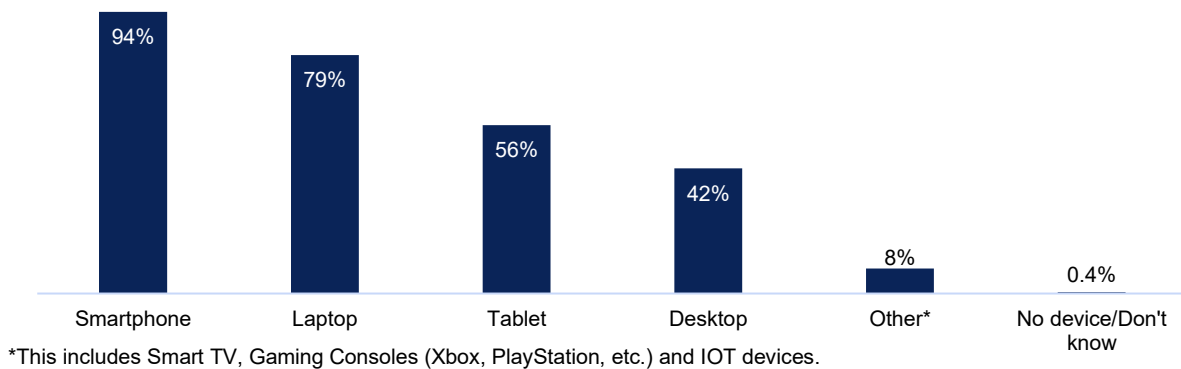
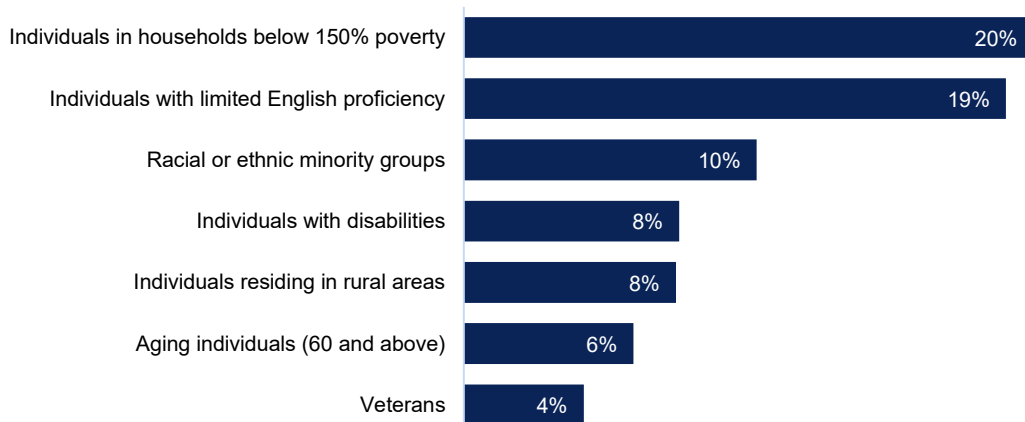
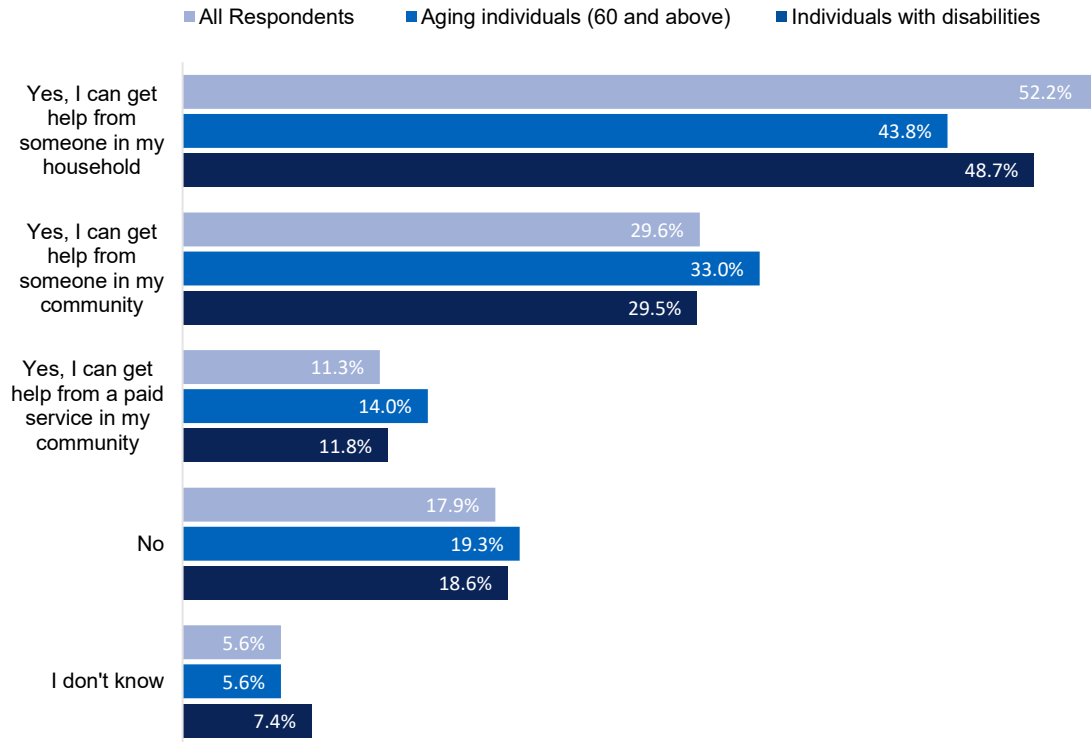


Exhibit 41: Which of the following devices do you use to connect to the internet at home? (Smartphone only)



Nearly 18 percent of total respondents who have trouble with computers or the internet do not have anyone in their household or community who can help them with technical support. This number is slightly higher for aging individuals and individuals with disabilities (**Exhibit 42**).

Exhibit 42: If you have trouble with computers or the internet, is there someone in your household or community who can help you?



3.4.3 Broadband Affordability

“Too Expensive” is the most common reason — 63 percent — selected in the Public Survey as to why respondents do not currently subscribe to home internet service (**Exhibit 52**).

Slightly more than 40 percent of respondents with home internet indicate their monthly internet bill exceeds \$100 (**Exhibit 57**), which is not affordable for many Texans. This Public Survey data highlight how the affordability gap is a necessary part of the digital divide discussion.

3.4.3.1 Broadband Access by Income

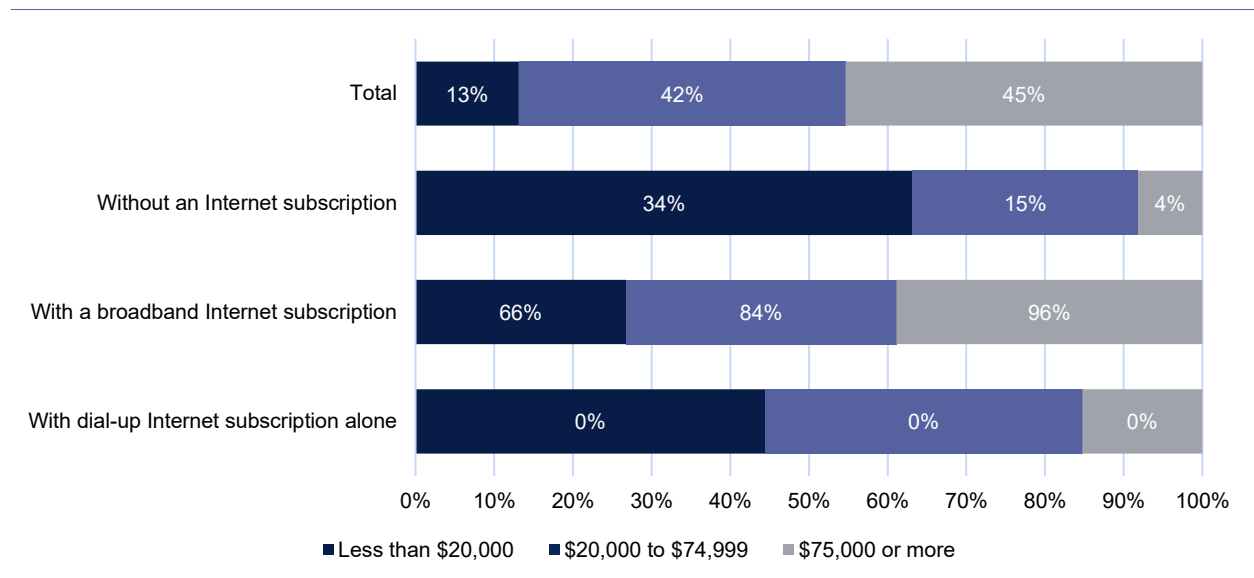
American Community Survey findings illustrate that the likelihood of having an internet subscription dramatically increases with salary (**Exhibit 43**): 4 percent of Texas households with a salary of \$75,000 or more are without an internet subscription, whereas 15 percent of Texas households with a salary ranging between \$20,000 and \$74,999 are without an internet subscription. This percentage more than

doubles for households where the salary is less than \$20,000, as 34 percent live without an internet subscription.

While the ACP offers the financial support to bridge this disparity, the inaccessibility of the program and suspicions of its authenticity hinder many from applying. This was raised throughout all platforms of the public engagement model. Regional Working Group members across the state expressed that the amount of information asked in the application causes many potential applicants to distrust the process, and this concern was echoed by a member of the Education Task Force.

Concerns over the ACP reinforce the importance of CAIs with digital navigators who are trusted sources able to communicate the validity of ACP to community members and help them apply. Public access points serve as promoters of ACP and digital literacy, not only increasing access to internet in specific locations but spearheading adoption in the community.

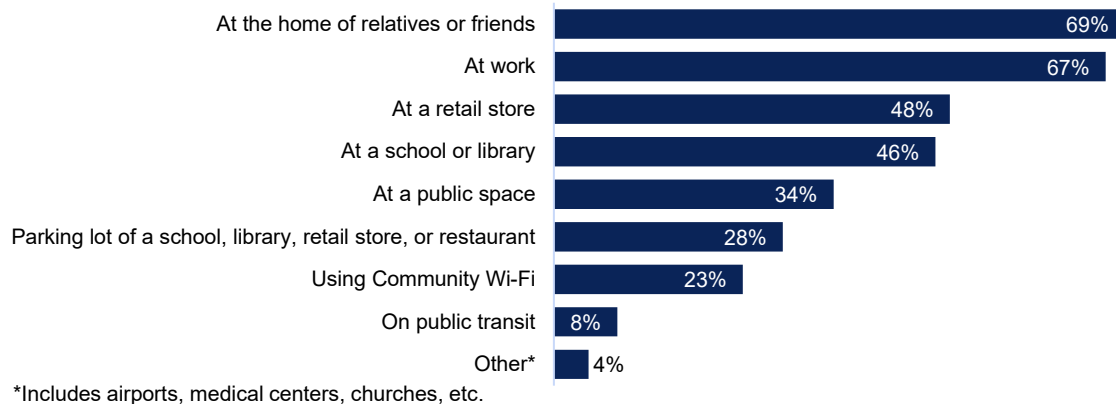
Exhibit 43: Access to broadband: By income group (number of households) Error! Bookmark not defined.



3.4.4 Broadband Access

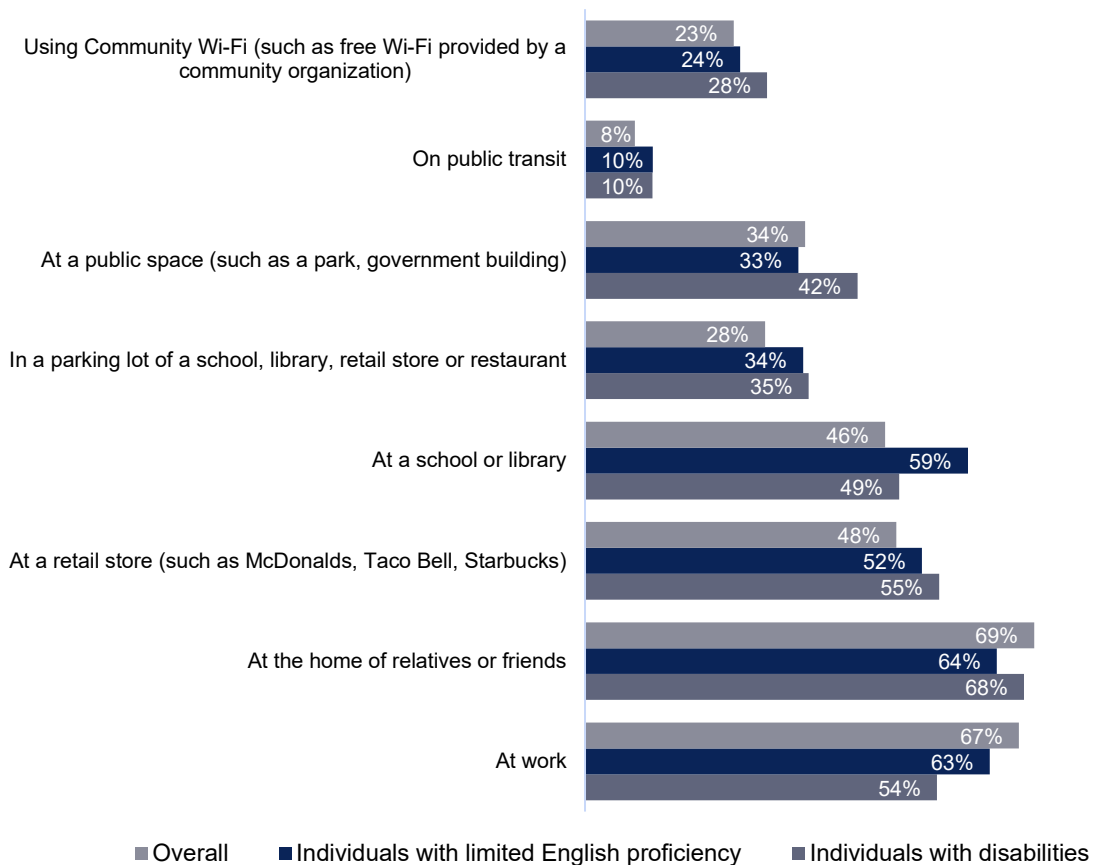
Among those who connect to the internet outside of using their own connection plan, Public Survey respondents primarily connect at the home of relatives and friends or at work (**Exhibit 44**).

Exhibit 44: Where else do you connect to the internet when not using your own connection plan?



While most respondents rely on familial networks for internet connectivity outside their home, Public Survey responses indicate that public resources such as schools, libraries, other public spaces and community Wi-Fi are particularly important for certain covered populations, including individuals with limited English proficiency and individuals with disabilities who use these resources at higher rates than the public (**Exhibit 45**).

Exhibit 45: Where else do you connect to the internet when not using your own connection plan?



4 Obstacles or Barriers

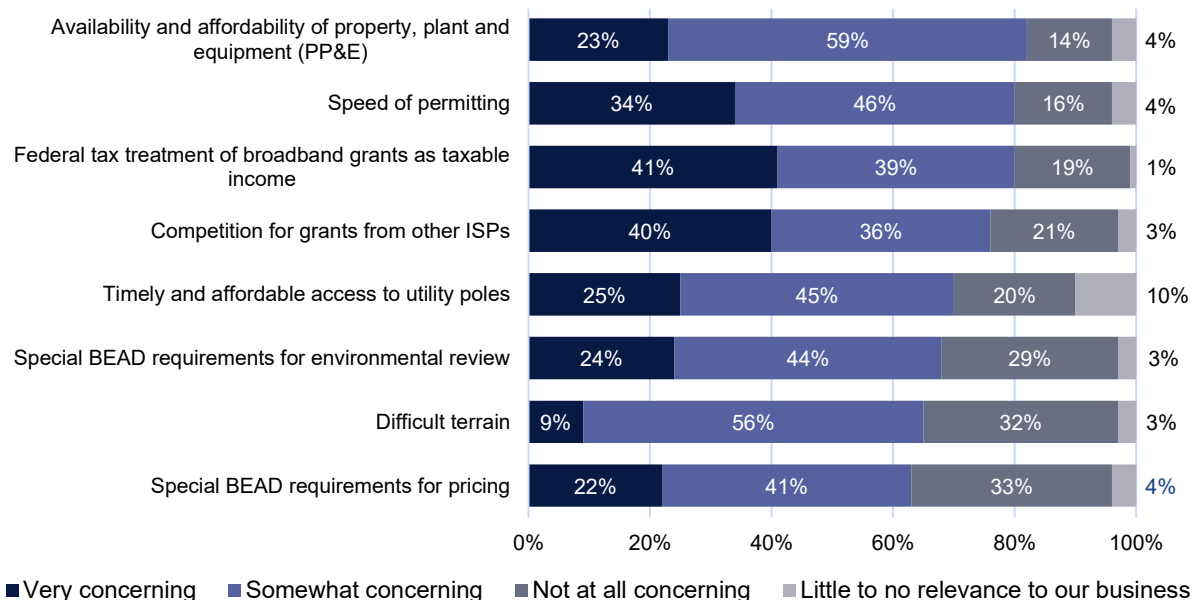
Like most states, Texas faces obstacles and barriers to closing the gaps described in the previous section. While many are related to the deployment of high-speed internet infrastructure, others focus more on affordability, digital literacy and access. Additionally, some barriers uniquely apply to organizations that provide such services.

4.1 Deployment Barriers

Broadband supply is overwhelmingly a private industry function in Texas. As such, the obstacles and barriers the state faces in achieving universal broadband access generally reflect the challenges faced by the broadband industry and are informed by an intensive engagement with industry. The BDO has regularly communicated with ISPs since its inception and increased engagement over the past few months for the Five-Year Action Plan development and BEAD Program planning process. The BDO has learned more about the industry’s challenges through the Industry Survey as well as the Business and Telecom Task Force. More about the logistics of stakeholder engagement is found in Section 5.1, while this section is focused on the insight these initiatives provided.

The graph below outlines a question from the Industry Survey that assessed the concern of respondents toward a variety of factors regarding BEAD Program applications. This highlights the barriers to deployment as it reflects apprehension toward themes discussed further in this section (**Exhibit 46**).

Exhibit 46: How concerning is each factor as you consider whether to apply for BEAD Program grants? If you have ruled out applying for BEAD Program grants, please indicate how concerning these factors were as you made your decision.



4.1.1 Commercial Sustainability

Throughout public engagement, the obstacles to commercial sustainability of potential BEAD Program funded networks have been a reoccurring point of discussion. The BEAD Program’s subsidies of capital expenditures (CapEx), the money an organization spends to buy, maintain or improve its fixed assets, can

be expected to induce the construction of broadband infrastructure in many areas where it would not otherwise have been built. There are no program subsidies, however, to support ongoing operation and maintenance expenses where customer revenues are insufficient to cover the costs. While waivers for matching funds are desirable, they can heighten the risk of commercial unsustainability by showing that a subgrantee ISP lacks either the means or the willingness to invest. Throughout the BEAD Program planning process, Initial Proposal drafting and application review, the BDO will consider whether projects are commercially sustainable on a long-term basis. These concerns are further reflected below as ISPs indicated cost and revenue as obstacles for deployment throughout the entirety of BEAD Program funding in their Industry Survey responses.

Voice of Texans

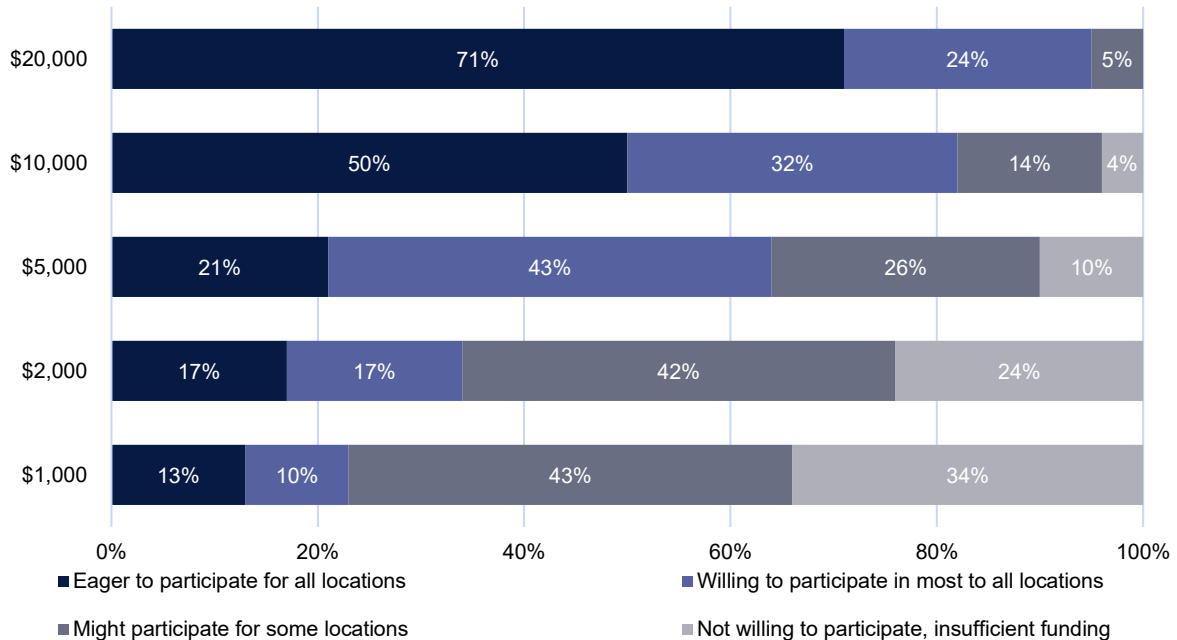
“A concern of the NOFO is that it doesn’t contemplate sustainability of the networks it is supporting. Should we contemplate sustainability? Build out is not going to confirm that people will subscribe, which would make the rural company want to have it higher cost.”

- Business & Telecom Task Force Member

4.1.1.1 Funding

The Industry Survey asked respondents how many of the contemplated locations they would still consider applying for at various levels of the subsidy per location offered. The results are shown below (**Exhibit 47**).

Exhibit 47: In terms of subsidy per location passed, how would your willingness to participate in the BEAD Program be affected, relative to all your areas of potential expansion, if funding level were roughly ...

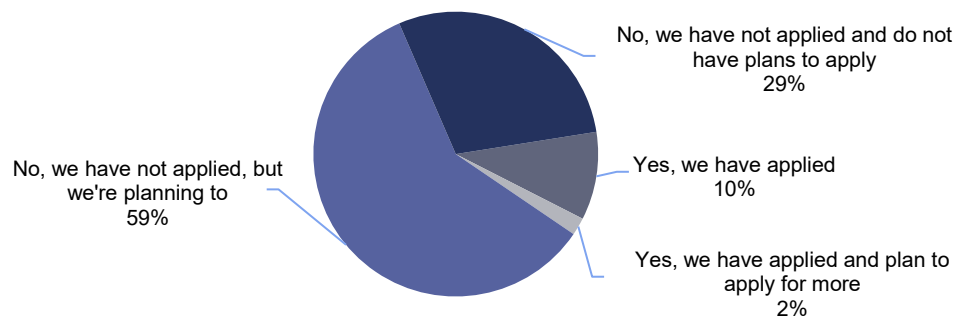


These data suggest ISPs are willing to deploy to most of the locations they are currently passing for subsidy amounts of \$20,000 or even \$10,000 per location. Willingness declines substantially if the subsidy is down to \$5,000 per location, and only a minority of locations would still be likely to get service if BEAD Program subsidies were as low as \$2,000 or \$1,000 per location. Texas is estimated to have up to 1 million locations in need of BEAD Program assistance after RDOF and BOOT Program

deployments are accounted for. With a \$3.3 billion budget, an average subsidy per location of roughly \$3,300 may be too low, such that about half of all total unserved and underserved locations as defined by the BEAD Program in Texas that are currently being contemplated by industry may be abandoned. Therefore, a critical obstacle to universal broadband access continues to be that available funding may not be sufficient to meet the need, even if the program is efficiently implemented with a view to maximizing the reach of federal dollars.

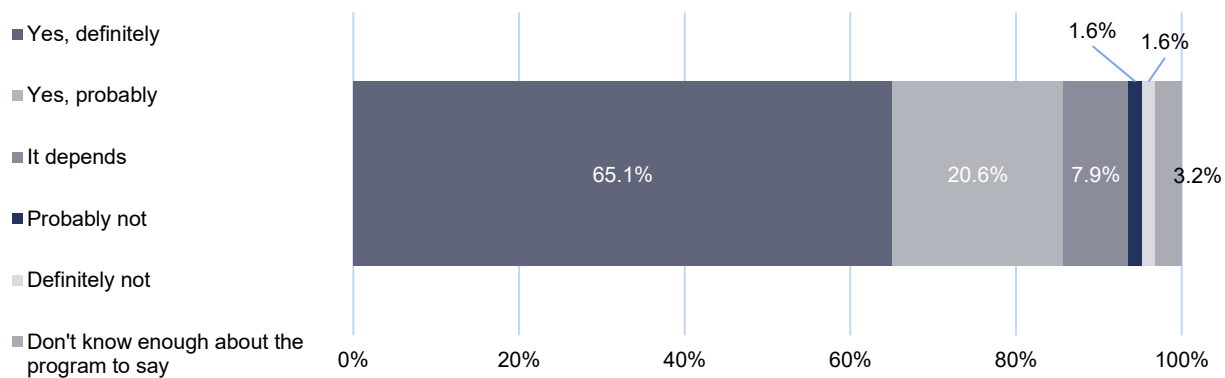
Patterns found through multiple Industry Survey answers confirm that funding shortfalls limit broadband providers' infrastructure buildout. For example, the vast majority of Texas ISPs that responded to the survey indicated they intended to apply for funding from the Texas BOOT Program, although only a fraction of those indicated they had, in fact, applied for BOOT Program funding already (**Exhibit 48**). This result reflects the status of ISPs after the first round of BOOT Program applications, as the survey was administered shortly after the initial application window closed. Because the BOOT Program awards grants in return for coverage expansions, this result demonstrates an eagerness on the part of the industry to access funding sources that can enable them to upgrade or expand their services. The BDO recognizes the survey respondents may self-select as ISPs interested in expansion and who are more likely to provide feedback on the administration of the BEAD Program, but the results can still help inform policy choices and program design.

Exhibit 48: Are you planning to apply, or have you applied already, for any funding from the Texas BDO under the BOOT Program?



Even more impressive is the interest in the upcoming BEAD Program that was indicated in the Industry Survey results. Fewer than 5 percent of respondents indicated they are “probably” or “definitely not” interested in applying for BEAD Program funding. The vast majority — 65 percent — indicated they are “definitely” interested in applying, and 21 percent indicated they are “probably” interested (**Exhibit 49**). Texas ISPs are eager to close the remaining broadband coverage gaps if they can secure the funding needed to do so.

Exhibit 49: Are you interested in applying to BDO for the upcoming BEAD Program grants to expand your coverage footprint?



4.1.1.2 Buildout

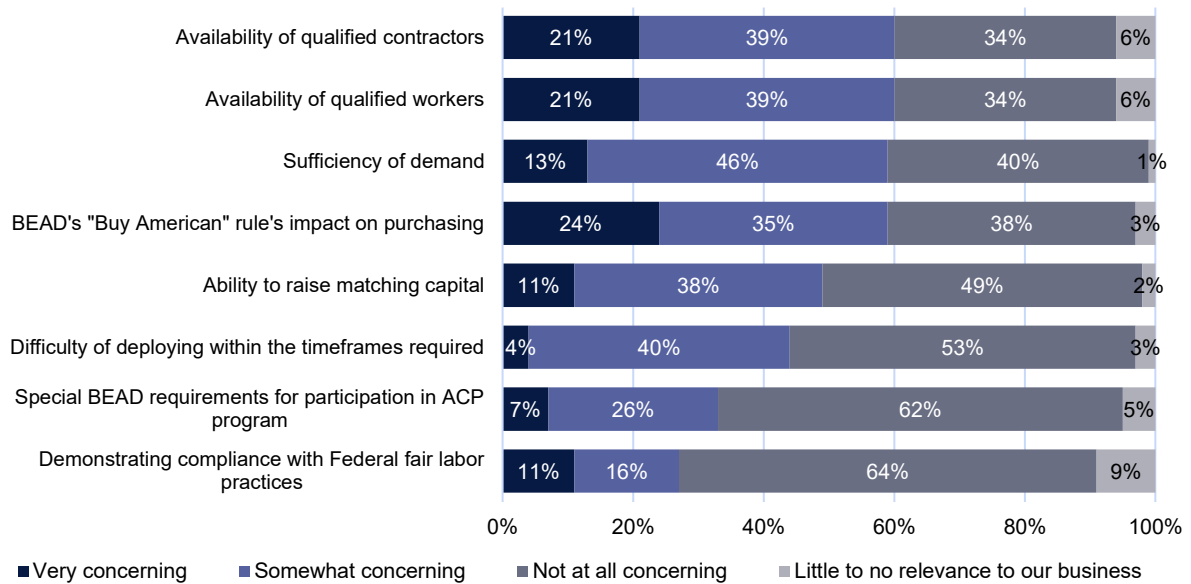
Regarding costs for the initial buildout, availability and affordability of property, plant and equipment are “very” concerning to 23 percent of respondents and “somewhat” concerning to 59 percent of respondents (**Exhibit 46**). For awarded projects to come to fruition, it is necessary for ISPs to overcome the initial hurdle of acquiring affordable equipment. Competition will be high for the needed materials, and the industry recognizes supply chain shortages pose potential roadblocks and delays for broadband deployment.

4.1.1.3 Long-Term Outlook

In the past, it typically has not been economical for providers to bring connectivity to unserved and underserved areas of Texas. Barriers such as cost of deployment, lack of customers and the difficulties in fiber implementation have historically made costs greater than revenue needed for commercial viability in many rural areas of Texas. A substantial majority of Industry Survey respondents reflect this sentiment as 59 percent are “very” or “somewhat” concerned about sufficiency of demand (**Exhibit 50**). This could be a barrier for a variety of reasons, and it was often expressed in public engagement that households with tight incomes choose to forgo internet when budget cuts are necessary. This especially holds true considering many households view mobile-only and smartphone-only lifestyles as a viable alternative to a home internet subscription. Additionally, in low population density areas, the scarcity of serviceable locations may result in insufficient demand to cover operation and maintenance costs, much less capital expenditure, even if subscribership prices are high.

Competition is another obstacle to demand as internet service options with less reliable technologies and at slower speeds are typically available even in areas that are unserved or underserved by BEAD Program standards, meaning new deployers will need to compete with pre-existing ISPs to get market share, even when offering better quality service.

Exhibit 50: How concerning is each factor as you consider whether to apply for BEAD Program grants? If you have ruled out applying for BEAD Program grants, please indicate how concerning these factors were as you made your decision.



4.1.2 Topography

Difficult terrain is a fundamental obstacle as it is identified by 56 percent of respondents of the Industry Survey as “somewhat” concerning (**Exhibit 46**). Texas has a diverse landscape with forests in East Texas, mountainous regions in West Texas and sandy soil along the coast. Consequently, there is not a “one-size-fits-all” technology that can adequately fill connectivity gaps. The Industry Survey suggests that while terrain is a difficult obstacle, it is not insurmountable as few (9%) were “very” concerned. This is likely due to the ISPs viewing alternate technologies or increased spending as solutions to topographic obstacles, and the BDO understands that overcoming this barrier may involve sacrifice of either fiber priority or price in select areas of the state.

4.1.3 Incomplete or Inaccurate Availability Data

Some ISPs raised the issue that the FCC maps, though improved in granularity, are still based on self-reported coverage data from industry. Consequently, some areas may not be served by the BEAD Program because of overstatement of coverage by ISPs. This is an important barrier as universal broadband access cannot be achieved if there are unserved Texans appearing served on FCC maps due to misreporting by ISPs. The BEAD Program challenge process will seek to diminish this obstacle, but limitations make this an imperfect solution. Fundamentally, issues of methodology and resources for rigorously verifying the quality of coverage independently of provider self-reporting is a problem that is yet to be solved. While the BEAD Program challenge process will hopefully attract significant participation and have a substantial impact, it is unreasonable to expect this rapid process powered by volunteer labor to serve as the sole solution.

4.1.4 Workforce and Labor

Labor shortages can be another pervasive barrier to deployment. This is reflected in the Industry Survey as availability of qualified contractors and availability of qualified workers are “very” or “somewhat” concerning to 60 percent of respondents (**Exhibit 50**). This barrier has been voiced throughout public engagement as many want broadband infrastructure jobs to prioritize local hires but recognize there is a skills gap in the workforce to carry out deployment successfully.

Additional concern was expressed in multiple task forces regarding tight competition in a competitive labor market where the same skills may be applied elsewhere for more pay. The industry structure is such that ISPs depend on contractor and subcontractor crews to build out networks: They must compete not only with other ISPs but with much of the construction industry and even other industries. For example, a member of the Business and Telecom Task Force shared a story of an acquaintance leaving his job building out networks to work at a fast-food chain because the pay was better and offered benefits. This competition for workforce is expected to be amplified between states as well, through the simultaneous BEAD Program fund disbursement and concurrent broadband infrastructure buildout across the country.

4.1.5 Permitting and Regulatory

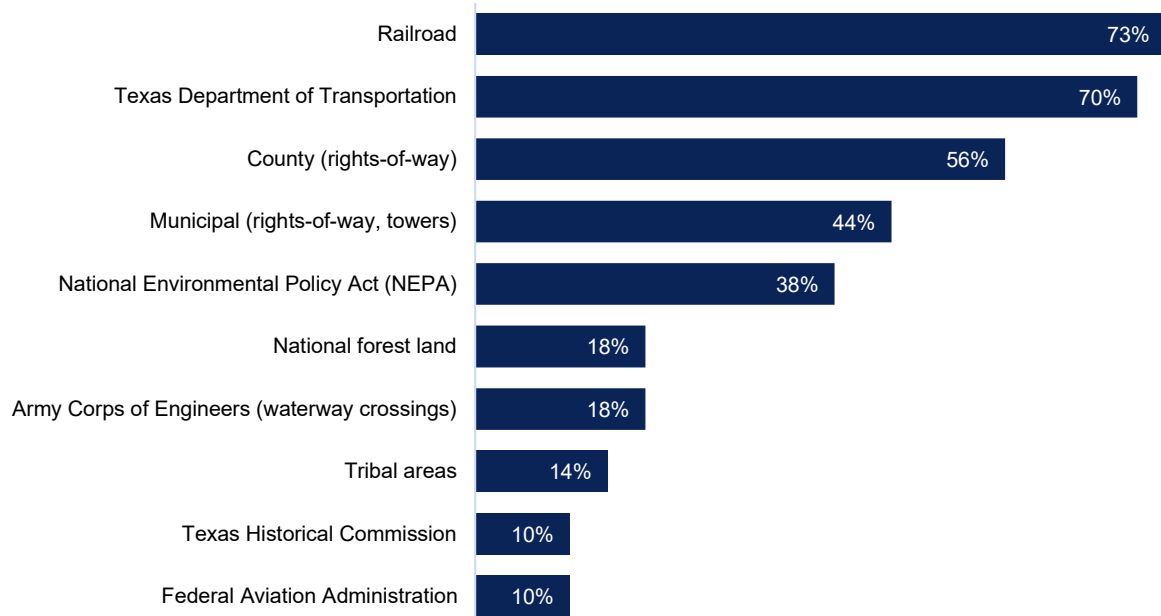
Permitting requirements are necessary because broadband deployment is a physical process that affects land, property rights and property values, but often the resulting delays in failures of broadband deployment are not in the public interest or in the interest of residents of affected areas. However, ISP responses to the Industry Survey expressed concern with railroad (73%) and TxDOT permitting (70%), followed by county (56%) and municipal (44%) rights-of-way and towers (**Exhibit 51**). Other types of permitting appear to be easier to comply with or narrower in their impact. Mitigating these barriers is desirable, but the rightsholders and regulators involved are not under authority of the BDO. The BDO may be able to play a convening role and facilitate prompt voluntary mitigation by other agencies through streamlining systems and transparency, but the permitting policy status quo may prove to be an obstacle for efficient BEAD Program implementation.

Voice of Texans

“What is the actual workforce needed? How do communities prepare and grow their own workforce to fulfill what’s needed to build out the network to folks who could benefit from that sort of upskilling?”

- Economic and Workforce Development Task Force Member

Exhibit 51: What types of permits are particularly concerning to you?



Permitting is highlighted as a concern as 80 percent of Industry Survey respondents indicated speed of permitting as either “very concerning” or “somewhat concerning.” Further regulatory concerns are indicated as areas of priority as timely and affordable access to utility poles, special BEAD Program requirements for environmental and national historical preservation, and special guidelines for pricing are also high on the list, with large majorities “very” or “somewhat” concerned (**Exhibit 46**). All of these are policy-driven barriers to deployment, which government could mitigate in principle, although may require changes to state laws and administrative rules that are outside the control of the BDO.

These policy-driven barriers are outlined in Texas statute that imposes limitations on municipalities regarding broadband. Though there are exceptions for some communities, Texas Utilities Code Section 54.201 largely restricts municipalities from offering certain telecommunication services directly to the general public or via a private telecom company. Texas Utilities Code Subchapter E may also serve as a barrier as it prevents municipalities from receiving certificates of convenience and necessity, operating authority or service provider operating authority from the Public Utilities Commission. Texas Local Government Code Chapter 284 imposes requirements and restrictions to municipalities regarding rights-of-way. In some scenarios, these policies can limit broadband expansion for Texas communities and add barriers that can be difficult for smaller localities to navigate due to capacity constraints.

4.1.5.1 Pole Attachment Governance

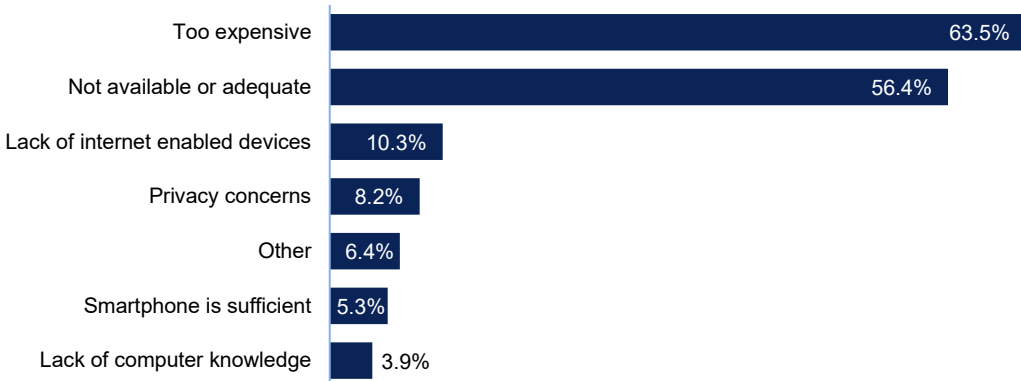
Some ISPs voiced concerns that the process of attaching to utility poles would cause cost overruns and delays. A recommendation was offered that Texas should ensure the BEAD Program subgrantees get pole access on just, reasonable and non-discriminatory terms; provide a complaint process with adjudication occurring within 90 days of receipt; impose timelines on pole owners to process applications, provide make-ready estimates and complete make-ready tasks; and make sure that where pole replacement is necessary to accommodate new attachments, the costs are shared between new attachments and pole owners. A spokesman for the rural electric cooperatives affirmed the current process is fair and effective.

4.2 Non-Deployment Barriers

Respondents of the Public Survey overwhelmingly identified cost and availability as prevailing barriers to broadband adoption. Enrollment in and awareness of discounted internet service offerings, or subsidized programs such as the ACP, is low among respondents who would be eligible for such programs. Additional findings include:

- Among those who cannot access the internet from home, survey respondents selected cost and lack of availability as the most prevalent reasons for not having a home internet connection (**Exhibit 52**).
- Nearly one-third of respondents who identify as low-income pay \$100+ on home internet each month (**Exhibit 57**).
- 60 percent of respondents who identify as low-income are not enrolled in a subsidized internet service program (**Exhibit 59**).

Exhibit 52: Which of the following explains why you do not currently subscribe to home internet services?



4.2.1 Barriers that Impact Organizations

The DRMT Survey responses brought several key themes to light, including a general lack of broadband availability (particularly in rural or less dense areas with higher infrastructure costs), lack of training and support due to high labor costs, lack of awareness about existing programs offered and increased program costs with little to no accompanying increase in funding. Common concerns are highlighted below.

Exhibit 53: Common Barriers Identified Among Organizations



Respondent organizations who selected “other” largely restated the barriers identified within the available answer choices, including lack of funding availability and lack of engagement in communities. Other notable barriers discussed include a lack of space available for equipment, low attendance within the community and increasing programmatic costs (**Exhibit 53**).

4.2.1.1 Capacity

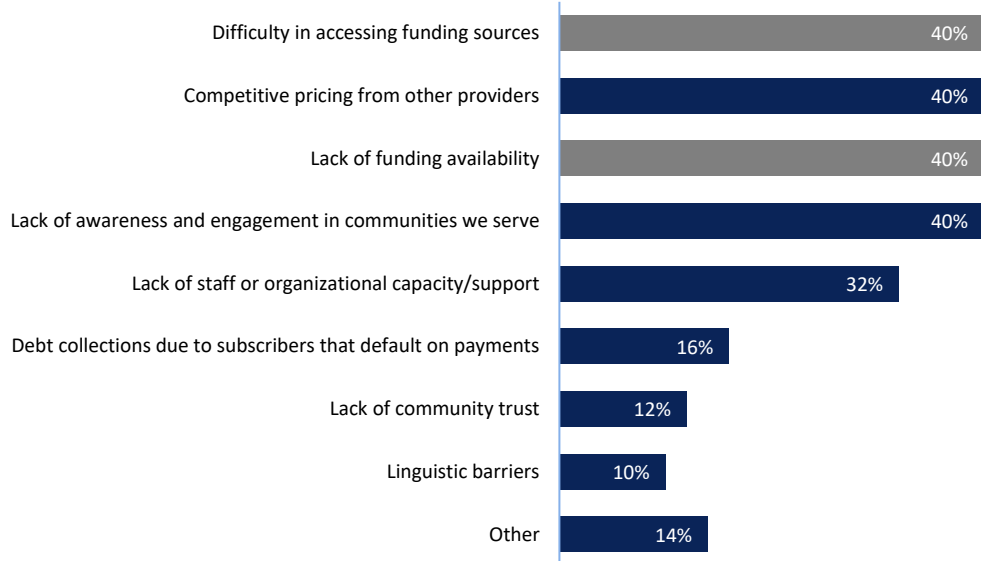
In general, ISPs in Texas understand the severity of the digital divide but do not have the capacity to advance digital opportunity objectives due to resource constraints and the need to cover costs of expansion while earning an adequate return on investment. When asked about the barriers ISPs face to increasing the impact of their broadband access and affordability programs, for example, two of the top four answers on the Industry Survey are “difficulty in accessing funding sources” and “lack of funding availability” (**Exhibit 54**).

Voice of Texans

“ISPs should support organizations to teach technical skills, as we don’t have the capacity to teach at this time.”

- ISP Representative from Business & Telecom Task Force

Exhibit 54: Which of the following are barriers to increasing the impact of your broadband access and affordability program(s)?



This is a shared barrier across organization types as lack of funding and capacity emerged as the most significant barriers organizations face when seeking to deliver digital resources and training to communities (**Exhibit 53**). A notable theme from respondents relates to the rapid changes in technology outpacing their staff’s capacity.

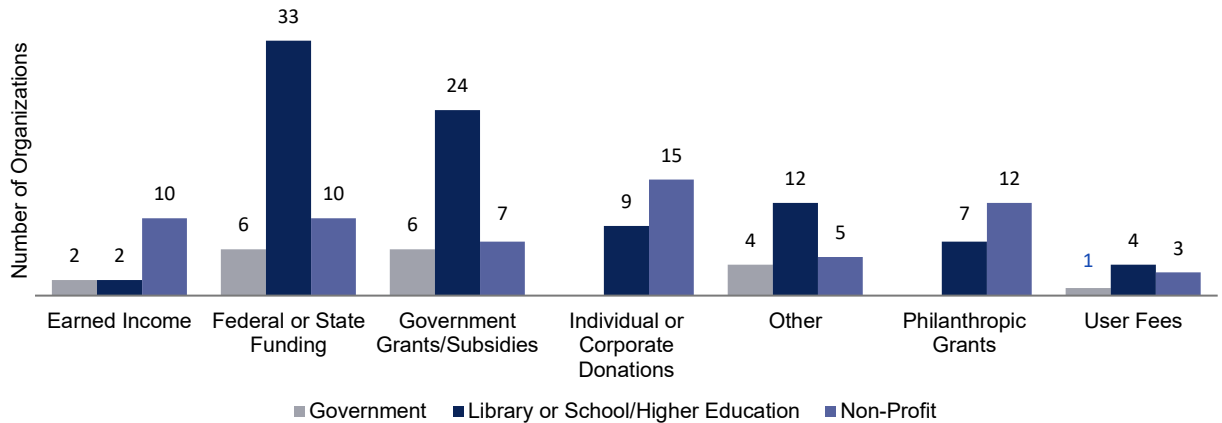
Many organizations surveyed through the DRTM reported receiving public and philanthropic funding for their programs. Organizations such as schools and libraries regularly apply to various funding sources and receive public and private funding for their broadband-related programs. Approximately 20 percent of DRMT Survey respondents historically have not and do not currently receive funding from government sources. This is due to several factors, including lack of eligibility and high demand relative to available funding (particularly for device access programs). Notably, while funding for digital skills and computer device access may be available to a large majority of organizations, the common sentiment is that the amounts available are not sufficient to meet demand. Organizations universally identified lack of funding availability, lack of organizational capacity and difficulty in accessing funding sources as barriers that impact their ability to increase their digital opportunity programming (**Exhibit 53**).

Voice of Texans

“The local community college just dropped their computer tech program for an associate degree. They said things are changing too rapidly to teach effectively. Jobs have to offer specific training for their employees.”

– DRMT Survey Respondent

Exhibit 55: Sources of Funding for Grant Programs

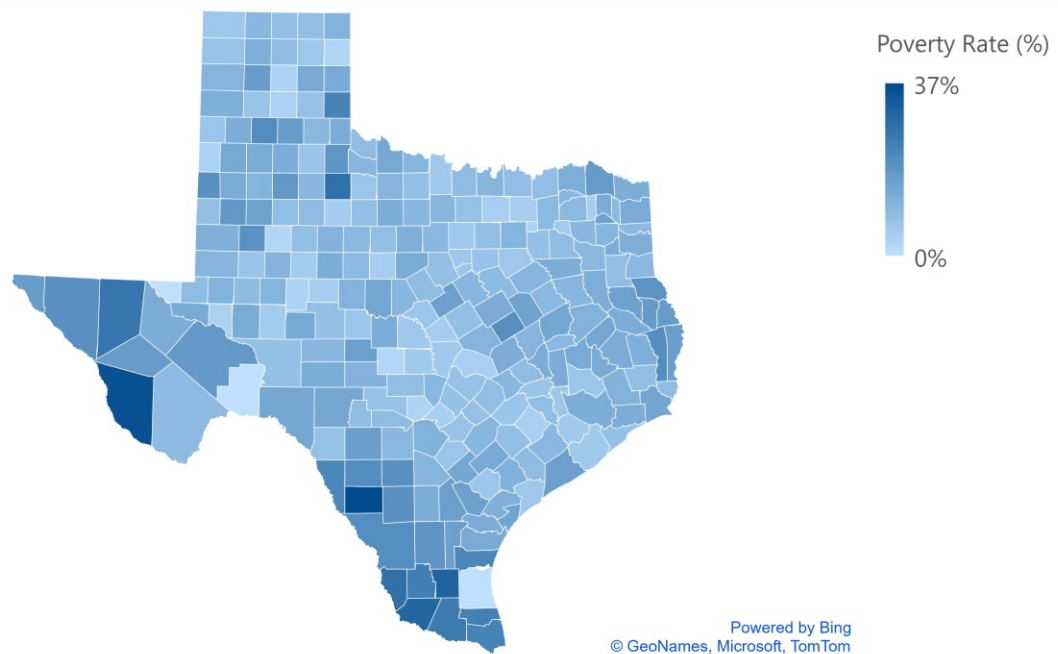


Government grants and funding are the most common sources of funds for libraries and government entities, while individual, corporate and philanthropic grants and donations are the most common sources for nonprofits (**Exhibit 55**).

4.2.2 Affordability

Poverty rates differ by region and particularly in rural areas of Texas, as reflected by the heat map below (**Exhibit 56**). As such, affordability is understood as a need for Texans across the state. This is exacerbated by lack of access to broadband, limiting options to participate in the digital economy to areas needing economic growth.

Exhibit 56: Poverty Rate by County



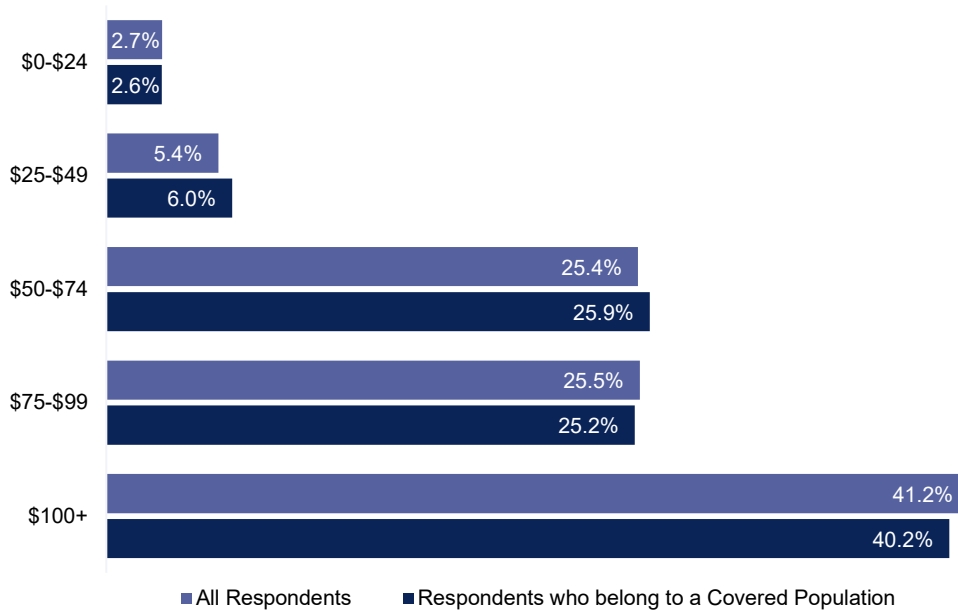
Data from the Public Survey and input from the public engagement support the fact that affordability is a barrier to universal internet access. A member of the Essential Services Task Force shared the depth of this concern for their rural East Texas constituents who expressed being on a fixed budget and unable to afford anything else, as well as skepticism toward affordability programs (for example, people receive a free device and training for using it, but then may not be able to *afford* to use it). Further, data reflect that more than 90 percent of total respondents and more than 90 percent of respondents who identified as belonging to a covered population pay \$50 or more a month for their home internet subscription (**Exhibit 57**).

Voice of Texans

“Affordability is a main barrier to increasing broadband adoption in Austin. There is also lack of awareness of programs and services, and we are also seeing some element of lack of community trust.”

– DRMT Survey Respondent

Exhibit 57: Approximately how much is your total monthly bill for home internet?



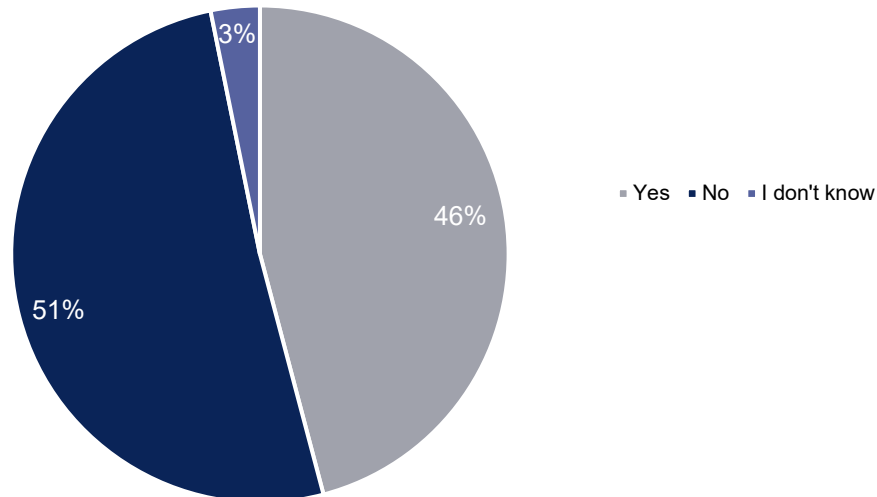
The ACP targets the affordability barrier by providing discounted internet services to low-income Texans, but the program’s success is limited due to lack of public awareness. The majority of low-income respondents indicated they have not heard of the ACP (**Exhibit 58**), demonstrating the need for increased outreach to eligible populations to promote awareness of the ACP and other subsidized internet service programs.

Voice of Texans

“ACP needs to be more accessible. There are many steps to sign up or it can be hidden on the website. The low-cost option can’t be so difficult that people can’t find it or sign up.”

– SWG Member

Exhibit 58: Have you heard of ACP? (Low-income respondents)



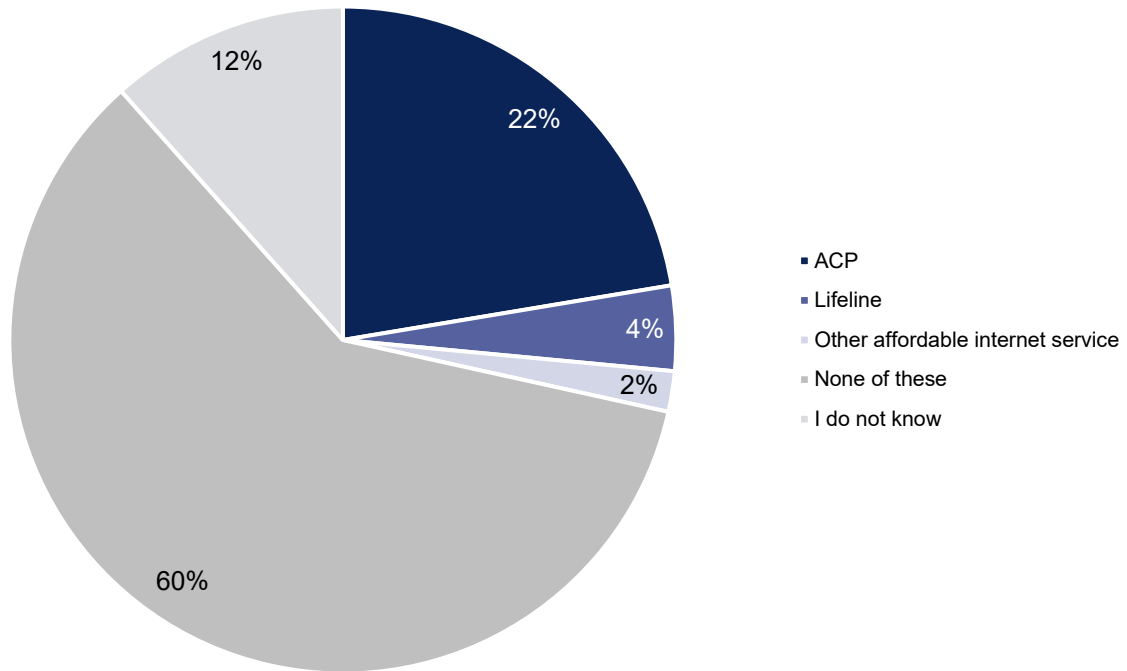
Voice of Texans

“One of the obstacles standing in the way of adoption or [ACP] enrollment is lack of information from trusted sources. Another is the navigation of the enrollment process, especially for someone with low literacy or a lack of digital skills. Also, some people mistrust the program because it asks for Personally Identifiable Information and they think it might be a scam.”

– Education Task Force Member

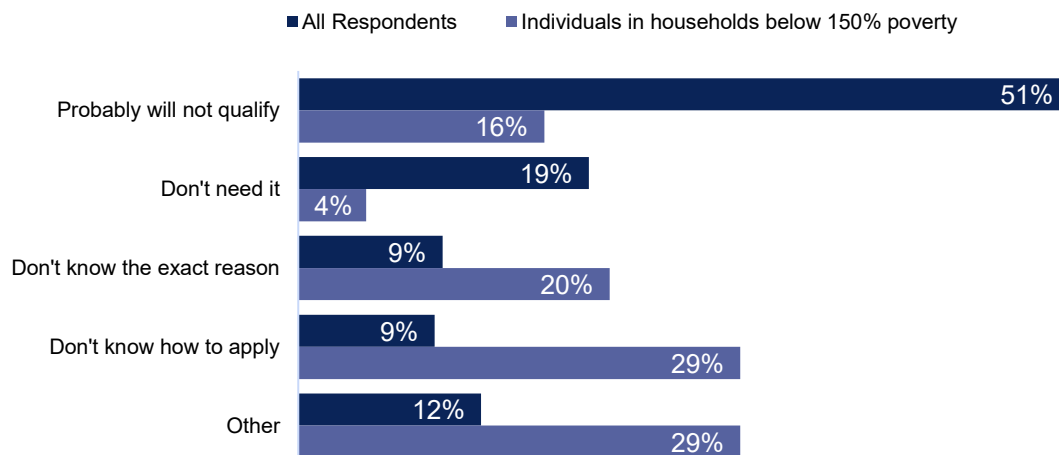
In addition to awareness as a barrier, many Texans have not signed up for the ACP for a variety of reasons, including application difficulty, authenticity concerns and privacy concerns. Of the low-income survey respondents who had heard of ACP, 60 percent indicated they are not enrolled in a subsidized internet service program of any kind (**Exhibit 59**). According to the latest nationwide ACP enrollment data, 43 percent^{xiv} of eligible households in Texas are not enrolled in the program.

Exhibit 59: Are you currently enrolled in any of these discounted internet service programs?



The Public Survey also sought out an answer to why eligible residents are not enrolled in ACP; almost half of survey respondents believe they probably will not qualify. For individuals living at or below the poverty level and who are ACP-eligible, the reason for not enrolling is lack of awareness about ACP and its application process (Exhibit 60).

Exhibit 60: Why are you not currently enrolled in ACP?



4.2.3 Digital Literacy

Digital literacy is a barrier to overcoming the digital divide because, even when broadband is deployed, all Texans will need to have the skills necessary to utilize devices. In the Economic and Workforce Development Task Force, the South Dallas Employment Project spoke to this barrier, stating there is a gap between digital literacy trainings and the constituents who need these resources, as an element of digital literacy often is required to utilize the programs. As such, the BDO recognizes that a successful approach to digital literacy must go beyond creating the resources by addressing outreach to ensure the programs are accessible to everyone.

4.2.4 Access

Lacking access is a fundamental barrier to universal coverage. The gaps in public access points and barriers to reach public internet sources are both obstacles felt across the state of Texas through different terrain and demographics. The reasons behind the lack of access are widespread and can include elements such as needing transportation to reach institutions with internet, topographic hurdles including the pines of East Texas blocking satellite and ISPs simply not offering internet to areas with low populations. Access can also be limited by areas

only having one ISP as an option, which limits competition and allows the ISP to charge higher prices to their customers. Examples such as these and many others were voiced throughout public engagement, where Texans expressed concern in public meetings and organizations spoke on behalf of the covered populations disproportionately impacted by lack of access in task forces and working groups.

Voice of Texans

“Our communities’ lack of access means that people have to find access elsewhere, which can be an inconvenience and/or impossible if they are older and lack transportation. The online resources that most of us have come to rely on aren’t available to those who aren’t connected.”

– Civic & Social Engagement Task Force Member

4.2.5 Letter of Credit

Providers in Texas, particularly owners of smaller ISPs, and advocates for rural areas of the state have indicated concern with federal requirements that subrecipients provide a letter of credit. The BDO received several questions from potential applicants to its BOOT Program about whether a program applicant needed to obtain a letter of credit from a bank. Though the BOOT Program did not require applicants to provide such a letter, prior federal programs have required letters of credit and potential applicants expressed their concerns. Specifically, Texas ISPs noted that banks will charge applicants a fee, typically 2 percent to 5 percent of the letter of credit amount annually, which could create an unintended barrier by potentially adding hundreds of thousands of dollars to the cost of a network build depending on the total cost of the project.

The BEAD Program NOFO clearly states “prospective subgrantees shall be required to submit a letter from a bank that meets eligibility requirements consistent with those set forth in 47 C.F.R. § 54.804(c)(2) committing to issue an irrevocable standby letter of credit, in the required form, to the prospective subgrantee.” NTIA has stated that the requirement, along with a 25 percent match, is intended to protect the federal investment. Prior federal programs focused on expanding internet access with fewer safeguards have fallen short, and a letter of credit is intended to prevent that risk happening. Various stakeholders have expressed concern that this requirement will disenfranchise rural and small providers

from participating in the BEAD Program, potentially preventing historically disadvantaged communities from being able to access the federal money.

As the BDO continues to engage with stakeholders over the course of planning and developing the credentials it needs to access the BEAD Program funds, it will explore possible alternatives that can safeguard taxpayer dollars while ensuring a greater pool of providers can participate in the BEAD Program, to include engaging with NTIA for the purposes of exploring what those alternatives may be and ensure fairness among providers, a core tenet of the BEAD Program, is not lost.

4.2.6 Matching Funds

As stated in the prior section, BEAD Program rules call for network operators seeking BEAD Program funding to use other funding sources to cover at least 25 percent of project costs, except in the highest cost areas. States even have the option to increase that minimum. Applicants can use a combination of cash and in-kind contributions to meet matching fund requirements. According to BEAD Program rules, in-kind contributions can include donations of property, goods or services that benefit the project; examples might include volunteer services, equipment, supplies, rights-of-way access, pole attachments, conduits and easements. Funds from four federal programs are allowed, including the Families First Coronavirus Response Act, the CARES Act, the Consolidated Appropriations Act of 2021 and the American Rescue Plan Act of 2021 (ARPA).

While the purpose of the match is intended to protect the federal investment and incorporate accountability into the project, network operators and smaller communities have expressed concern with the requirement and its complexity. Smaller firms have expressed concern that they may not have the capital on hand and are concerned they may be penalized by pursuing other federal funds as the program’s rules require states to incentivize matching funds to be directly funded by entities with the financial wherewithal to make such contributions. The worry is that while larger, publicly held companies can cover matching funds through a typical debt financing structure, smaller firms are left scrambling. A member of the Business and Telecom Task Force echoed this concern, stating that while smaller ISPs may not have the cashflow needed for the match requirement, their local insights add value when building and maintaining the networks. It is hopeful that some counties may still have funds available that were awarded to them through the state and local fiscal recovery fund created by ARPA; however, many counties have obligated those funds to more immediate infrastructure needs such as roads, drainage and jails.

Voice of Texans

“The match requirement is the deal killer from keeping the small regional providers from participating in any NTIA program.”

– Business and Telecom Task Force Member

The 88th Texas Legislature considered these concerns surrounding the matching funds requirement when it passed HB 9, creating the Broadband Infrastructure Fund. Totalling \$1.5 billion in state revenue, the new fund will provide significant resources to the state of Texas for expanding broadband, including the ability to use funds to cover the matching requirement for the BEAD Program, specifically for entities that need it most. Texans will vote on the final approval of the funds in November 2023.

4.2.7 Taxable Income

Corporate recipients of federal broadband funding, particularly from ARPA and IJJA, could be required to pay up to 21 percent of the funds back to the federal government. That is because these funds would be

considered “gross income” and subject to federal corporate income tax. Prompt action by the Internal Revenue Service would resolve the issue; however, statutory changes adopted as part of the 2017 Tax Cuts and Jobs Act would make reversal of that taxation at the federal level difficult if not impossible. ISP Survey responses mirror this barrier as 41 percent of respondents indicated the federal tax treatment of broadband grants as taxable income is “very concerning,” while 39 percent are “somewhat concerned” (**Exhibit 46**).

Taxation creates another significant barrier to network operators who need to consider these unavoidable costs to their project budgets. If federal programs like the BEAD Program are designed to incentivize expansion and buildouts, adding additional costs goes against that principle. To remove barriers and further encourage broadband deployment in the state, the 88th Texas Legislature passed SB 1243, which exempts IJJA-related broadband revenue from the state’s franchise tax calculation. This would allow operators to dedicate more funding to their projects, such as paying competitive wages and ensuring quality work.

5 Implementation Plan

This section describes how the BDO intends to implement the BEAD Program to fulfill the vision and objectives outlined in Section 2. The plan considers and incorporates the existing programs, partnerships, assets and needs assessment provided in Section 3 as well as the analysis of obstacles and barriers in Section 4. The plan includes:

- Overview of the stakeholder engagement process.
- Outline of program priorities, planned activities and key execution strategies.
- Timeline and cost estimates for achieving universal service.
- Analysis of other efforts that may complement, be enabled by or overlap with proposed BEAD Program projects.
- Anticipated needs for ongoing technical assistance from NTIA.

5.1 Stakeholder Engagement Process

The BDO began executing a robust public engagement campaign specific to the BEAD Program in April 2023. The public engagement model was developed to be an inclusive network, varied by geography, outcome areas, covered populations and other cross sections of broadband interests. This has allowed the BDO to reach individuals and communities across the state, especially those who may be most impacted by the digital divide. The network has opened channels to collect stakeholder input to inform the development of this Five-Year Action Plan and was likewise coordinated and conducted in alignment with the needs of the State Digital Equity Planning Grant Program (SDEPG), also administered by NTIA, which will be called the Texas Digital Opportunity Plan (TDOP). This includes consultation and collaboration with the federally recognized Tribes of Texas.

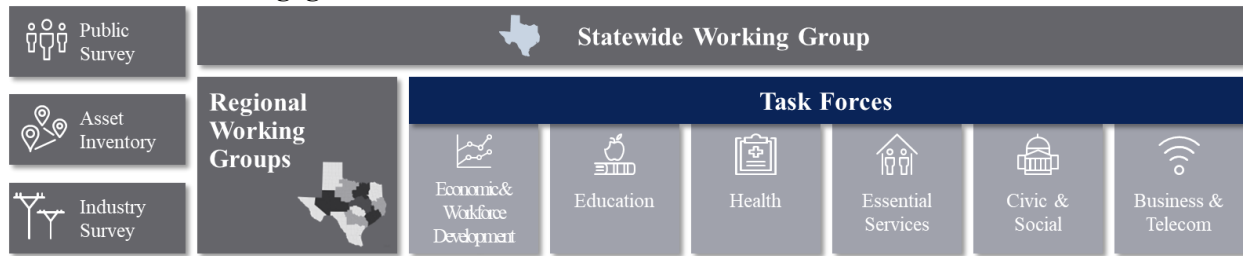
“Access to reliable, high-speed internet as a means of advancing education, training, employment opportunities, health care and delivery of essential services is critical to the future of our state. But we know that we can’t do this without partners in the regions and the communities that need this service the most. Their input, passion and local knowledge will help us ensure the Five Year Action Plan establishes a clear roadmap for expanding access to reliable, affordable high-speed internet to all Texans.”

— Comptroller Glenn Hegar

5.1.1 Public Engagement Plan Overview

The Public Engagement Plan (PEP) includes processes and strategies to provide opportunities for citizens, rural and urban communities, industry and other stakeholders to contribute to Texas’ broadband planning efforts. The PEP has been used as a roadmap, driving strategy to ensure a collaborative, integrated community engagement process to provide a comprehensive understanding of broadband challenges and opportunities across the state. Through multiple engagement opportunities for stakeholders, especially the covered and underrepresented populations, the BDO has provided opportunities for all Texans to share their perspective for planning purposes. As outlined in this section, recurring meetings were held with stakeholder groups throughout summer 2023 for initial planning purposes of IJJA funds. The BDO continues to engage with stakeholders and intends to do so over the course of the program as it recognizes the value of maintaining these partnerships for ongoing planning and implementation. Sustaining these relations helps smooth individual project execution as well as local and Tribal coordination.

Exhibit 61: Public Engagement Plan



Stakeholder groups have been organized into three sets of working groups, members of which committed to providing input and feedback as well as promoting the surveys and public meetings in addition to their distinct missions:

Exhibit 62: Mission of Stakeholder Groups

Statewide Working Group (SWG)	Advise on overall approach to program planning and design, sharing feedback on stakeholder engagement progress and deliverable content.
Regional Working Groups (RWGs)	Serve as conduit between the Comptroller's 12 Economic Regions of Texas and the BDO, providing input from a geography-based perspective.
Outcome-Area Task Forces (TFs)	Provide subject matter expertise and perspective on intersection of broadband and specific areas of focus they represent, including economic and workforce development, education, health, essential services, civic and social services, and business and telecom.

While the working groups largely offered crucial qualitative input, three quantitative assessments were deployed to capture data about the broadband landscapes of Texas:

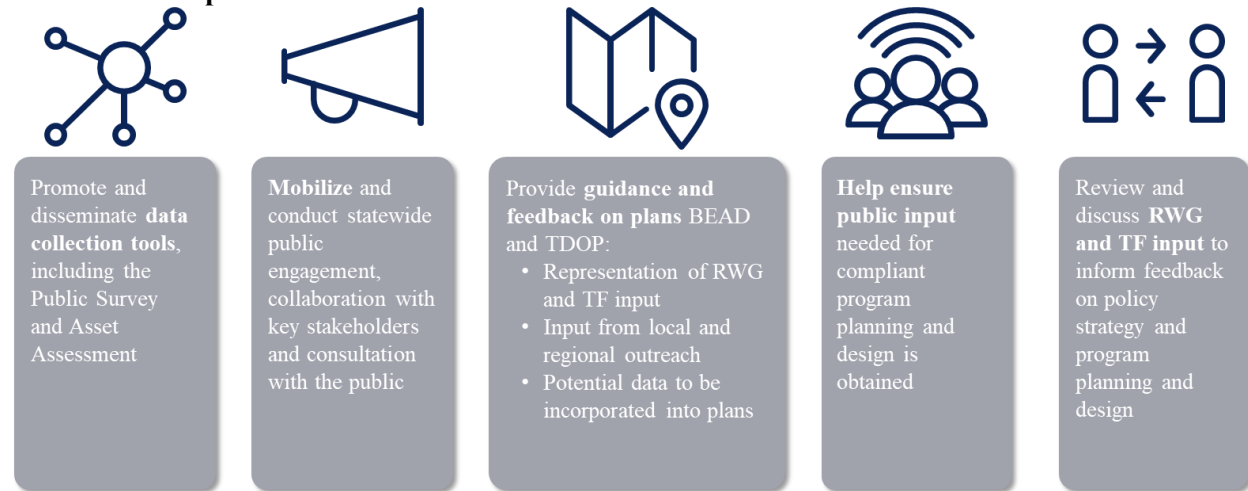
Exhibit 63: Quantitative Surveys

Digital Opportunity Public Survey	Open to all Texas residents; collects data about broadband access, affordability and adoption and barriers to digital opportunity.
Digital Resources Mapping Tool	Collects data from organizations providing programs, services and tools that enhance access to the internet, devices and digital skills training.
Industry Survey	Gathers input from ISPs and other industry groups and participants to understand industry perspective.

5.1.2 Statewide Working Group

The SWG acts as a focal point for coordinating and channeling the efforts of RWGs and TFs along with providing feedback on the strategy for program engagement. Additionally, it provides advisory support to the BDO in determining how to integrate policy recommendations into program planning and design.

Exhibit 64: Purpose of the SWG



Critical Inputs

The SWG provides input on critical topics, including:

Exhibit 65: SWG Critical Inputs

Program Strategy	<ul style="list-style-type: none"> • If state funding is available, when should the BDO apply the 25 percent match requirement for the BEAD Program? When should it waive it? • How can the BDO help streamline permitting, pole attachments and right-of-way access for broadband deployment? • What role should towns, local governments and regional planning districts play in IJJA programs? • How can the state address workforce constraints to speed broadband expansion?
Community Input	<ul style="list-style-type: none"> • How can IJJA programs improve the economy and help people find jobs? • How can IJJA programs improve learning and education? • What can the state do to advance telehealth? • How can the state leverage broadband expansion to improve public safety and emergency preparedness? • How can the state leverage CAIs to enhance civic participation? • What kind of digital opportunity programming would help people with disabilities to get more out of the internet? • What needs exist to promote broadband adoption among covered populations? • How can the state increase ACP participation rates?
Affordability	<ul style="list-style-type: none"> • How should the state define the low-cost option that BEAD Program subgrantees will need to offer? • How should the state prioritize fiber vs. other broadband technologies? • How should the state set the EHCPLT (level or process)?
Challenge Process	<ul style="list-style-type: none"> • During the challenge process, what evidence should the state require challengers to provide? • How should the state mobilize participation in the challenge process?
Subgrantee Selection	<ul style="list-style-type: none"> • What factors should the state consider in assessing the impact of projects for purposes of subgrantee selection? How should it measure these factors? What weight should it give to each factor?

The SWG’s inputs informed meeting agendas and other engagement activities of summer 2023, and in turn, its feedback has served as data and recommendations to the BDO.

Governance

Four virtual meetings were held monthly from April-July 2023 to review TF and RWG progress, hold discussions centered on critical inputs, and provide feedback on BEAD Program and Digital Opportunity Plan deliverables.

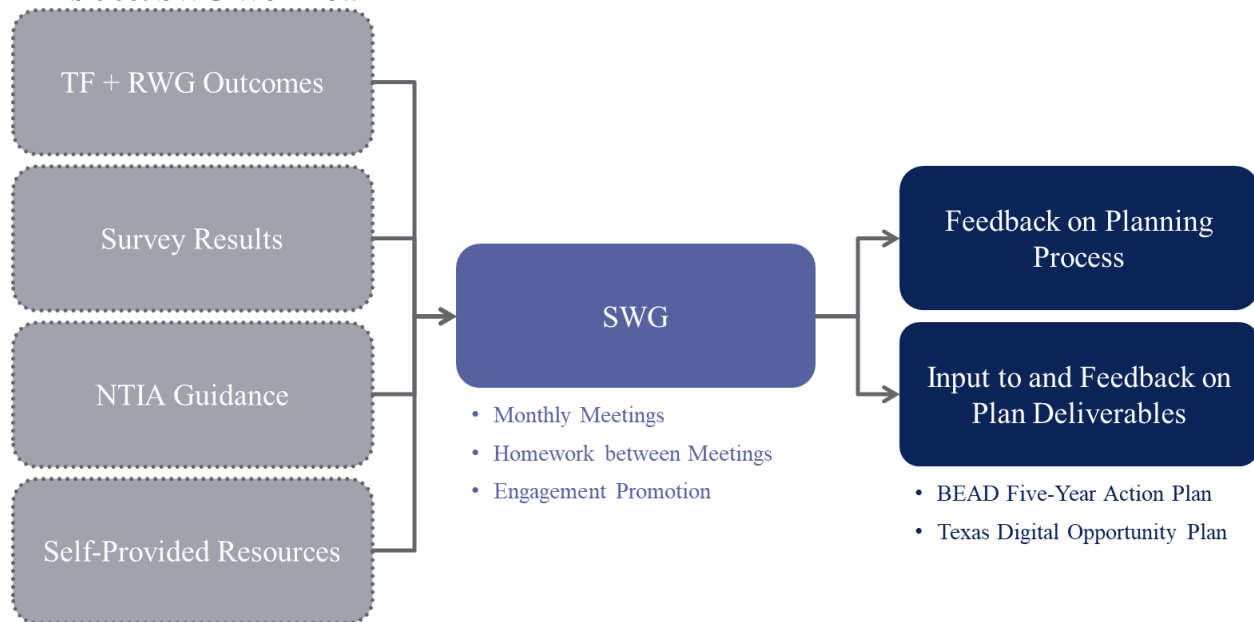
Chaired by the BDO, the SWG includes TF chairs, leaders of RWGs, representatives from relevant state agencies, Tribal Governments and organizations. This group also includes statewide broadband and organizations focused on expanding digital opportunities, such as:

- Texas Rural Funders.
- Texas Digital Equity Network.
- Digital Texas.
- Texas 2036.
- Texas Association of Regional Councils.
- Texas Association of Counties.

The full set of organizations is listed in Section [3.2.1](#).

Outputs from TFs, RWGs, survey results, NTIA guidance and self-provided resources have fed into SWG meetings. This allows members to have a holistic understanding of the state’s barriers and their respective impact regarding broadband access, affordability, digital opportunity, adoption, broadband deployment and economic growth and job creation. Before meetings, materials were distributed for members to review and prepare for discussion. Through this model, SWG meetings have been effective in collecting insightful member feedback on the planning process and deliverables, rooted in awareness of the status of the state.

Exhibit 66: SWG Workflow



5.1.3 Regional Working Groups

The RWGs function as the primary conduit between the BDO and local communities across the state. Providing key local insight, RWG members serve as trusted partners to coordinate events, meetings, listening sessions and roundtables with local communities, in conjunction with the BDO team members. Summer 2023 involved RWGs identifying barriers to broadband adoption, access and use for organizations and households in their respective regions. Additionally, the BDO tasked RWGs with

promoting the DRMT Survey and Public Survey, utilizing the toolkit and communications materials developed by BDO team members to drive participation and collect data in a uniform manner.

Exhibit 67: Purpose of the RWGs



Identify **barriers** and recommend solutions to broadband access, affordability, and adoption, especially as it may impact the objectives of your own org and its stakeholders



Promote and disseminate **data collection tools**, including the Public Survey and Asset Inventory



Identify **regional assets**, resources, coalitions, data, and plans that can inform state planning



Support the hosting and facilitation of public meetings in the region to **ensure regional perspective** is shared during this process

Critical Inputs

The RWGs provide input on critical topics, including:

- Coverage and quality of broadband service in each region.
- Impact of inadequate broadband coverage.
- Mobilizing people in each region to participate in the BEAD Program challenge process and identifying coverage gaps.
- Speed and other network characteristics needed to support telework, remote learning, telehealth and other local broadband needs.
- Defining affordability for each region.
- Community preferences around broadband technology.
- The role towns, local governments and regional planning districts play in reporting coverage gaps and facilitating broadband expansion.
- Assessment of organizations, programs, projects and initiatives in each region that may be eligible for funding through Texas' upcoming Digital Opportunity Program.
- Enhancing contributions from CAIs.

Regional Public Meetings

Twenty-four public meetings were held in summer 2023 to capture and incorporate the voice of communities across Texas' diverse geography (**Exhibit 68**). These meetings were supported to accommodate accessibility and language needs, as well as in coordinating logistics with hosts and

Voice of Texans

“As someone in a rural area it means a lot that you’re going to the [places] that are harder to get to.”

- Civic and Social Engagement Task Force Member

facilitators to ensure widespread participation. Input from public meetings have been systematized and collected through worksheets completed by attendees.

Governance

A virtual kickoff meeting attended by all RWG members

served as an orientation to the purpose and goals of the public engagement plan. Following the kickoff, chairs of each RWG set the workflow of their assigned RWG, including working with the members to plan and facilitate meetings and track and report progress. RWGs supported the planning and facilitation of at least two regional public meetings also attended by members of the BDO.

Exhibit 68: Public Meetings Locations



Each group consists of roughly 20 representatives from local organizations with a varying mix according to local priorities, including:



Exhibit 69: Organizations Representation in RWGs

Regional Councils of Government	Mayors and City Council Members	County Judges	Chambers of Commerce	Regional Broadband Coalitions
Regional Digital Opportunity Groups	Tribal Governments	Local Hospital, Clinic Staff, Health Care IT	Local Public Safety Officials	Minority-Serving Community Organizations
Faith-based Organizations	Area Agency on Aging	Aging and Disability Resource Center	School Superintendents and School Board Members	Community-based Organizations
Local Government Broadband Office Staff	Community and Technical Colleges	Local Texas A&M AgriLife Extension Agent	Local Library Directors	Digital Inclusion Providers

Interests of the RWGs and insights from local engagement have fed to the statewide advisory groups through representatives from some RWGs. The full set of member organizations is listed in Appendix **Error! Reference source not found..**

5.1.4 Task Forces

Six outcome-area TFs are composed of subject matter experts on topics including economic and workforce development, education, health, essential services, civic and social engagement as well as business and telecom. TF members shared insights on topic-specific broadband priorities and aligned those priorities to BEAD and TDOP programs. The TFs collect and produce critical input to address deliverable requirements and inform certain policy decisions for program planning and design. TF inputs informed meeting agendas and other engagement activities of summer 2023, and in turn, member feedback has served as data and recommendations to the SWG and the BDO.

Exhibit 70: Purpose of the TFs



Identify **barriers** and recommend solutions to broadband access, affordability, and adoption, especially as it may impact the objectives of your own org and its stakeholders



Identify **assets** of existing and planned programs, plans and services for outcome area, applicable data, and gaps in resources



Mobilize and conduct statewide public engagement and collaboration with key stakeholders



Provide **feedback** on BEAD and TDOP program deliverables



Promote and disseminate **data collection tools**, including the Public Survey and Asset Inventory

Critical Inputs

The TFs provide input on critical topics, including:

Exhibit 71: TF Critical Inputs

Economic and Workforce Development	<ul style="list-style-type: none"> • Speed and other network characteristics needed to support job search, telework, small business and agriculture. • Prioritization of fiber over other broadband technologies. • Navigating trade-off between (a) fiber to unserved areas and (b) having funds left over for bringing 100/20 broadband to underserved areas. • Subgrantee selection criteria definition and weighting (e.g., fair labor practices, equitable workforce development and job quality, and other relevant factors). • Identifying and addressing workforce constraints to broadband expansion. • Assessing which programs are effective in leveraging broadband to improve the economy and helping people find better jobs.
Education	<ul style="list-style-type: none"> • Speed and other network characteristics needed to support remote learning, virtual lecturing and online homework. • Device access and affordable connectivity for students and their families. • Assessment of programs best leveraging the internet to improve learning and education. • Enhancing contributions from CAIs.
Health	<ul style="list-style-type: none"> • Current and emerging use cases of telehealth.

<p>Essential Services</p>	<ul style="list-style-type: none"> • Examination of infrastructure, institutional changes and digital skills are required. • Speed and other network characteristics needed to support telehealth.
<p>Civic and Social Engagement</p>	<ul style="list-style-type: none"> • Network design for resilience against natural disasters and climate threats. • Enhancing public safety and emergency preparedness. • Enhancing contributions from CAIs. • Assisting covered populations including aging individuals, individuals and families living with disabilities, and individuals and families experiencing homelessness and food insecurity with receiving services through use of the internet. <ul style="list-style-type: none"> • What factors should the state consider in assessing the impact of projects for purposes of subgrantee selection? How should it measure these factors? What weight should it give each factor? • Speed and other network characteristics needed to support civic and social participation. • Assessment of programs and initiatives to help people engage in civil society. • The role towns, local governments and regional planning districts play in reporting coverage gaps and facilitating broadband expansion, digital skills training and affordability. • Defining the BEAD Program low-cost option. • Standards for the challenge process. • Mobilizing industry and public participation in the challenge process and ensuring the maps are accurate before allocating BEAD Program funds. • Shaping “affordability” for Texas. • Network design for resilience against natural disasters and climate threats. • Streamlining processes for permitting, pole attachment fees and public right-of-way. • Enhancing contributions from CAIs. • Subgrantee selection criteria definition and weighting: <ul style="list-style-type: none"> ○ Affordability. ○ Local and Tribal coordination.
<p>Business and Telecom</p>	<ul style="list-style-type: none"> • Standards for challenge process. • Mobilizing industry and the public to participate in the BEAD Program challenge process and ensure the maps are accurate before allocating BEAD Program funds. • Defining the BEAD Program low-cost option. • Prioritization of fiber over other broadband technologies. • Navigating trade-off between (a) fiber to unserved areas and (b) having funds left over for bringing 100/20 broadband to underserved areas.

- Developing the EHCPLT.
- Subgrantee selection criteria definition and weighting:
 - Minimum BEAD Program outlay.
 - Affordability.
 - Fair labor practices.
 - Speed to deployment.
 - Equitable workforce development and job quality.
 - Open access (of middle mile assets to other providers).
 - Local and Tribal coordination.
 - Technical capabilities (e.g., network speed).
 - Other financial and technical characteristics.
 - Other relevant factors.
- Match requirement and waivers.
- Streamlining processes for permitting, pole attachment fees and public right-of-way.
- Identifying and addressing workforce constraints to broadband expansion.
- Maximizing participation in device distribution, digital skills training and other digital opportunity programs.

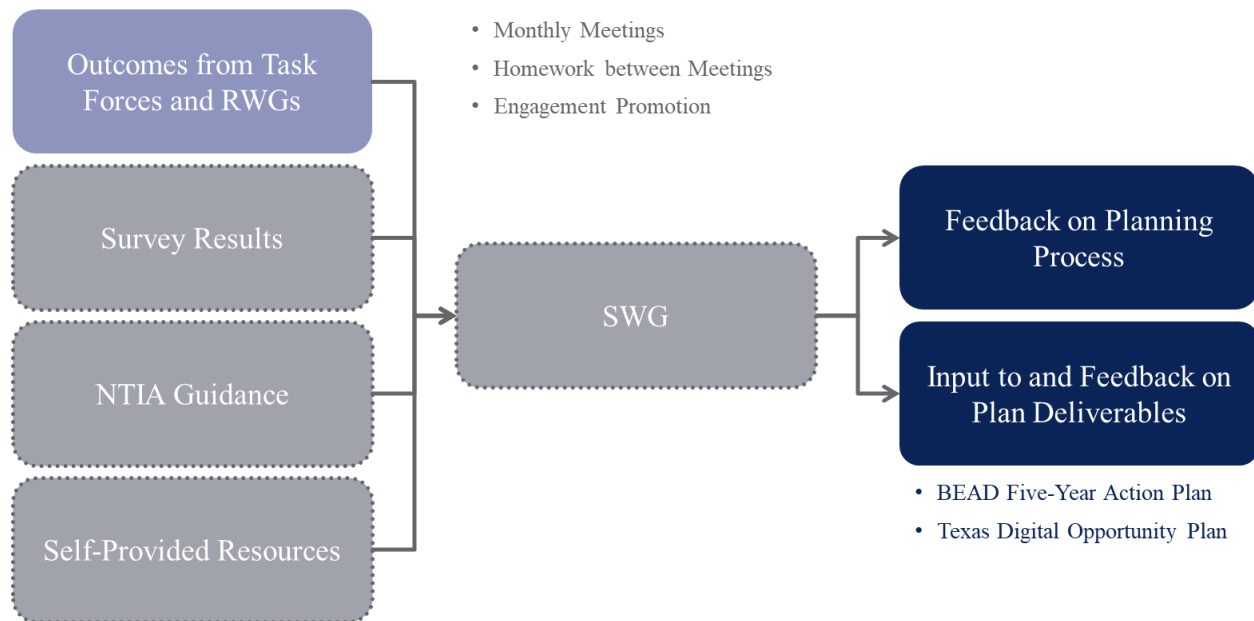
Governance

Each TF is led by a point of contact from the BDO team. Three virtual meetings were held once a month, spanning from May-July 2023. Between meetings, materials were distributed to members and an assignment was given. Inputs from these assignments shaped the agendas for the following meetings.

Each TF is chaired by a member selected by the BDO and consists of roughly two dozen total members representing groups and subject matter expertise for the given outcome area. Members were selected based on their experience and expertise, as well as their ability to provide related technical assistance and engagement. Organizations represented in the TFs are listed in Section 3.2.3.

TF input feeds into the SWG through the BDO and TF chairs. TF chairs were given the option to either submit a monthly status report or attend the upcoming SWG call for a verbal status update in summer 2023. If unable to attend the SWG meeting, a BDO team member or other TF member spoke in the chair's absence.

Exhibit 72: TF Workflow



5.1.5 Tribal Engagement

In Texas, there are three federally recognized Tribes, including the Alabama-Coushatta Tribe of Texas in Livingston, the Kickapoo Traditional Tribe of Texas in Eagle Pass and the Ysleta del Sur Pueblo in El Paso. The BDO invited leaders from these three federally recognized Tribes of Texas to participate in and contribute to the SWG; the invitation was accepted by the Kickapoo Traditional Tribe of Texas and the Alabama-Coushatta Tribe of Texas.

Comptroller Hegar initiated further engagement with the Tribes through Dear Tribal Leader Letters that requested a formal Tribal consultation. Both the Kickapoo Traditional Tribe of Texas and the Alabama-Coushatta Tribe of Texas accepted the consultation, which has established a formal working relationship and dialog between governments. Tribal Consultations created a space to share broadband plans and priorities and timelines; gain insight into digital inclusion, adoption and use; and understand how best to engage and assist the Tribal governments. The BDO looks forward to fostering these relationships and continuing collaboration with both Tribal governments.

The Ysleta del Sur Pueblo in El Paso denied the request to establish a formal relationship for broadband planning, but the BDO has indicated directly with the Tribe that if Tribal members reconsider, the office is open and eager to begin that partnership. The BDO respects the Tribe's unilateral approach to broadband planning and looks forward to any potential future relationship with the Ysleta del Sur Pueblo in El Paso.

5.1.6 Tools and Surveys

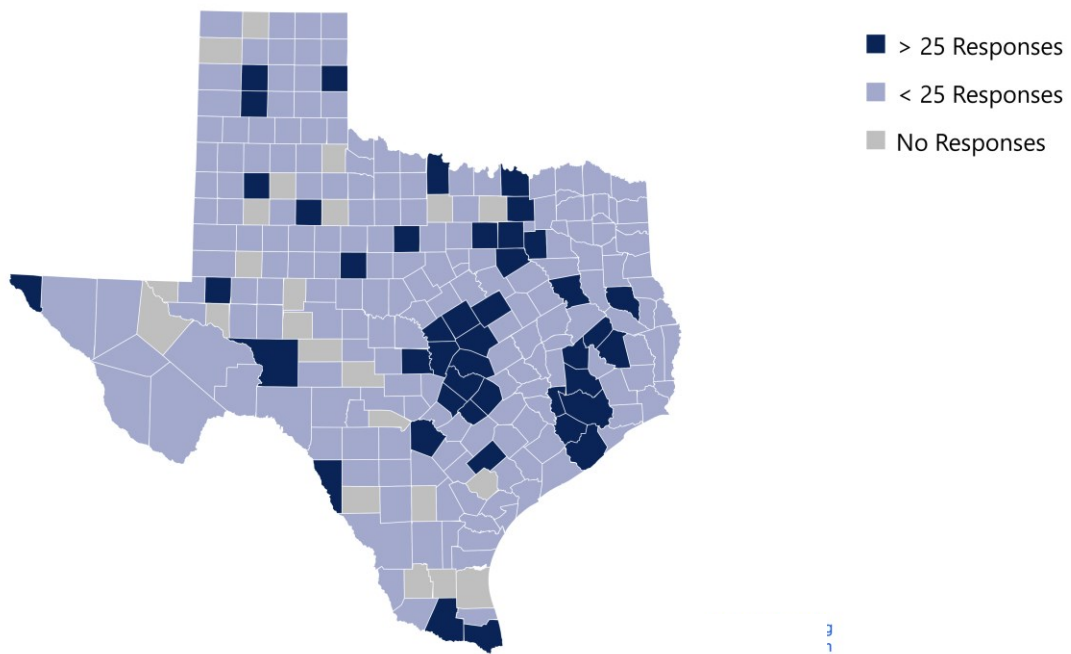
Three surveys were deployed in April 2023, including a Digital Resources Mapping Tool (DRMT) Survey, a Public Survey and an Industry Survey. Surveying is an effective method to ensure the widest net was cast to collect data informing program planning and design. Data collected through survey tools have provided quantitative information to complement the qualitative data collected through other methods, such as roundtables, listening sessions, working groups and community events. These data provide additional context about broadband and digital opportunity barriers across the state at an individual and household level as well as at an organizational level. Additionally, collecting data about

existing digital opportunity efforts in Texas allowed for the inclusion and analysis of information already collected by organizations engaged in this work before this effort. Survey questionnaires and accompanying toolkits are available on the BDO website.^{xv}

5.1.6.1 Public Survey

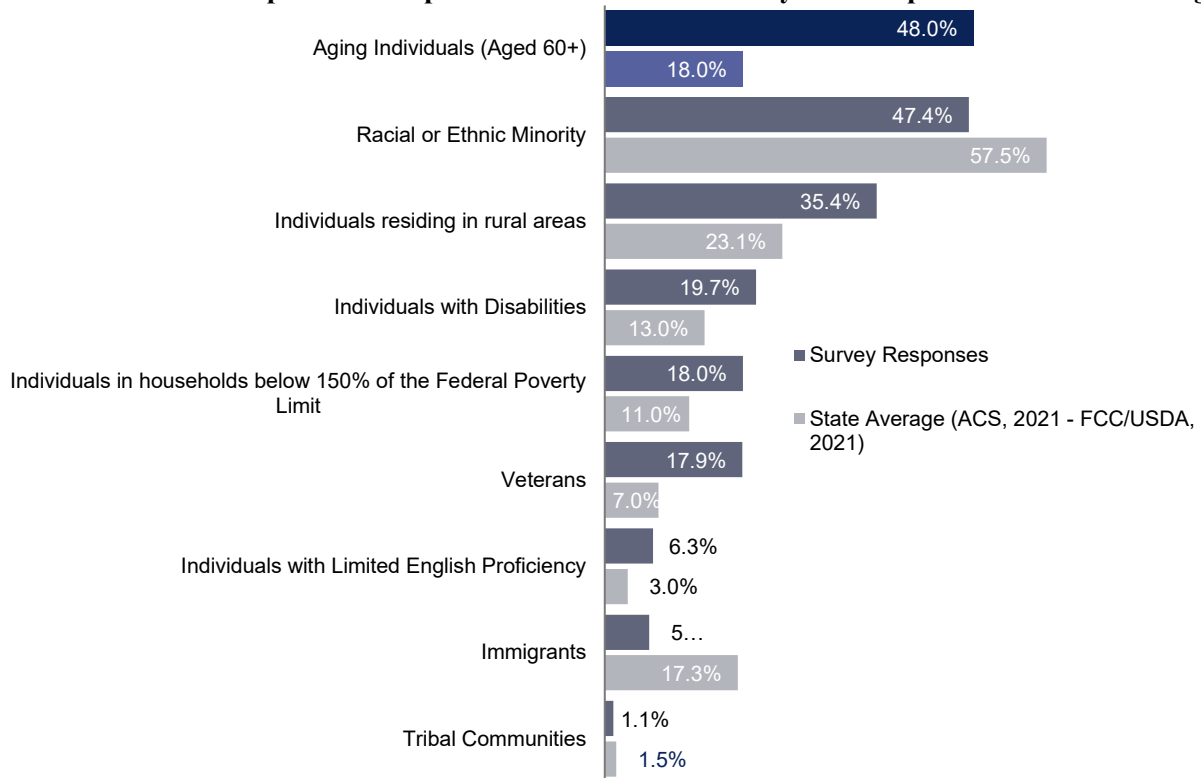
Open to all Texas residents from April-August 2023, the Public Survey collects data about broadband access, affordability, adoption and barriers to digital opportunity. As of July 2023, the survey has reached 9,418 residents with a 75 percent completion rate. Most respondents who completed the survey were reached via email, social media, local CBOs and local government agencies. In terms of geographic coverage, residents from 232 of Texas' 254 counties responded to the survey (**Exhibit 73**).

Exhibit 73: Public Survey Responses by County



Covered populations were mostly well represented proportional to American Community Survey (ACS) comparisons in other states, with notable overrepresentation of individuals 60 years or older (**Exhibit 74**).

Exhibit 74: Covered Populations Representation in Public Surveys as Compared with ACS Average

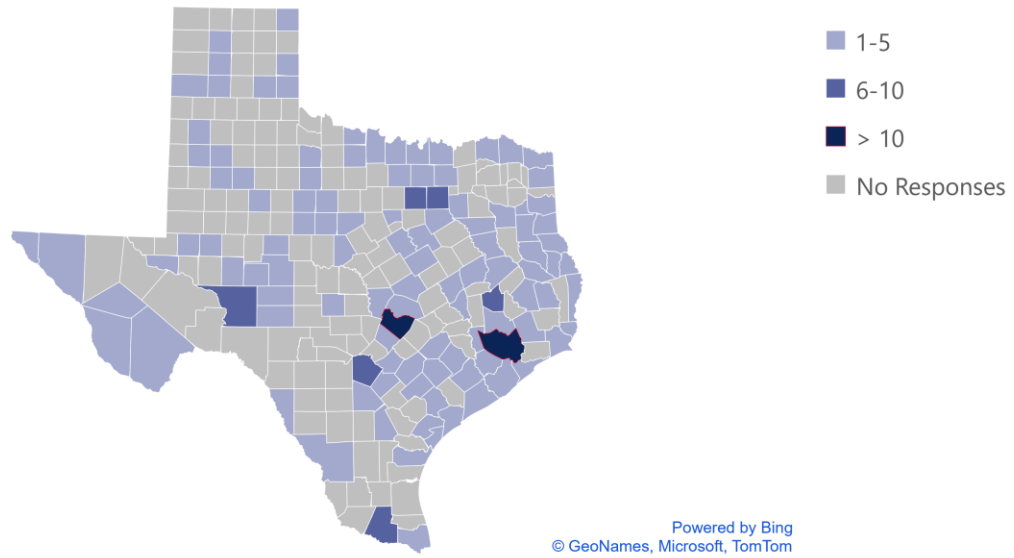


5.1.6.2 Digital Resources Mapping Tool

The DRMT Survey collected data beginning April-August 2023 from organizations that provide programs, services and tools enhancing access to the internet, devices and digital skills training. The goal of this survey is to capture and depict where resource gaps may exist within Texas and to identify the digital opportunity programs and services currently available in the state. It can help to generate a snapshot of where Texas is today in addressing digital opportunity, catalogue available digital equity programs and services and highlight model programs that may be replicated throughout the state.

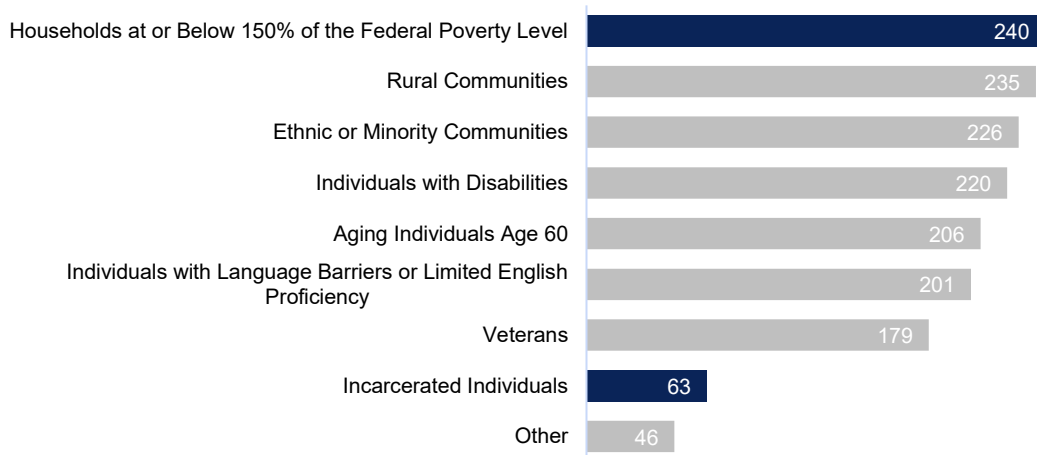
As of July 2023, the DRMT Survey reached 821 different organizations across the state, with a 70 percent completion rate. These organizations include a mix of institutions, CBOs, companies and government entities. In terms of geographic coverage, the DRMT Survey had the largest reach in Travis, Harris, Bexar and Crockett counties, representing approximately a quarter of responses (**Exhibit 75**).

Exhibit 75: DRMT Survey Responses by County



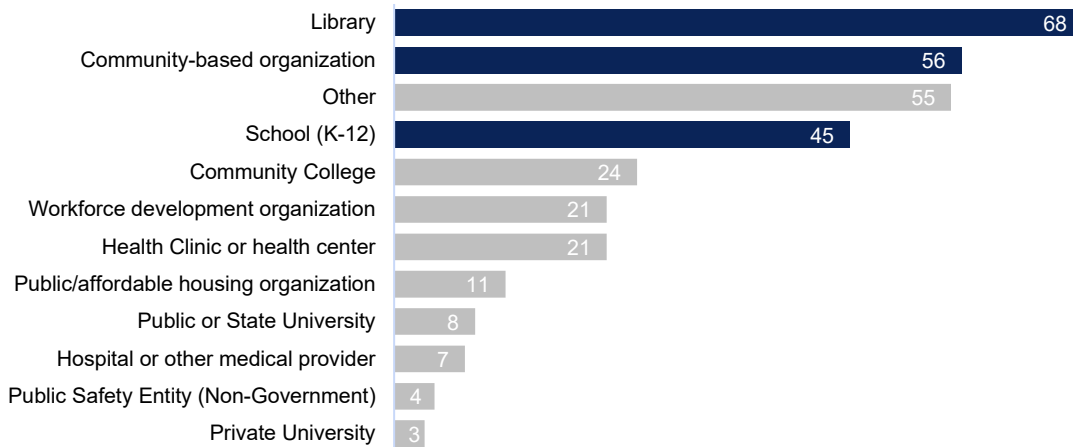
More than 200 organizations serve six of the eight covered populations, with low-income households being the most served and incarcerated individuals being the least served by a significant margin (**Exhibit 76**).

Exhibit 76: DRMT Survey Responses by Covered Populations Served



Libraries, CBOs and K-12 schools represented more than half of respondents who identified as a CAI (**Exhibit 77**).

Exhibit 77: Community Anchor Institutions by Subcategory

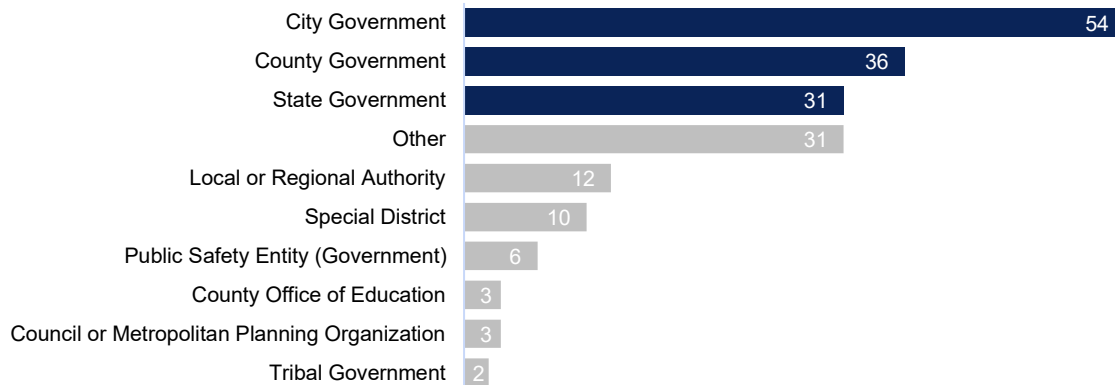


“Other” CAI respondents include:

- Economic Development Organizations.
- Chambers of Commerce.
- Museums.
- Fire Departments.
- Neighborhood Cultural Organizations.
- Correctional Education Institutions.
- Hispanic Serving Institutions.
- Veterans Commissions.
- Adult Education Centers.

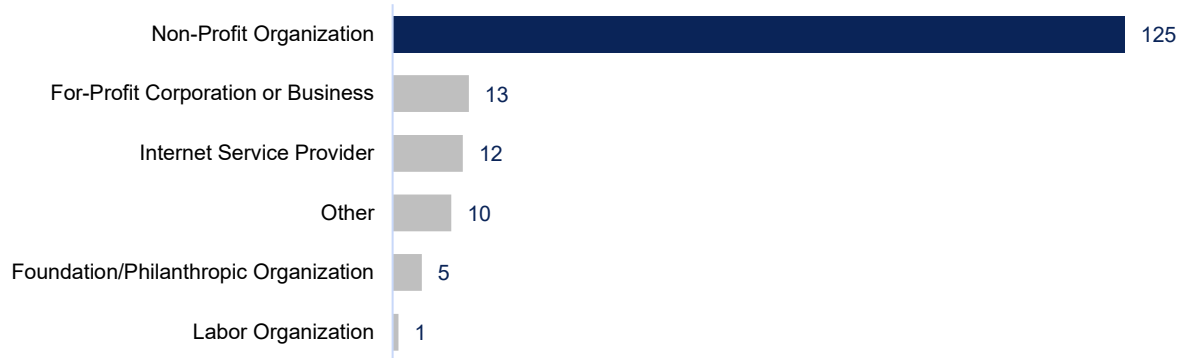
City and county government and state agencies represent most government or public organization respondents (**Exhibit 78**).

Exhibit 78: Government or Public Organizations by Subcategory



Lastly, nonprofits were the most represented among non-public organizations (**Exhibit 79**).

Exhibit 79: Private Sector and Non-Governmental Organizations by Subcategory



5.1.6.3 Industry Survey

The Industry Survey began collecting data from ISPs and other industry groups beginning April-June 2023. During this time, 79 unique respondents provided information. Of those, 51 respondents completed the survey, and 28 respondents provided partial responses. The survey seeks to understand industry perspective on the issues discussed in this Five-Year Action Plan, including:

- Insights about Texas ISPs serving covered populations around the state.
- Opportunities for households to acquire computing devices.
- Digital skills training offered by ISPs, plans for participating in the BEAD Program and other programs intended to increase internet access for covered populations.
- Participation in industry associations.

5.1.6.4 Toolkits

Toolkits were also created to aid those who would promote the surveys and public meetings and increase participation. These toolkits are available on the BDO website and have been distributed to all working groups and task force members, who were encouraged to share the toolkits further within their organizations. The toolkits and their purposes are as follows:

Exhibit 80: Promotional Toolkits

Digital Opportunity Public Survey Partner Toolkit	Templates that can be used to introduce Texas Digital Opportunity Public Plan and encourage public responses; includes article, flyer, press release, social media post and invitation letter.
Digital Resources Mapping Tool Survey Toolkit	Introduces Texas Digital Opportunity Public Survey and encourages partner organizational responses; includes invitation letter and social media copy.

Public Meeting Toolkit	Like the survey toolkits, this includes materials partner organizations can use to promote the meetings.
Social Media Toolkit	Social media templates for stakeholders to promote survey participation on channels such as Facebook, LinkedIn and Twitter.

5.2 Priorities

The development and implementation of the Five-Year Action Plan are guided by the following principles. These are rooted in the vision and goals outlined in Section 2 above and informed by the Needs and Gaps of the State as assessed through the stakeholder engagement process and outlined in Section 3.4 above. Each priority is enumerated for ease of traceability elsewhere in this document and not necessarily in rank order (**Exhibit 81**).

Exhibit 81: Objectives and Priorities of the BDO

Objective		Priority	Description	
O1	Universal Access	P1	Availability of reliable broadband across the state	Enable the deployment of reliable high-speed internet in unserved areas and improve service quality in underserved areas.
		P2	Network technology optimization	Develop the EHCPLT such that it helps ensure an optimized mix of fiber and other technologies where fiber is not practical.
O2	Funding Optimization	P3	Mitigation of barriers to deployment	Engage with relevant stakeholders to understand and reduce barriers or mitigate their impact on broadband deployment activities.
		P4	Workforce readiness	Encourage broadband job-related skills development to facilitate availability of skilled workforce.
		P5	Leveraging of existing assets	Prioritize utilization of existing assets, funding and infrastructure for deployment.
		P6	Robust participation from a variety of applicants	Collaborate with industry and other stakeholders to develop a program that enables viable business models suitable for a variety of providers and project needs.
O3	Affordability	P7	Affordable broadband service to consumers	Define a low-cost option to encourage development of sustainable broadband service offerings suitable for low-income consumers, especially those within covered populations and historically marginalized communities, and prioritize proposals that improve affordability.
O4	Subscribership	P8	Enabling Texans to participate in the digital economy	Collaborating with community-based organizations and other stakeholders to support broadband adoption and digital literacy programs to increase subscribership; bringing Texans online and reducing the shared cost burden in the process.

Objective		Priority		Description
O5	Stakeholder Engagement	P9	Stakeholder input and local and Tribal coordination	Establish a robust public engagement model to ensure stakeholder input representative of the diverse geographic and outcome area interests of the state, as well as ongoing local and Tribal coordination through program execution.
O6	Program Effectiveness	P10	BEAD infrastructure Program Management Office (PMO)	Establish a BEAD Infrastructure PMO within the BDO to drive BEAD related activities (e.g., sub-awardee selection, industry consultation and collaboration), monitor progress and engage with relevant stakeholders to steward public funds.
		P11	Grant process streamlining	Develop a transparent and efficient selection process that is both compliant with federal requirements and clear and accessible for applicants and other stakeholders.

5.3 Planned Activities

The BDO has identified activities it intends to carry out to support universal service and achieve the Goals and Objectives outlined in Section 2. Activities have been organized in the table below as they relate to Priorities (P) outlined in Section 5.2 (**Exhibit 82**).

Exhibit 82: Planned Activities of the BDO

Activities and Key Players ⁹		Expected Outcomes
Objective 1: Universal Service		
P1	Identify areas of need through ongoing stakeholder engagement as outlined in Section 5.1. <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Local communities in unserved and underserved areas 	Unique priorities for and barriers to service are understood by the BDO for unserved and underserved areas as well as CAIs and covered populations, so that it may inform program planning and design to guide funding allocation to achieve universal broadband access across the state.
	Establish standards for eligible projects in terms of speed, latency, reliability and resilience. <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Local communities in unserved and underserved areas 	Program parameters are set to serve as the minimum acceptable service quality for new deployment projects in unserved areas and enhanced service quality projects in underserved areas to achieve a reliable broadband network across the state.
P2	Develop the EHCPLT. <ul style="list-style-type: none"> BDO Business and Telecom Task Force 	The EHCPLT is established such that universal broadband access may be achieved through efficient use of subsidy and technology selection.
Objective 2: Funding Optimization		
P3	Identify and mitigate barriers to deployment. <ul style="list-style-type: none"> BDO Business and Telecom Task Force 	Underlying issues to broadband deployment and potential solutions to remove barriers or mitigate their impact are understood by the BDO, so that they may inform program planning and design decisions to shape

⁹ Please refer to Section **Error! Reference source not found.** Partnerships and Section **Error! Reference source not found.** Stakeholder Engagement Process for details on Task Forces.

Activities and Key Players ⁹		Expected Outcomes
	<ul style="list-style-type: none"> Civic and Social Engagement Task Force 	the strategies of grant-funded projects and help optimize the use of program funds.
P4	<p>Promote workforce development programs and partnerships.</p> <ul style="list-style-type: none"> BDO Texas Workforce Commission Economic and Workforce Development Task Force Business and Telecom Task Force Local communities in unserved and underserved areas 	Workforce readiness in terms of the capacity and broadband-related skills necessary to implement awarded projects, while creating and enhancing broadband-related job opportunities for Texans in support of BEAD Program deployment and on-going support.
P5	<p>Assess and incorporate existing assets.</p> <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Local communities in unserved and underserved areas 	Understanding available funding sources, existing infrastructure and other available assets to support the strategies of grant-funded projects and optimize the use of program funds while mitigating unnecessary overbuild.
P6	<p>Design grant programs to support viable business models and promote robust participation from a variety of applicants.</p> <ul style="list-style-type: none"> BDO Business and Telecom Task Force Civic and Social Engagement Task Force 	Program parameters designed to allow for participation from a diverse mix of service providers whose business models may respond to the diverse needs of unserved and underserved areas.
Objective 3: Affordability		
P7	<p>Define a low-cost option.</p> <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Business and Telecom Task Force Local communities in unserved and underserved areas 	Increased availability of affordable plans for low-income consumers, including those within the covered populations and historically marginalized communities.
	<p>Prioritize proposals that improve affordability.</p> <ul style="list-style-type: none"> BDO 	Increased subscribership as more consumers can afford broadband service as a direct or indirect result of an awarded project.
	<p>Promote and support existing consumer subsidy programs like the ACP.</p> <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Business and Telecom Task Force Local communities in unserved and underserved areas 	Increased adoption of broadband among consumers who would otherwise not access broadband due to cost.
Objective 4: Subscribership		
P8	<p>Identify and support Community Anchor Institutions (CAIs) and Community-Based Organizations (CBOs) that offer digital literacy and skills programs; advocate the importance of universal access; and serve as conduit for ongoing local and Tribal coordination of broadband initiatives.</p> <ul style="list-style-type: none"> BDO 	Increased participation in the digital economy from consumers who lack digital literacy and skills by leveraging support from CAIs and CBOs.

Activities and Key Players ⁹		Expected Outcomes
	<ul style="list-style-type: none"> Working Group and Task Force Partners Local communities in unserved and underserved areas 	
	<p>Facilitate inventory and coordination of existing digital opportunity data, programs and other assets to optimize investment by amplifying existing capability or encouraging development of new capabilities that address gaps to help Texans effectively participate in the digital economy.</p> <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Local communities in unserved and underserved areas 	Digital opportunity programs are efficiently available to allow Texans to effectively participate in the digital economy.
Objective 5: Stakeholder Engagement		
P9	<p>Provide robust public engagement and data collection throughout the BEAD Program lifecycle.</p> <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Local communities in unserved and underserved areas 	Program planning and design is informed by stakeholder input representative of the diverse geographic and outcome-area interests of the state, including those from local and Tribal governments, communities and covered populations.
	<p>Continue local and Tribal coordination to support project development and implementation, including an ongoing stakeholder feedback loop, program promotion, etc.</p> <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Local communities in unserved and underserved areas 	Project selection, development and implementation conducted more efficiently and effectively through continued stakeholder engagement.
Objective 6: Program Effectiveness		
P10	<p>Establish Grants PMO within the BDO.</p> <ul style="list-style-type: none"> BDO 	Coordination and alignment of roles, processes and systems necessary to run a successful grant program that is a good steward of public funds, including governance for decision-making, compliance framework, application process, selection and challenge processes, reporting and dashboards, and monitoring and audit processes
P11	<p>Ensure awarded projects are aligned to requirements and objectives of funding sources.</p> <ul style="list-style-type: none"> BDO Business and Telecom Task Force 	Meeting grant program objectives while preventing waste, fraud and abuse of public funds.
	<p>Create a streamlined application and evaluation process to encourage participation and optimize speed to deployment.</p> <ul style="list-style-type: none"> BDO 	Potential applicants are encouraged to participate by simplifying complex processes while providing transparency in the evaluation, selection and award processes.
	<p>Develop BEAD <i>Initial Proposal</i>.</p> <ul style="list-style-type: none"> BDO Working Group and Task Force Partners Business and Telecom Task Force 	Provide clarity to NTIA and the public how Texas will achieve universal access while giving industry partners on the parameters for the grant design.

Activities and Key Players ⁹	Expected Outcomes
Develop BEAD <i>Final Proposal</i> . <ul style="list-style-type: none"> • BDO • Working Group and Task Force Partners • Business and Telecom Task Force 	Identify subgrantee selection outcomes; project areas and timelines; and plans for implementation, monitoring and revision.

5.4 Key Execution Strategies

The BDO has considered key strategies to implement the BEAD Program in alignment with objectives, priorities and underlying activities expressed in this Five-Year Action Plan and to maintain compliance with statutory requirements of the BEAD Program. These strategies will inform development of program design and processes documented in the BEAD Initial and Final Proposals, including the subgrantee selection and challenges processes. The following sections outline this process and describe the intended approach taken by the BDO for various program components.

5.4.1 Program Design Inputs

The BDO will take steps to understand the requirements of state and federal procurement requirements and how they resolve when in conflict. This includes those found in the NTIA BEAD Program NOFO, NTIA guidance regarding subgrantee selection and challenge process, and the U.S. Code of Federal Regulations Part 200 (Uniform Guidance). The BDO will account for these requirements in the design of processes, procedures and systems used in the administration of the grant program, including the incorporation of accountability procedures pertaining to the compliance of subgrantees.

Additionally, the BDO will consider “critical input” gained through engagement with stakeholder working groups and task forces as well as the public, as it pertains to other program design considerations. These were outlined in this document for the Statewide Working Group and Task Forces in Section 5.1. Such input will inform program design decisions such as the EHCPLT or requirements around the low-cost option. Decisions will manifest in the subgrantee application form, the evaluation criteria and evaluation and scoring procedures.

Finally, the BDO will consider existing and emerging state priorities, compliance with state law and coordination with other state agencies that are key stakeholders in state efforts to expand broadband access and close the digital divide.

5.4.2 Selection Criteria

In carrying out the evaluation procedures, the BDO will identify eligible and qualified subgrantees in a fair and competitive process. Well-defined and transparent evaluation procedures will act as safeguards against collusion, bias, conflicts of interest, arbitrary decisions and other factors that could undermine confidence in a fair and competitive process. One such evaluation procedure will ensure that subgrantees, contractors and subcontractors can demonstrate a history of and plans for strong labor standards and protections. This includes plans for ensuring compliance with federal labor and employment laws, workplace safety and use of an appropriately skilled and credentialed workforce.

Another important evaluation procedure will help ensure grant applicants consider how affordability is incorporated into their proposal. First, applicants will be required to submit a low-cost option (e.g., adoption of the ACP) as part of the service

offerings available in a BEAD-funded project area. The BDO will also consider how to incentivize or prioritize proposals that improve consumer affordability in other ways and seek ways to balance this with the need for service providers to sustain revenue sufficient for operating expenses into the future.

An EHCPLT is a BEAD Program subsidy cost per location to be utilized during the subgrantee selection process described in Section IV.B.7 of the BEAD Program NOFO above, which the BDO may decline to select a proposal if use of an alternative technology meeting the BEAD Program’s technical requirements would be less expensive. The BDO must establish this threshold in a manner that maximizes use of the best available technology while ensuring the program can meet the prioritization and scoring requirements set forth in Section IV.B.6.b of the BEAD Program NOFO. NTIA expects the BDO to set the threshold as high as possible to help ensure end-to-end fiber projects are deployed wherever feasible^{xvi}.

Public-Private Partnerships (P3s) and cooperatives are an important consideration as well. While municipal broadband networks are not explicitly prohibited in Texas, the BDO must abide by Texas statutes of SB 1238, signed into law by the Governor on June 2, 2023, which states that:

The [broadband] office may not... award a grant, loan, or other financial incentive to a noncommercial provider of broadband service for a broadband serviceable location if an eligible [a] commercial provider of broadband service has submitted an application for the same location.

The BDO welcomes advice from the NTIA about how it can honor the BEAD Program guidance with respect to public-private partnerships and cooperatives while following Texas law in not selecting as BEAD Program subgrantees noncommercial providers when commercial providers have applied for BEAD Program funds. Regardless, the BDO has received input from stakeholders indicating a desire for priority to be given to those proposals that incorporate some degree of local community or government

BDO is adopting a multipronged strategy to help ensure availability of workforce:

- **Determine current landscape**
Engage with industry and partners from the Economic and Workforce Development Task Force to understand the workforce landscape and where to expect gaps in terms of workforce capacity and readiness.
- **Collaborate with partners and leverage federal resources**
Collaborate with partners from the Economic and Workforce Development Task Force and connect with Federally Funded Career Services or job readiness programs such as Workforce Innovation and Opportunity Act (WIOA) Programs to promote telecom workforce development.

endorsement, some of which may be formalized in a P3 or cooperative agreement and will consider this in its design of the selection criteria and scoring rubric.

5.4.3 Monitoring and Reporting

Once selected and awarded, the BDO will monitor and oversee subgrantees to ensure they comply with the eligible uses prescribed under the BEAD Program and in accordance with Uniform Guidance. On at least a semiannual basis, subgrantees will submit reports to track performance and effectiveness of award funds. Among other items, reports will reference data and attributes of serviceable locations, network service performance and pricing, and project financial reporting. Reports and other compliance documentation will be stored within a designated system of record for a set period beyond the closeout procedures of the grant.

5.4.4 Grant-Driven Ecosystem

To help ensure program success, the BDO will organize and coordinate stakeholders, processes, procedures and systems through a Grant Program Management Office (PMO). The PMO will consist of a mix of current and planned staff outlined in Section 3.1.2. It will shepherd grants through the full end-to-end lifecycle, ensuring the right processes, procedures and systems are in place, and that those are performing to expectations. Key PMO responsibilities may include:

- Intaking and triaging grant applications.
- Managing subgrantee evaluation and selection processes.
- Monitoring fund utilization and project implementation progress and performance.
- Coordinating stakeholders necessary to the process (e.g., Evaluation Authorities).
- Continuing engagement with external stakeholders to obtain program feedback, promote program activities and foster a culture of process improvement as the program matures.
- Administering a compliance framework for awarded grants and the broader program fund.

5.5 Estimated Timeline for Universal Service

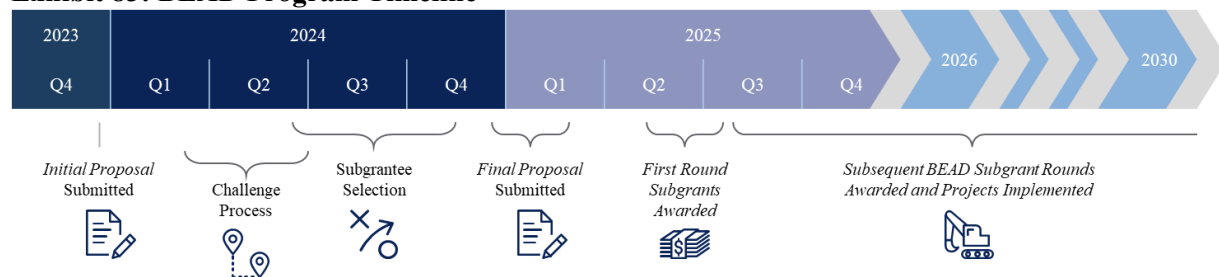
In accordance with [NTIA guidance](#)^{xviii} on the subject, universal service is the principle that all Americans should have access to both telecommunications and high-speed internet at just, reasonable and affordable rates. Universal service is codified in the Telecommunications Act of 1996, which established principles for universal service that specifically focus on increasing access to evolving services for consumers living in rural areas and for consumers with low incomes.

If this principle, expressed as Objective 1 in Section 2.2 above, is to be achieved, it must do so with consideration for the timeline parameters set forth by the BEAD Program NOFO, and those of other funding programs considered by this Five-Year Action Plan, which are listed in Exhibit 85 below. Other factors may impact the overall timeline, including workforce shortages, supply chain issues and local regulatory conditions.

5.5.1 BEAD Program Timeline

The timeline for the BEAD Program is currently estimated to see the first round of subawards disbursed mid-2025 and for work to be completed into 2030 depending on subaward dates and project extensions. **Exhibit 84** shows this timeline beginning with the known due date for the *Initial Proposal* — Dec. 27, 2023 — then extrapolates estimated windows in which key activities and milestones may take place based on timeframes described in the BEAD Program NOFO.

Exhibit 83: BEAD Program Timeline



Those milestones are further described below, including notes from the BEAD Program NOFO on timing, which served as the basis for most of the timeline estimate assumptions.

Exhibit 84: BEAD Milestones

2023	Dec.		<p>BEAD Initial Proposal Submitted</p> <p>BEAD Program NOFO: Due 180 days after Notice of Available Amounts (June 26, 2023).</p> <ul style="list-style-type: none"> Explains how the BDO intends to ensure every resident has access to a reliable, affordable, high-speed broadband connection, utilizing all funding available to be brought to bear to accomplish this goal. Defines how the program will operate, including challenge and subgrantee selection processes.
2024	Jan.		<p>BEAD Initial Proposal Approved</p> <p>Assumption: NTIA review cycle will take up to 30 days to complete.</p> <ul style="list-style-type: none"> Triggers beginning of the BEAD Program challenge process.
	April		<p>BEAD Challenge Process</p> <p>Resolution of challenges must be complete at least 60 days before allocating subgrants.</p> <ul style="list-style-type: none"> Allots at least 14 days to submit challenges related to designation of unserved or underserved locations and another 14 days for challenge rebuttals. Allows challenges from local governments, nonprofit organizations and ISPs. Updates eligible locations based on approved challenges and deduplication of funding process.
	Oct.		<p>BEAD Program Subgrantee Selection</p> <p>Must be completed at least 60 days before submitting Final Proposal to allow time for public comment period and revisions.</p> <ul style="list-style-type: none"> Establishes fair, open and competitive processes for selecting subgrantees.

- Provides for the BDO to receive all proposals, define areas of overlap, score projects and areas using the pre-established rubric, select projects and de-conflict geospatial overlaps.

2025 Jan.



BEAD Final Proposal Submitted

BEAD Program NOFO: Due within 365 days of Initial Proposal approval.

- Explains how the BDO intends to ensure every resident has access to a reliable, affordable, high-speed broadband connection, utilizing all funding available to be brought to bear to accomplish this goal.
- Defines how the program will operate, including challenge and subgrantee selection processes.

Feb.



BEAD Final Proposal Approved; Funding Awarded

Assumption: NTIA review cycle will take up to 30 days to complete.

- Triggers beginning of the implementation process.
- Allows for total funding award to be used for eligible activities as articulated in the Final Proposal.

March



First Round of BEAD Program Subgrants Awarded

Assumption: Allows processing period between the BDO and subgrantees to finalize subrecipient agreements and disburse funds.

- Requires technical and financial compliance to be monitored through remaining program performance period with performance reporting provided to NTIA semiannually.

2026



Subsequent BEAD Program Subgrant Rounds Awarded and Projects Implemented

BEAD Program NOFO: Subgrantees must begin providing service to all project locations within four years of receiving the subgrant.

2027

2028

2029

- Allows extension up to 12 months per project if authorized.
- Encourages projects implemented by subgrantees to provide buildout milestones within the project plan and timeline.
- Requires technical and financial compliance to be monitored through remaining program performance period with performance reporting provided to NTIA semiannually.

2030



BEAD Program Closeout

Assumption: Implementation of projects identified in Final Proposal complete.

- Ensures final compliance check.
- Confirms project completion and successful delivery of project objectives.

5.5.2 Other Program Timelines

The BDO recognizes the path to universal broadband service consists not only of the BEAD Program but also of BOOT, RDOF and other programs. As shown in the table below, timelines of these programs also aim at deployment before 2030, supporting this as the anticipated timeline for universal broadband service if the BEAD Program is successful in achieving its goals (**Exhibit 85**).

Exhibit 85: Timeline for other broadband-related programs

Legislation/Program	Timeline
HB 9	Effective Jan. 1, 2024, contingent on voter approval in November 2023. Total of \$1.5 billion of state funds will be provided to the Broadband Infrastructure Fund, contingent upon voter approval of HJR 125 in November 2023.
BOOT	Funding must be expended by Dec. 31, 2026, which is the end of performance period for the ARPA CPF program.
TBCP ^{xviii}	<p>Entities must complete projects within one year of their receipt of grant funds. The Assistant Secretary may extend the award period for broadband infrastructure construction projects if the eligible entity certifies that:</p> <ul style="list-style-type: none"> › It has a plan for the use of the grant funds; › The construction project is underway; or › Extenuating circumstances require an extension of time to allow the project to be completed. <p>Entities must expend their grant funds and complete Broadband Use and Adoption projects within one year of receiving grant funds from NTIA.</p>
RDOF (Rural Digital Opportunity Fund)	<p>RDOF Phase I Auction ended Nov. 25, 2020. RDOF Phase II dates have yet to be announced.</p> <ul style="list-style-type: none"> • 40 percent of deployment must be complete by end of year three (end of the third full calendar year following funding authorization; this is the end of 2024 for carriers authorized in 2021, and the end of 2025 for carriers authorized in 2022 or later). • 60 percent of deployment complete by end of year four. • 80 percent of deployment complete by end of year five. • 100 percent of deployment complete by end of year six.

5.6 Estimated Cost for Universal Service

As with the timeline for universal service in Section 5.5, the cost estimate for universal service is guided by the principles provided in the [NTIA guidance](#). It also considers other relevant broadband deployment programs which, alongside the BEAD Program, will help Texas achieve universal service. To achieve universal service, as expressed in Objective 1 in Section 2.2 above, with the BEAD Program funding, it must do so within the parameters of the allocation amount, the statutory requirements of the BEAD Program and those of the other relevant programs considered by this Five-Year Action Plan, which are listed in Exhibit 86 below. Other factors that affect the cost of broadband deployment are more dynamic, including the technology deployed, as considered by the EHCPLT along with labor, materials, equipment, market competition, terrain, etc. The accuracy of service measurement is also a factor, as it stands now and into the future as programs are implemented.

Exhibit 86: Program Funding

Funding	Program
\$3.3B	BEAD
\$1.5B	HB 9 (if approved by voters November 2023)
\$500.5M	ARPA-CPF
\$362.6M	RDOF
\$4.4M	ReConnect
\$3.1M	Tribal Broadband Connectivity Program
\$5.7B	Total Public Funding Available

Because the factors may vary widely, especially in a state as expansive and geographically diverse as Texas, the cost estimate for universal service has been examined through the lenses of several models, which look beyond the \$5.7 billion in total public funding available from relevant programs. These estimations present a wide range of outcomes as they relate to subsidy and capital expenditure costs — from \$1.3 billion to \$72.6 billion — a range which in and of itself demonstrates the complex and unpredictable nature of this exercise.

The BDO has conducted a similar exercise at the request of the Texas Legislature. In March 2023, Comptroller Hegar presented an initial estimate to the Legislature that it would cost roughly \$10 billion to deploy broadband throughout the state and close the remaining coverage gaps. A wide variety of considerations went into this estimation, including:

- Deployment cost estimations provided by NTIA in the [Broadband 101 guidance document](#),^{xix} parsing out costs based on deployment type and population density and checking against real individual projects with and without federal subsidy.
- The most current FCC data at the time on unserved and underserved locations.
- Cost increase assumptions over the life of the program, such as inflation, labor and material, especially given the expected increase in nationwide market demand for these resources as a result of the increased public investment.

That said, this methodology was not intended to articulate a well-defined, explicit estimate, but rather to indicate an order of magnitude while signaling substantial uncertainty. There is no clear basis at this time for modifying the Comptroller’s estimate, which lies near the geometric mean of other estimates, suitably disclaimed as a very preliminary approximation.

The BDO anticipates developing a more accurate understanding of cost as more deployment takes place and as more higher quality data are made available, including an August 2023 update to the FCC Broadband Availability Map and data sets. Particularly useful will be the cost estimation data produced by CostQuest Associates, which the BDO anticipates will be made available only slightly too late for inclusion in this Five-Year Action Plan.

5.6.1 Examination of Factors

No cost estimation process can fully address the uncertainties involved in statewide broadband deployment, many of which are described further in Section 4.1: Obstacles and Barriers. Some of the key definitional issues for the purpose of estimating statewide deployment costs include:

- *Technology*
Is the statewide solution cost estimate based on (a) end-to-end fiber, (b) fixed wireless, (c) cheapest technology by CapEx, (d) cheapest technology by subsidy cost, (e) cheapest technology by CapEx that's commercially sustainable or (e) something else?
- *CapEx or Subsidy*
Should the estimate cover the full capital expenditure needed to build the networks, or only the subsidy cost of building the networks, given that in many cases, an ISP will be willing, if necessary, to raise substantial private matching capital in expectation of a reasonable rate of return after construction is complete?
- *Buildout Strategy*
Many decisions in network design affect overall costs as part of trade-offs with aspects of project quality. For example, aerial versus underground distribution of fiber affects costs, with underground typically being more expensive but often more resilient. Aerial distribution can be more expensive if pole attachment fees are high or if pole replacements are required. Among underground options, deeper burial makes networks less vulnerable to disruption, but it costs more.
- *Labor Standards*
Similarly, if an ISP seeks to hire an especially well-credentialed workforce and pay higher than usual wages, this raises project costs. A rigorous cost estimation methodology would need to make assumptions about how all these choices would be made.

Other factors that a rigorous cost estimation would need to consider are not policy choice variables but features of local conditions, which would require rich geospatial data and analytical sophistication to address. In some cases, the data do not exist or are not readily or legally available. In other cases, the data exist and are obtainable, but the analytical challenge of utilizing them would be costly. Such factors include:

Exhibit 87: Cost Estimation Non-Policy Factors for Consideration

Environment	Complementary Infrastructure	Rights-of-Way
<ul style="list-style-type: none"> • Rock vs. soil and the difficulty of boring. • Sloped vs. flat and radio frequency propagation maps. • Climate risks and needs for network hardening. • Special barriers arising from protected forest areas and historic preservation. 	<ul style="list-style-type: none"> • Where utility poles are. • Where poles need to be replaced. • Whether poles have room for new attachments. • Locations of backbone and middle mile file and Internet Exchange Points. 	<ul style="list-style-type: none"> • Locations of railroads. • Locations of private utility easements.

5.6.2 Sources

Broadly, the BDO sought and collected input from many sources to help understand the cost estimation. The Industry Roundtable and Business and Telecom Task Force, engaged through meetings and written assignments, provided qualitative feedback and insights on past program performance and industry challenges. Quantitative data were collected from the Industry Survey and the FCC Map, including the number of unserved (779,379) and underserved (362,879) locations in the state, which may be further affected by the challenge process. Other sources are described below as they pertain to the models they have informed.

5.6.3 Models

Again, rather than attempting to provide a single, presumably unreliable, number for the cost estimate, the BDO offers two models examining past performances of RDOF and USDA ReConnect as analogs for the BEAD Program. The models are intended to bookend a range but are perhaps less useful in providing guidance concrete enough for planning, policymaking and grant program design. A third model from [ACA Connects^{xx}](#) may strike a more practical balance and has been referenced in similar analysis conducted by other state broadband offices.

5.6.3.1 RDOF

The first method is to simply extrapolate buildout costs per location from the RDOF program:

1. The 10-year total for RDOF subsidy is roughly \$363 million.
2. The RDOF project footprints included 310,962 locations.
3. Dividing the total RDOF subsidy by the locations affected yields an average RDOF subsidy per location of \$1,166.
4. By the latest estimates, Texas has 779,379 unserved locations, plus 362,879 underserved locations, totaling about 1.14 million.
5. Multiplying the average RDOF award per location by the number of unserved and underserved locations yields an estimate of \$1.33 billion to achieve universal broadband access in Texas.

When this cost estimation exercise was presented with heavy disclaimers to the Business and Telecom Task Force meeting on July 13, 2023, there was strong pushback from multiple industry spokespersons, who emphasized that RDOF awards had been disastrously meager and that it was important not to repeat that experience. Still, striking the right balance between industry and taxpayer interests is necessary to deploy high-quality broadband in the most cost-effective way.

Voice of Texans

“RDOF was horrible and very misleading. Should have done 50-60 percent support costs but went down to 1 percent.”

- Business and Telecom Task Force Member

It should be noted that the defaults of many RDOF winners to date, with a risk of more in future, cast doubt on whether RDOF projects always benefited the target beneficiaries, or local unserved residents. RDOF was designed for a different era, when federal funding for broadband expansion was much more limited, and the FCC’s policy design choices, skillfully fine-tuned to maximize the number of passings, are no longer suitable. Additionally, costs have risen in ways not anticipated at the time of the RDOF auction in 2020, making it unlikely that industry would again offer such extensive promises of deployment for so little funding. BEAD Program planners must expect to pay considerably more per passing than under RDOF.

5.6.3.2 USDA ReConnect

Another cost estimation exercise was carried out by a Business and Telecom Task Force member^{xxi} after the Task Force organizers requested industry participants to consider providing cost estimations that could be insightful, especially high-cost projects that might indicate upside risks. In this model:

- Three USDA ReConnect projects in Texas are used as a basis for extrapolation.
- The average cost per household within these projects is calculated at \$63,568.

- Using the same FCC count for unserved and underserved at 1.14 million, the cost per location yields an estimate of \$72.6 billion.

While the BDO appreciates this effort and finds it useful in conceptualizing costs in higher cost areas, it cannot endorse the methodology here. The USDA ReConnect experience must be taken in balance with other programs, and a closer examination of sample parameters is needed. Nonetheless, this exercise highlights some upside risks that need to be taken into account. USDA ReConnect reviews project budgets and limits allowable expenses, so these project budgets are indicative of what it is likely to cost to deploy broadband in only *some* parts of the state.

5.6.3.3 ACA Connects and Cartesian

America’s Communications Association (ACA) Connects and Cartesian published a study estimating BEAD Program funding for connecting the unserved and underserved locations of all 50 states. [Version 3.1^{xxii}](#) was published July 2023 and considers the \$3.3 billion in BEAD Program funding allocated to Texas in its approximations for the state. This analysis starts from the FCC’s total unserved (779,379) and underserved (362,879) Texans less locations with “commitments” to receive support from other federal subsidy programs, resulting in roughly 727,000 eligible locations.

Version 3.1 estimates that for Texas, the total allocation amount of \$3.3 billion and a provider match of \$2.1 billion will provide all eligible locations high-speed broadband. This estimation connects 91 percent of unserved and underserved locations with fiber deployment and the remaining 9 percent with alternative technology, ultimately connecting 100 percent of these locations. This amounts to a total capital investment of \$5.4 billion to reach the 727,000 eligible locations across the state. For the purposes of this study, \$9,000 is used as the EHCPLT.

5.6.4 Looking Ahead

The BDO will continue to evolve in its understanding of the cost for universal service. More casual estimates like these provide a rough idea of what to expect when the FCC cost model data are made available. The statewide cost estimates should enable Texas to project what share of locations it can afford to serve with fiber, how to set private match requirement percentages it should aim for and how to set the EHCPLT. For example, if a 100 percent statewide end-to-end fiber solution would require \$10 billion in CapEx, while a 90 percent statewide end-to-end fixed wireless solution would require \$4 billion, the Texas BDO might need to set the EHCPLT rather low to meet some of the broadband needs with fixed wireless, while using the threat of fixed wireless competition to drive higher private capital matches from fiber deployers. While current estimations are built on known factors and the experience of ISPs, many unknowns remain that prevent the BDO from a conclusive cost estimate. Therefore, the BDO will adapt and continue to analyze as the BEAD Program unfolds to determine a firm cost estimation of universal broadband access.

For purposes of public communication and the risk of estimates losing their evidential disclaimers in the process of circulation, the BDO urges caution in representing this analysis as any source of truth or authority on the matter.

5.7 Alignment

This Five-Year Action Plan has been developed with consideration to statewide priorities and existing and planned efforts. These efforts are cataloged below as they may be complementary to, enabled by or

overlap with proposed BEAD Program projects and priorities. The Five-Year Action Plan is intended to build on or complement, not duplicate, these efforts.

5.7.1 Alignment with Existing Broadband Plans

5.7.1.1 State Policy

87th Texas Legislature – House Bill (HB) 5: Established the BDO and set forth the office’s mission to develop a statewide broadband plan, a broadband development map and a broadband grants program. It also established a BDO Board of Advisors to provide guidance to the BDO regarding the expansion, adoption, affordability and use of broadband service and the programs administered by the office.

87th Texas Legislature – HB 1505: Created the Texas Broadband Pole Replacement Program to speed the deployment of broadband to individuals in rural areas by reimbursing a portion of eligible pole replacement costs incurred by certain persons.

88th Texas Legislature – HB 9: Provides a total of \$1.5 billion of state funds to the Broadband Infrastructure Fund, contingent upon voter approval of HJR 125 in November 2023. Funds may be used to administer grants through the BDO, provide state matching funds for the BEAD Program, fund 9-1-1 service and upgrades and fund the Broadband Pole Replacement Program, with a one-time transfer \$75 million to the broadband pole replacement fund.

88th Texas Legislature – Senate Bill (SB) 1238: Provides an update to state broadband policy to help better align with federal guidelines. This includes:

- Updating the definition of "broadband service" to include latency.
- Pivoting the state broadband map from portraying areas eligible for available funding to an analysis tool displaying unserved and underserved locations.
- Increasing the number of broadband serviceable locations eligible to receive funding by moving away from area-based eligibility to location-based eligibility.
- Alleviating conflicts between state statute and federal guidelines by mirroring the BEAD Program favorability toward fiber, providing an exception in high-cost areas.
- Clarifying that only existing federal commitments will disqualify an area from funding effective immediately.

88th Texas Legislature – SB 2119: Requires the BDO to provide broadband service data to the Public Utility Commission of Texas (PUC). Tasks PUC with creating a map displaying areas within the state receiving broadband service and Universal Service Funds for the purpose of reporting areas with duplicative telecommunications support to the Legislature.

88th Texas Legislature – SB 1243: Excludes federal grants received under the IIIA for the purpose of broadband deployment in Texas from the calculation of total revenue used to determine franchise tax liability.

Texas Transportation Code 201.672: Requires the Texas Department of Transportation (TxDOT) to notify broadband providers about highway construction projects and allows providers to collaborate with the department to deploy broadband conduit and other facilities in the rights-of-way during construction projects. Requires TxDOT to give special consideration to projects that are likely to improve broadband access in rural and underserved areas and requires the department to assist political subdivisions in taking advantage of joint trenching opportunities.

5.7.1.2 American Rescue Plan Act (ARPA): Capital Projects Fund (CPF)

BOOT Program: With funds received through ARPA CPF, the BDO launched the BOOT Program. This is Texas’ first competitive broadband grant program aimed at funding infrastructure projects that bring broadband access to end users in eligible areas, which includes 9,600 census codes across the state. Funding made available for the first round of the BOOT Program in the Notice of Funding Availability Request for Applications, closed May 5, 2023, is approximately \$120 million. Applications were open for broadband infrastructure projects in eligible areas designed to deliver, upon completion, service that reliably meets or exceeds symmetrical speeds of 100Mbps to directly enable work, education and health monitoring, including remote options.

TSLAC's IFAIG: In June 2023, the U.S. Treasury approved a program plan through the BDO to support TSLAC’s IFAIG, totaling approximately \$7.8 million in project costs. TSLAC and the BDO collaborated to develop the funding proposal, which will support the infrastructure of libraries across the state. This grant program “will fund improvements to libraries serving rural communities or those that fall below median national income levels. Funds may be used to cover the costs of laying fiber, physical accommodation for broadband and expanded and improved physical space for digital access projects, such as telehealth, job training or classroom labs.” This program is expected to bring improvements to 85 libraries across the state of Texas.

TxDOT El Paso District Safety Rest Area (SRA) Broadband Infrastructure Project: \$6 million in project costs has been requested to support TxDOT to improve internet broadband to El Paso District SRAs, which serve as community hubs and provide high-speed broadband access in a rural area currently facing limited to no high-speed broadband access. TxDOT and the BDO collaborated to develop the funding proposal, which is currently pending a decision from the U.S. Treasury.

Texas Department of Agriculture (TDA) TRHBP: \$22.8 million in project costs has been requested to support the TRHBP, which, if approved will bring reliable broadband to rural hospitals that need it most. The TDA and the BDO collaborated to develop the funding proposal which is currently pending a decision from the U.S. Treasury.

Texas Broadband Pole Replacement Program: Established by HB 1505 (87R), the BDO is currently seeking funding approval from the U.S. Treasury for the Texas Broadband Pole Replacement Program, which will reimburse up to the lesser of \$5,000 or 50 percent of the costs incurred or paid by a broadband provider or pole owner to replace a pole used to deploy eligible broadband service. In March 2022, the BDO adopted [administrative rules^{xxiii}](#) to further guide the program. Funding for this program is currently pending a decision from the U.S. Treasury.

5.7.2 Alignment with the Texas Digital Opportunity Plan

Having a shared goal of closing the digital divide, the BEAD Program Five-Year Action Plan and Texas Digital Opportunity Plan (TDOP) have been developed in tandem, especially as it pertains to input collected through the public engagement campaign described in Section 5. The BDO adopted measures to ensure all Texans are heard and incorporated into the strategy of both plans, with focused attention on covered populations most affected by the digital divide.

The TDOP is intended to satisfy completion of the State Digital Equity Plan as required under the Digital Equity Act and detailed in the SDEPG Program NOFO. As set forth in the BEAD Program NOFO, the state’s vision for the SDEPG and detail for holistic strategies around affordability, devices, digital skills, technical support and digital navigation are captured in the TDOP.

5.7.3 Alignment with Other State Priorities

5.7.3.1 Governor’s Broadband Development Council (GBDC)

Established in 2019 by the 86th Texas Legislature, the GBDC is tasked with researching and monitoring aspects of broadband development, to include the progress of broadband development in unserved areas, the deployment of broadband statewide, the purchase of broadband by residential and commercial customers, and patterns and discrepancies in access to broadband. The GBDC has and will continue to identify barriers to residential and commercial broadband deployment in unserved areas, study technology-neutral solutions to overcome those barriers and investigate industry and technology trends in broadband.

The GBDC will analyze how statewide access to broadband would benefit (1) economic development, (2) the delivery of educational opportunities in higher education and public education, (3) state and local law enforcement, (4) state emergency preparedness and (5) the delivery of health care services, including telemedicine and telehealth.

The council has published an annual report every year on its findings and recommendations to the Texas Legislature. In its 2022 report, the GBDC made the following recommendations:

- Invest strategically in middle mile and last mile infrastructure.
- Ensure consistent laws and regulations.
- Promote digital inclusion initiatives that partner the private sector, CAIs and the local community.
- Promote and expand successful career technical education programs.
- Consider short-term and long-term broadband speed goals.

The BDO appoints one nonvoting member to the GBDC, an appointment currently filled by the BDO Director, which ensures ongoing collaboration and coordination between the council and the BDO.

5.7.3.2 Business and Telecom

Texas Department of Transportation (TxDOT): TxDOT is furthering the goal of connecting Texas through informing and partnering with ISPs on opportunities for broadband expansion. This is a requirement through [HB 2422^{xxiv}](#) enacted by the 86th Texas Legislature, which states that TxDOT must “provide online notice of ongoing and planned highway construction projects for which TxDOT will provide voluntary joint trenching opportunities in the state’s right-of-way for broadband providers.” Providers may partner with TxDOT “to deploy a broadband conduit or other broadband facilities in those rights-of-way,” thus facilitating the expansion of fiber. HB 2422 aligns with the BDO’s prioritization of connecting rural areas, as TxDOT must “give special consideration to broadband deployment that will likely improve access to broadband in rural or underserved communities, thus expanding the last mile.” ISPs will be incentivized to leverage TxDOT in broadband expansion through the BDO’s financial aid, therefore accelerating the success of this “dig once” approach. Further, the BDO ensures alignment with the initiatives of TxDOT through member participation in the Business and Telecom Task Force and Statewide Working Group. This embeds the voice of TxDOT in the establishment of the BEAD Program.

LEARN: LEARN is a consortium of institutions of higher education and K-12 schools across Texas that provides reliable internet connectivity to its members and affiliated organizations. This nonprofit has acted as a catalyst in the expansion of broadband as an ISP, “providing Texas connectivity to national and international research and education networks.” This five-year appointment ensures the expertise of LEARN informs the broadband expansion implemented by the BDO. This will allow the programs to

complement each other while avoiding duplicated efforts, maximizing potential as grants are funneled where it is needed the most.

5.7.3.3 Health

Texas Department of State Health Services (DSHS): DSHS acknowledges in its *2023-2028 Texas State Health Plan*^{xxv} the importance of broadband in furthering Texans’ access to health care services and its current inefficiencies that hinder telemedicine from its full potential. With the health care provider shortage in rural communities across Texas, quality broadband is a necessity for health care access. The State Health Plan expresses this need specifically in rural areas, explaining “without widespread access to broadband, rural households, specifically those who are socioeconomically disadvantaged, risk being ‘left further behind with the increased implementation of telehealth.’” The State Health Plan and the BDO overlap in areas of concern through the acknowledgment that connectivity must improve in rural areas. DSHS identifies the BDO as an enabler of expanding access to health care through grants that will target improving broadband in unserved areas, and the BDO leverages the expertise of the Texas DSHS on the Health Task Force.

Texas Health and Human Services Commission (HHSC): HHSC seeks widespread access to health care including mental health care across the state and recognizes telehealth as a part of that answer. The *All Texas Access Report*^{xxvi} published December 2022 recognizes “the gap in mental health care access between rural and urban Texans may be reduced through telehealth in the future; however, the current gaps in the broadband infrastructure in rural Texas impede telehealth realizing its full potential.” As such, HHSC has recommended the creation of a Broadband Development Council. The *All Texas Access Report* recognizes the fulfillment of this objective with the establishment of the BDO. This initiative is furthered as a representative from HHSC serves as the chair of the Health Task Force and a member of the Statewide Working Group, ensuring that objectives of the BDO align with the needs identified in the report.

Aging Texas Well:^{xxvii} Under HHSC, the Aging Texas Well initiative analyzes the aging populations of Texas and provides a strategy to better serve this demographic. The *2022-23 Aging Texas Well Strategic Plan*^{xxviii} expresses how “there are barriers to reaching isolated older adults, including access to broadband internet and/or adequate technology devices to participate in virtual social engagement options.” Overcoming the obstacle of internet access is necessary for HHSC as addressing social isolation is a priority of the Aging Texas Well Strategic Plan. The BDO is in alignment with Aging Texas Well, understanding that reliable broadband has become a key component for socialization for many older Texans, connecting families via video chat and social media. The BDO will improve this line of communication through increased broadband connection, accelerating the adoption of devices and targeted digital literacy programs focusing on older Texans as a covered population.

Texas Department of Agriculture (TDA): The TDA is responsible for the State Office of Rural Health (SORH), which works toward improving access to health care for the rural communities of Texas. TDA’s *2023-2027 Strategic Plan*^{xxix} explains that “SORH provides technical assistance to rural hospitals to improve quality of care, as well as operational and financial functions. Funds also are distributed to rural hospitals for capital improvements.” The BDO recognizes that reliable broadband is necessary for improved access to health care, which includes infrastructure buildout and the digital skills to utilize telehealth. The BDO’s initiatives complement the mission of the SORH and an ARPA funding request is underway to ensure broadband is advanced in rural hospitals.

5.7.3.4 Education

Texas Education Agency (TEA): Online activities and homework have been woven into school curriculum with the growing need for digital skills when students graduate. The digital divide hinders students from participating in E-learning, creating a gap between the success of students with reliable broadband and those without. In the *Revised and Extended Long-Range Plan for Technology 2018-2025*,^{xxx} TEA states its intended course of action to improve connectivity for students, including “work[ing] with local Educational Service Centers and ISPs to bring down connectivity costs ... to ensure that all campuses meet or exceed the State Education Technology Directors Association's recommendation of 1Gb internet capacity per 1000 students.” There are 20 Regional ESCs^{xxxii} across Texas, serving school districts by improving the performance of students, enhancing the efficiency of school districts and implementing legislative initiatives through an understanding of the unique needs of their region. This regional context provides TEA with needed information to create solutions tailored to the various broadband needs across the state. TEA also intends to develop a survey to understand the current state of technology for students at home and “leverage public and private sector programs to help provide high-speed connectivity outside of school for all students, including those that cannot afford high-speed access.” The BDO understands that broadband is fundamental in developing the skills and furthering the education of students across Texas and has sought the expertise of TEA on this matter through membership on the Education Task Force. To align strategies and avoid duplication of efforts, the BDO has captured assets developed by TEA in support of the objectives mentioned through the DRMT. The goals of TEA will be advanced by the BDO as it focuses efforts on connecting all Texans to broadband, including students across the state in unserved and underserved areas.

Texas Higher Education Coordinating Board (THECB): Broadband is necessary for institutions of higher education to maximize the potential of digital learning, ensuring students graduate workforce ready. As such, THECB established the [Division of Digital Learning \(DDL\)](#),^{xxxiii} which “provide[s] leadership and advocacy for digital learning in higher education and promote[s], sustain[s], and advance[s] a quality digital learner.” This mission is advanced through digital learning grants, such as the Open Educational Resource (OER) Course Development and Implementation Grant Program and the OER Grant Program. Both grants target affordability by encouraging the development and improving the quality of courses that use free online educational materials. Success of the OER initiatives depends on campuses and students having internet access. The BDO complements the mission of the Division of Digital Learning by equipping its students with needed broadband to gain full use of online tools used by institutions of higher education, connecting students to resources that will build a workforce ready for the jobs of tomorrow. Further, a representative from THECB is on the Education Task Force to ensure the BDO has a comprehensive view of broadband-related needs in higher education.

5.7.3.5 Economic and Workforce Development

Texas Workforce Commission (TWC): The TWC highlights the need for innovative solutions to extend services to unserved areas. The *2021-2025 Texas Workforce Commission Strategic Plan*^{xxxiii} outlines the use of mobile units, which “allow customers access to computer stations with internet access to search for jobs, improve their resumes, and receive training.” Upskilling the workforce of all Texans is a shared objective between the BDO and the TWC, and the Economic and Workforce Development Task Force is chaired by a representative from the TWC. The BDO’s funding will extend the outreach of the TWC’s programs by furthering their constituents’ access to internet and connecting Texans to the TWC’s resources that facilitate the adoption of technology.

The TWC serves the workforce needs of Texas through the work of 28 Workforce Development Boards.^{xxxiv} Regional contributions are captured in their current Workforce Solutions Plans, portions of which may complement the BDO’s efforts to expand internet access and enable economic growth.

Expanding internet access is a common priority of the Workforce Solution Plans throughout the state. Many rural areas have deployed the mobile units described in the TWC’s Strategic Plan. This involves buses with computer stations traveling to multiple locations and offering services such as career exploration, training opportunities, classes and orientations for SNAP. Other Workforce Development Boards have internet available in the parking lot of Workforce Centers, providing free internet access to the public. This aligns with the BDO’s effort to expand internet access to unserved and underserved areas. Universal broadband access will extend the offerings of the Workforce Development Boards to a wider audience, allowing the organization to serve a greater number of people.

Workforce Development Boards would also benefit from the BDO’s expansion of internet access as Boards throughout the state are using the internet to advance economic development and opportunities in their regions. Common online offerings include information on job openings, virtual trainings and virtual job fairs. Increased internet availability will enable the Workforce Development Boards’ resources to have a greater impact in equipping the workforce of Texas for in-demand jobs and connecting people to openings, thereby reducing unemployment.

5.7.3.6 Civic and Social Engagement

Texas State Library and Archives Commission (TSLAC): TSLAC identifies a broadband-specific project in its *Library Services and Technology Act Five-Year Plan for Texas*.^{xxxv} The plan “supports initiatives to enhance library broadband connectivity with an emphasis on public libraries in rural and remote communities that fall below national broadband standards.” It is critical for rural libraries to have reliable broadband as these institutions often serve as community members’ only access point to internet connectivity. Alignment of agencies is demonstrated through partnership, as TSLAC “is in active collaboration with the Texas Broadband Development Office in support of projects that will provide broadband access in underserved communities,” and a representative from TSLAC is on the Civic and Social Engagement Task Force and the Statewide Working Group.

With the *Strategic Plan for the Texas State Archives 2021-2025*,^{xxxvi} TSLAC intends to expand its online presence to further its engagement with the public. This initiative includes utilizing social media and developing resources, such as “online content and tools to support K-12 education” and “interactive tools for learning (such as sample curricula, exercises, and student projects) related to the study of Texas history.” The BDO’s objective to expand broadband access complements this initiative of TSLAC by broadening the outreach of this initiative. This will enable engagement of distant audiences, giving all Texans the opportunity to access their state’s history and valuable information.

Texas Department of Information Resources (DIR): The *2022-2026 State Strategic Plan for Information Resources Management*^{xxxvii} offers guidance for Texas agencies on the adoption and implementation of information technology initiatives. This plan states that “investing in infrastructure such as broadband expansion and next generation cellular technology is essential to ensure continuous connectivity.” The BDO understands the construction requirements of broadband buildout and its mission mirrors the cruciality expressed by DIR. The BEAD Program allows for the expansion of infrastructure and award fiber projects that enhance internet resiliency as a “future-proof” solution.

5.7.3.7 Essential Services

Next Generation 9-1-1 Service: Resilient broadband is necessary for this program as it seeks to expand the capabilities of 9-1-1 services. The *Strategic Plan for Statewide 9-1-1 Service and Next Generation 9-*

1-1 Master Plan^{xxxviii} explains that this initiative includes “offer[ing] real time text messages to 9-1-1 to better serve the needs of the deaf and hard of hearing, as well as those ‘callers’ that would put themselves in danger by speaking aloud to a 9-1-1 call taker.” These advancements will be critical for many constituents of 9-1-1 services, allowing the transfer of needed information in times of crisis. For the successful implementation of this program, reliable and resilient broadband must be in place. In supporting the mission, the BDO will administer a one-time transfer of \$155.2 million to Next Generation 9-1-1 from funding received by HB 9. The Essential Services Task Force also has a representative from the Commission on State Emergency Communications, further imbedding the voice of essential services into the BDO’s broadband planning.

Public Utility Commission (PUC): PUC regulates electric, telephone and water utilities across the state. According to the *2023-2027 Public Utility Commission of Texas Agency Strategic Plan*,^{xxxix} its mission is to “protect customers, foster competition, and promote high-quality utility infrastructure.” While this strategy does not involve the expansion of broadband infrastructure, the BDO has incorporated a representative from PUC in the Business and Telecom Task Force, and there is potential for leveraging the commission’s current operations to promote the objectives of facilitating dig requests and pole attachment processes.

5.8 *Technical Assistance*

As program details are being defined in the Initial and Final Proposals, and as NTIA continues to expand upon and clarify program guidance, the BDO may need support from NTIA to ensure successful implementation of the BEAD Program. Such support may include:

- Ongoing clarification of terms and provisions used in NTIA guidance as needed.
- Templates, training and tutorials related to compliance and reporting.
- Guidance on partnerships between providers and using multiple technologies for providing access at one location.
- Guidance on acceptable use of BEAD Program funds allocated for administrative purposes.
- Data resources that may help to clarify critical factors in the grant process:
 - CAIs’ locations, available infrastructure.
 - Subscriber rates, take rates and pricing.
 - Wage rate requirements.
- A model process for geospatial de-conflicting of grant projects that incentivizes ISPs to pursue geographic reach.
- Detailed recommendations on how to assess the commercial sustainability of BEAD Program-related projects.

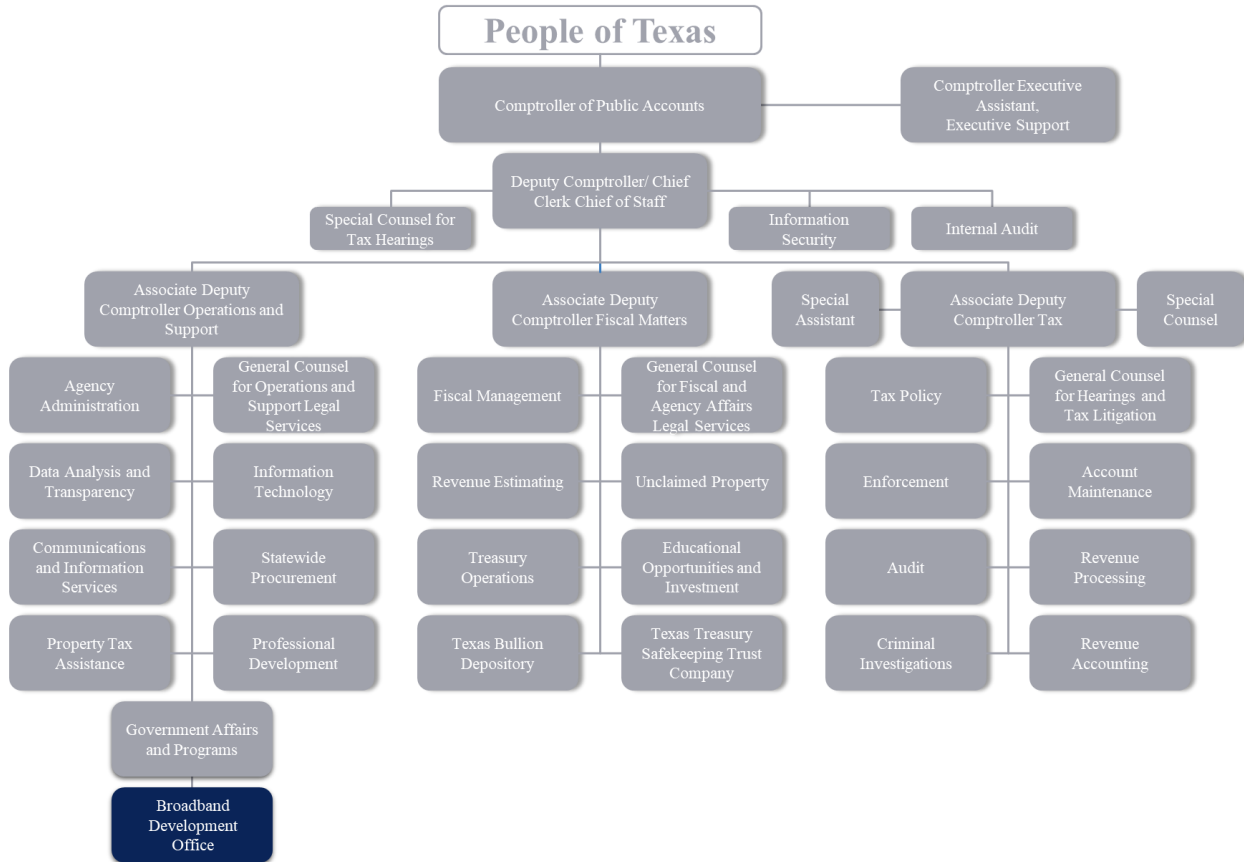
6 Conclusion

The Five-Year Action plan demonstrates Texas' need for the BEAD Program allocation of \$3.3 billion while outlining the priorities and goals that serve as guidance for the BDO. It is critical that the BDO channels funding to address the current needs and gaps as well as the obstacles that have prevented universal broadband access in Texas thus far. To heighten impact, the BDO will continue alignment with other sources of funding and the existing initiatives that are actively working to close the digital divide. To accomplish this, the BDO will leverage its partnerships and the communication channels that have been established in the public engagement model. The BEAD Program will be implemented with increased consideration for covered populations, which have historically been unserved and underserved. The Texas Digital Opportunity Plan is being developed to complement this effort and will offer further direction for the BDO to foster digital opportunity.

Through the planned activities detailed in the Five-Year Action Plan, the BDO intends to achieve universal broadband access and enable increased participation with strategies for affordability and adoption through an efficient competitive grant program. The current digital divide is hindering many Texans today, and its impact on those left behind will only worsen in the future. As expressed by one Task Force member, "the gravity of the digital divide escalates daily as society is increasingly becoming more dependent on connected devices." It is therefore crucial the BEAD Program is managed well and the BDO administers funds effectively to successfully connect Texas.

7 Appendices

7.1 Comptroller's Office Organization Chart



7.2 Regional Working Group Partners

Region	Partner Type	Partner
Alamo	CBO	Golden Crescent Regional Planning Commission
Alamo	COG	Alamo Area Council of Governments
Alamo	Business/Development	Cuero Chamber of Commerce
Alamo	CBO	United Way of the Crossroads
Alamo	Local Government	Karnes County
Alamo	ISP	Hill Country Telephone Cooperative
Alamo	CBO	San Antonio Food Bank
Alamo	CBO	Meals on Wheels Victoria
Alamo	Local Government	City of Edna
Alamo	CBO	Golden Crescent Area Agency on Aging
Alamo	Local Government	City of Saint Hedwig
Alamo	CBO	Community Action Committee of Victoria
Alamo	CBO	Workforce Solutions Golden Crescent

Alamo	Education	ESC Region 20
Alamo	Local Government	City of San Antonio
Alamo	Local Government	Victoria County
Alamo	ISP	FiberLight
Alamo	State Agency	Texas General Land Office
Alamo	Local Government	City of Gonzales
Alamo	Government Association	Victoria Sales Tax Development Corporation President
Alamo	Consulting	Bounceology
Alamo	CBO - Aging	AARP Texas
Alamo	CBO	Gonzales Senior Citizens Association
Alamo	ISP	Jackson Electric Cooperative
Alamo	CBO	Goliad County Rural Transit
Alamo	Business/Development	Hallettsville Economic Development Corporation
Alamo	Local Government	City of Victoria
Alamo	Education	University of Houston - Victoria
Alamo	Local Government	City of Fredericksburg
Alamo	Education	The University of Texas – San Antonio
Alamo	Local Government	San Antonio Housing Authority
Alamo	Education	ESC Region 3
Alamo	CBO	SA Digital Connects
Alamo	Nonprofit	The Arc of San Antonio
Alamo	Library	Wilson County Public Libraries
Alamo	ISP	Infinium Broadband
Alamo	ISP	La Ward Telephone Exchange
Alamo	ISP	Sparklight
Capital	COG	Capital Area Council of Governments
Capital	Business/Development	Smithville Chamber of Commerce
Capital	CBO	Goodwill Central Texas
Capital	Nonprofit	Texans for the Arts
Capital	CBO	Bastrop County Cares
Capital	ISP	Guadalupe Valley Telephone Cooperative
Capital	CBO	Lead for America - American Connection Corps
Capital	CBO	Texas Computer Education Association
Capital	CBO	Communications Workers of America
Capital	CBO	Changing Expectations
Capital	Local Government	City of Austin
Capital	ISP	Colorado Valley Communications
Capital	ISP	Lit Communities Broadband, Inc.

Capital	ISP	Nexstream
Capital	ISP	Heritage Broadband
Capital	ISP	Brightspeed
Capital	Local Government	City of Bastrop
Capital	Local Government	Housing Authority of the City of Austin
Capital	Local Government	Llano County
Central	COG	Brazos Valley Council of Governments
Central	CBO	United Way of Brazos Valley
Central	COG	Heart of Texas Council of Governments
Central	Local Business	Oso Electric Equipment
Central	COG	Central Texas Council of Governments
Central	ISP	Brazos Wi-Fi
Central	ISP	Nortex Communications
Central	ISP	Brightspeed
Central	Local Government	Brazos County
Central	Elected Official	Leon County
Central	Local Government	City of Gatesville
Gulf Coast	COG	Houston-Galveston Area Council
Gulf Coast	Business/Development	Greater Houston Partnership
Gulf Coast	ISP	Comcast
Gulf Coast	CBO	Vaquero River Estates
Gulf Coast	Local Government	Fort Bend County
Gulf Coast	Education	Prairie View A&M University
Gulf Coast	Local Government	Harris County Broadband Office
Gulf Coast	Local Government	Waller County
High Plains	COG	Panhandle Regional Planning Commission
High Plains	COG	South Plains Association of Governments
High Plains	Business/Development	Lubbock Chamber of Commerce
High Plains	CBO	Amarillo Area Foundation
High Plains	Education	ESC Region 16
High Plains	ISP	XIT Rural Telephone Cooperative
High Plains	ISP	West Texas Rural Telephone Cooperative
High Plains	ISP	South Plains Telephone Cooperative, Inc.
High Plains	ISP	Plains Internet, LLC
High Plains	ISP	Poka Lambro Telephone Cooperative, Inc.
High Plains	ISP	Five Area Tele Cooperative
High Plains	ISP	Caprock Tele Cooperative
High Plains	ISP	FiberLight

High Plains	Library	Lubbock Public Library
High Plains	Local Government	City of Lubbock
High Plains	Local Government	City of Amarillo
Metroplex	COG	North Central Texas Council of Governments
Metroplex	COG	Texoma Council of Governments
Metroplex	CBO	City of Plano Library
Metroplex	CBO	City of Fort Worth IT
Metroplex	ISP	Brightspeed
Metroplex	CBO	United Way Metro Dallas
Metroplex	Business/Development	Quinlan Economic Development Corporation
Metroplex	CBO	United Way Grayson County
Metroplex	Local Business	Oso Electric Equipment
Metroplex	CBO	Family Literacy Coalition
Metroplex	Local Government	City of Dallas
Metroplex	Labor	Communication Workers of America
Metroplex	CBO	CARDBoard Project
Metroplex	CBO	Revitalize South Dallas Coalition
Metroplex	CBO	South Dallas Employment Project
Metroplex	CBO	United Way of Metropolitan Dallas
Metroplex	Education	Dallas College
Metroplex	Library	Pottsboro Area Public Library
Metroplex	Local Government	Ellis County
Metroplex	Local Government	City of Waxahachie
Metroplex	Local Government	Kaufman County
Metroplex	Local Government	City of Grand Prairie
Metroplex	Local Government	City of Terrell
Metroplex	Local Government	City of Fort Worth Economic Development
Metroplex	Local Government	City of McKinney
Northwest	COG	West Central Texas Council of Governments
Northwest	Business/Development	City of Coleman, EDC
Northwest	Business/Development	Wichita Falls Chamber (CEO)
Northwest	COG	NORTEX Regional Planning Commission
Northwest	Elected Official	State Representative Stan Lambert's Office
Northwest	ISP	Cable One
Northwest	ISP	Taylor Telephone Cooperative, Inc
Northwest	Local Government	Clay County Judge
Northwest	Local Government	Scurry County
Northwest	Local Government	Jones County Judge

Northwest	Local Government	Mayor of Throckmorton, TX
South	COG	Lower Rio Grande Valley Development Council
South	COG	Coastal Bend Council of Governments
South	Local Government	City of Pharr, Director of External Relations
South	ISP	SmartCom
South	Faith-based Organization	Methodist Healthcare Ministries, Wesley Nurse
South	CBO	DHR Health
South	CBO	Valley Baptist Legacy Foundation
South	ISP	Bluebonnet Fiber
South	Education	The University of Texas - Rio Grande Valley
South	Health Care	RGV 911
South	ISP	Valley Telephone Cooperative
South	CBO	Connect Humanity
South	Local Government	City of Edinburg
South	Local Government	Cameron County
South	Local Government	City of Brownsville
Upper East	COG	East Texas Council of Governments
Upper East	COG	Ark-Tex Council of Governments
Upper East	Business/Development	TexAmericas Center
Upper East	Business/Development	State Bank of DeKalb
Upper East	CBO	GrantWorks
Upper East	CBO	Greater Longview United Way
Upper East	Education	Bullard ISD
Upper East	Education	Atlanta ISD
Upper East	Education	ESC Region 7
Upper East	Elected Official	Congressman Nathaniel Moran's Office
Upper East	ISP	Eastex Telephone Cooperative, Inc.
Upper East	ISP	Conterra Networks
Upper East	ISP	ETEX Fiber
Upper East	ISP	Brightspeed
Upper East	ISP	Eastex
Southeast	COG	Deep East Texas Council of Governments
Southeast	COG	South East Texas Regional Planning Commission
Southeast	Business/Development	Jasper EDC
Southeast	CBO	Texas Forest Country Partnership
Southeast	CBO	T.L.L. Temple Foundation
Southeast	Library	Judy B. McDonald Public Library
Southeast	Education	Nacogdoches ISD

Southeast	Library	City of Onalaska Public Library
Southeast	Local Government	Hardin County
Southeast	Local Government	City of Port Arthur
Upper Rio Grande	COG	Rio Grande Council of Governments
Upper Rio Grande	Faith-based Organization	Sacred Heart
Upper Rio Grande	Business/Development	El Paso Chamber President
Upper Rio Grande	CBO	Borderplex Connect
Upper Rio Grande	Workforce	Borderplex Jobs
Upper Rio Grande	Health Care	Big Bend Regional Hospital District
Upper Rio Grande	CBO	West Texas Food Bank
Upper Rio Grande	CBO	El Paso Community Action Program Project BRAVO
Upper Rio Grande	CBO	Project Vida
Upper Rio Grande	CBO	Hudspeth Community Resource Coordination Group (Region 10)
Upper Rio Grande	CBO	El Paso Community Foundation
Upper Rio Grande	CBO	Federal Reserve Bank of Dallas
Upper Rio Grande	Education	San Elizario ISD
Upper Rio Grande	Education	The University of Texas - El Paso
Upper Rio Grande	Education	Texas A&M Univ Colonias Program Dept Engmt for Sustainability
Upper Rio Grande	Education	Van Horn Education Foundation
Upper Rio Grande	Education	ESC Region 19
Upper Rio Grande	Education	El Paso Community College
Upper Rio Grande	ISP	Big Bend Telecom
Upper Rio Grande	ISP	Dell Telephone Cooperative
Upper Rio Grande	Library	Alpine Public Library
Upper Rio Grande	Local Government	Jeff Davis County & Rio Grande Council of Governments
Upper Rio Grande	Local Government	Hudspeth County
Upper Rio Grande	Local Government	El Paso County
Upper Rio Grande	Workforce	Workforce Solutions Borderplex
West Texas	COG	Concho Valley Council of Governments
West Texas	COG	Tom Green County and the Concho Valley
West Texas	COG	Tom Green County Commissioner
West Texas	Business/Development	Monahans Chamber of Commerce
West Texas	Business/Development	Richard C. Abalos Law Office
West Texas	CBO	Self-employed rural consultant
West Texas	CBO	GrantWorks
West Texas	COG	Permian Basin Regional Planning Commission
West Texas	Business/Development	PMD RE Consulting Services, LLC
West Texas	Education	Angelo State University

West Texas	Education	Greenwood ISD
West Texas	Education	ESC Region 15
West Texas	Education	ESC Region 18
West Texas	ISP	Concho Valley Electric Cooperative
West Texas	ISP	Poka Lambro Telephone Cooperative, Inc.
West Texas	Local Government	Menard County
West Texas	Education	Ector County ISD
West Texas	ISP	Big Bend Telephone Company
West Texas	ISP	Net Ops Comms
West Texas	ISP	Conterra

7.3 Texas Digital Opportunity Asset Inventory

Organization Name	Asset Name	Description
City of Terrell/Riter C. Hulseley Public Library	Hot Spot Lending	The city of Terrell/Riter C. Hulseley Public Library offers 24 hot spots for patrons to check out for a duration of two weeks with one renewal, totaling one month. To ensure availability for more users, devices must be returned for at least 24 hours before the patron is eligible to check out another.
City of Terrell/Riter C. Hulseley Public Library	Free public Wi-Fi	The City of Terrell/Riter C. Hulseley Public Library has free public Wi-Fi access available 24/7.
Tom Green County	Tom Green County Library System	The Tom Green County Library System has internet access for personal mobile devices and access through library provided computers and printers.
Crockett County Consolidated Common School District (CCCCSD) - Ozona	Local	All students in CCCCSD have access to a Chromebook, laptop or iPad.
Austin Urban Technology Movement (AUTMHQ)	AUTMHQ's Awareness-to-Employment Workforce Development Program	AUTMHQ bridges the gap between the Black and Hispanic communities and the tech industry through job placement, career development and networking opportunities. Regardless of your current situation, AUTMHQ provides individuals with a full scholarship to enter the program and become an engaged techie.
Leander Independent School District (ISD)	The Leander Mobile Learning Initiative (mLISD)	The mLISD is the district's optional solution to providing students access to digital content, resources and devices to support anytime/anywhere learning. Students are provided the opportunity to borrow one of Leander ISD's laptops for a nominal non-refundable security deposit or bring a device of their own to use during the school day.
Decatur Public Library	Hotspot lending	Decatur Public Library card holders of 30 days or more can loan a hotspot for two weeks. Hotspots can be renewed if someone else is not waiting for it. Must be brought back to the library to renew so the library knows the patron still has the device.
Rosenberg Library	Wi-Fi ToGo	The Rosenberg Library offers a check-out of internet hotspots for two weeks.

Rosenberg Library	Isle Connect	Supported by the Emergency Connectivity Fund, Isle Connect is a program that provides Chromebooks and internet hotspots to households without reliable computing or internet access.
Rosenberg Library	Computer Lab	The Rosenberg Library has publicly available computer labs, one for each adult, teen and child.
Rosenberg Library	Computer classes	The Rosenberg Library offers a rotating schedule of computing classes, covering Basics of Computing to Microsoft Office classes.
Rosenberg Library	Drop-in service for device help	At scheduled times, customers can bring their personal devices to the Rosenberg Library and staff will help them get connected to library subscription resources.
Atlanta ISD	1:1 Project	Atlanta ISD provides devices for students grades 6-12 to take home and use for various reasons. Teachers employed by the district take home laptops as well.
BiblioTech	BiblioTech	BiblioTech is a public library that circulates hotspots, tablets and Chromebooks. BiblioTech does not permanently distribute any devices.
Texas Center for the Advancement of Literacy and Learning at Texas A&M University (TAMU)	TX Distance Education Call Center	The Texas Center for the Advancement of Literacy and Learning at TAMU operates a technical support call center for Texas Adult Education and Literacy students and instructors that is open 15 hours a day, 7 days a week. Clients can contact the call center via phone, chat, Zoom or Facebook. https://www.txdistanceedhelp.com/
Texas Center for the Advancement of Literacy and Learning at TAMU	TX Adult Education and Literacy (AEL) Digital Literacy Content Standards	The current version of the AEL Digital Literacy Content Standards, Version 2.0, aligns the Texas Adult Education and Literacy Content Standards to the knowledge, skills and abilities needed for success in in-demand entry- and intermediate-level jobs.
Texas Center for the Advancement of Literacy and Learning at TAMU	Free Digital Literacy Online Curricula	The Texas Center for the Advancement of Literacy and Learning at TAMU offers free curricula and resources to improve digital literacy on their website.
CARDBoard Project	EMpowerment Pop Ups	EMpowerment Popups are an initiative created through partnership between the CARDboard Project and Dallas Innovation Alliance. Offerings from EMpowerment Popups include connection to public Wi-Fi for communities, access to services at partner events including job fairs and readiness, and laptops to use. Popups can also provide staff able to assist communities in understanding and registering for federal benefits, such as the Emergency Broadband Benefit program.
CARDBoard Project	Device Loan Program	CARDBoard Project has a Device Loan Program, which provides laptops and hotspots.
Partnership between T-Mobile and Amarillo College	T-Mobile Hotspots	Students that are registered for semester class can check out a hotspot at the Lynn Library on Amarillo College's Washington Street Campus. It is a Samsung A32 device, which provides cellular service as well as internet through a hotspot application on the device. Students must present a picture ID and fill out a form with basic contact information, and staff must be able to verify their registration to check out a device. There is no minimum/maximum limit for credit hours. Students must recheck or return prior to each semester.
Grand Prairie Public Library System	Mobile Hotspots	The Grand Prairie Public Library System checks out mobile hotspots to customers to take home.

Grand Prairie Public Library System	Public Wi-Fi access	Customers of the Grand Prairie Public Library System can use the public Wi-Fi network inside buildings or in the parking lots if access is needed before the library opens.
Grand Prairie Public Library System	Tablets	The Grand Prairie Public Library System allows customers to use tablets with internet access inside their buildings. Tablets are pre-loaded with applications such as Facebook, news services, etc.
Grand Prairie Public Library System	Public PCs	The Grand Prairie Public Library System provides PCs for the public to use inside their buildings.
Grand Prairie Public Library System	In-person computer classes	The Grand Prairie Public Library System offers beginner computer classes at no cost.
Mobile Comunidad	Mobile Comunidad	As a mobile provider of food pantry distributions, social services outreach, a bookmobile and a Little Free Library, the Mobile Comunidad van offers satellite internet in a range of 150 feet around it. Laptops, tablets and other devices and assistance with connectivity are provided.
Mobile Comunidad	Mobile Comunidad	The Mobile Comunidad van visits various communities within Jeff Davis County and makes available loaner laptops, tablets and other devices.
Mobile Comunidad	Mobile Comunidad	The Mobile Comunidad van offers assistance with digital skills during visits to various neighborhoods in Jeff Davis County.
City of Brownsville	Library-Facilitated Device Loan Program and Public Computer Lab	The city of Brownsville Library offers devices to check out for personal use, including iPad and Wi-Fi hotspots, in addition to a public computer lab.
City of Brownsville	American Connectivity Program broadband rate structure	Through the public-private partnership with Lit, the city of Brownsville has negotiated a rate for 100/100mbps at the American Connectivity reimbursement rate.
Region One Education Service Center	Megabyte	Megabyte is a digital skills consortium that allows educators to get training on new technologies that will help them in the classroom.
Combined Arms	Lift Zone	Comcast employees delighted in the launch of a Wi-Fi-connected Lift Zone at Combined Arms headquarters. The Comcast Lift Zone, funded by the media and technology company, allows veterans free access to high-speed, reliable Wi-Fi and the ability to access Wi-Fi with 50 laptops on site. The move is monumental given the digital divide within the military community.
Combined Arms	Texas Veterans Network	For constituents with issues accessing or navigating technology, Combined Arms has an intake team that teaches how to use the computer to connect to free resources.
Old Jail Art Center	No formal name	Public Wi-Fi is available in research areas and other locations.
Lena Armstrong Public Library	Public Access Computers	The Lena Armstrong Public Library provides 12 public access PCs, printing with the first 12 pages free, free Wi-Fi and wireless printing.
City of Onalaska Public Library	Emergency Connectivity Fund	The city of Onalaska Public Library patrons can check out technology for use at home.
Compudopt	Compudopt Connectivity	Compudopt offers a free 5G fixed wireless solution throughout Dallas. Compudopt has a partnership with Walmart to build towers on their rooftops to broadcast directly into low-income and underserved communities. Compudopt also provides multi-dwelling units wiring into apartment complexes.

Compudopt	No formal name	Compudopt offers computer donations (through private funding) to communities across the state. Through a lottery and drive-up system, Compudopt can provide 200-300 within a 2-hour window to recipients who drive up in their own vehicles.
Compudopt	Tech Programs	Compudopt offers a variety of digital skills and technical support programs. For students in grades 1 through 12, Compudopt offers several after-school programs that maximize their potential and strengthen their computer and technology literacy. For older youth and adults, Compudopt offers several programs that focus on digital skills building to accelerate their pathways into economic prosperity. There is also a Compudopt Support Center that acts as a back-end support structure for anybody calling in with device issues and connectivity problems or needs basic digital navigation help.
Kickapoo Traditional Tribe of Texas	Devices for Tribal Education Students	This was a one-time distribution for all Tribal Education Students for virtual learning during the COVID pandemic.
Changing Expectations	Changing Expectations Black Girls in Artificial Intelligence Coding Makerspace for Black Female Middle and High School Students: Youth Creating AI Voice Chatbots for Social Justice	The Black Girls in Artificial Intelligence Coding Makerspace prepares this underserved group to create AI Voice Chatbot Projects for Social Justice Course. It teaches them about the importance of Artificial Intelligence, to learn to "USE" and experiment with AI voice assistants, recommendations engines and facial recognition tools, and learn to "MANAGE" an AI tool named IBM Watson Assistant to create a chatbot that connects to the Changing Expectations voice chatbot web app and that incorporates artificial intelligence.
Changing Expectations	Changing Expectations My Brothers Keeper Coding Makerspace on Artificial Intelligence for Black Male High School Students: Youth Creating AI Voice Chatbots for Social Justice	My Brother's Keeper Coding Makerspace is a program that provides hands-on digital making projects related to Internet of Things security and support for Black and Hispanic young men to learn Python programming, IT fundamentals, cybersecurity and physical computing.
Changing Expectations	Changing Expectations Computer Science for ALL Research-Practice Partnership (CSforALL RPP) on broadening participation of Blacks and Hispanics with disabilities in STEM, tech, computing, and digital skills education and workforce development	CSforALL RPP works to increase Black and Hispanic students with disabilities interest, engagement, learning, knowledge, sense of belonging and intentions to persist in computer science education.
Nesbitt Memorial Library	No formal name	The Nesbitt Memorial Library recently offered a public program on cybersecurity and phishing. When someone asks, the library will offer computer classes that follow the curriculum developed by the Texas State Library Libraries and Literacy Toolkit.
Texoma Council of Governments (TCOG)	Housing Section 8, 911 Addressing, Utility assistance	TCOG provides vouchers or services to help the region.
McAllen Public Library	Job Fair in a Bag	Job Fair in a Bag includes kits consisting of a laptop, hotspot device and additional resources designed to help patrons gain employment.
Texas Department of Criminal Justice	Inmate Tablets	Tablets were deployed to inmates for rehabilitative and behavior modification.

Holliday Public Library	Public Computer usage and Texas Workforce computer station	The Holliday Public Library houses a public computers and Texas Workforce computer station.
Tarrant County Black Historical and Genealogical Society, Inc.	Scanning and archival finding guides	Scanning project is to access historical data from community residents, fraternities, sororities, organizations and business that have contributed to the history of Tarrant County. Archival finding guide will assist the employee with any customer calls for research information in a timely and organized manner.
Paris Junior College	Laptop Loan	Students can request to borrow a laptop through the Laptop Loan.
International Museum of Art & Science (IMAS)	Workshop Wednesday	Workshop Wednesdays feature monthly videos on art techniques, artists and art movements. Viewers will also have the option of picking up a free supply kit for the workshop at the museum beforehand. These instructional videos are also posted on the IMAS YouTube for future reference along with supply kits to extend learning at home.
International Museum of Art & Science	Young Adventurers	Young Adventurers is an early childhood program that fosters decision-making skills, fine motor function, literacy and creative expression through artmaking. These exciting pre-K workshops run 30-40 minutes, including snack time. For ages 3-6 with accompanying adult.
International Museum of Art & Science	Homeschool Days	Homeschool Days are in-person workshops that explore art and science concepts in depth through hands-on activities with an IMAS Educator.
Project Vida Health Center	No formal name	Project Vida Health Center provides affordable rental housing for low- or moderate- income individuals and families with included internet access in the units.
Project Vida Health Center	Best Buy Teen Tech Center	High-speed internet along with a variety of tools including 3-D printer, music recording, computers and printers. This is accompanied by software made available at no charge to high school youth after- and out-of-school times.
Project Vida Health Center	CodeBusters	Computers, printers and high-speed internet are made available to middle school youths under supervision as part of larger after-school program. No charge to participants.
City of Bowie	Bowie Public Library	The Bowie Public Library has public computers and free Wi-Fi connection.
Museum of the West Texas Frontier	Family Day	The Museum of the West Texas Frontier offers a free, once-a month program to the community where families are invited to participate in an educational lesson, typically followed by a craft, activity and/or snack. Family Days are the Museum of the West Texas Frontier's major outreach events to the community, where a variety of topics are focused on including Juneteenth, Cinco de Mayo and Honey.
Museum of the West Texas Frontier	Afternoon Coffee	Afternoon Coffee is a free, once-a month program that is typically geared toward the elderly population. The Museum of the West Texas Frontier hosts an afternoon coffee and snack time where various speakers are invited to share an interesting topic or presentation.
Museum of the West Texas Frontier	Summer Club	The Museum of the West Texas Frontier offers a free, 8-week program during June and July to the community in partnership with other groups in Stamford. The topics vary. The Museum of the West Texas Frontier provides a short lesson or story time, craft, game, snack and other activities.

Alamo Colleges - St. Philp's College	Student Loan Laptop	Enrolled students qualify for a laptop while taking class at Alamo Colleges - St. Philp's College.
Cedar Park Public Library	Public Computer Lab	Cedar Park Public Library has 30 computers for public use.
The Texas Quilt Museum	Pearce Memorial Library and Material Culture Study Center	At the Pearce Memorial Library and Material Culture Study Center, research can take place in a quiet setting among more than 6,400 publications. The Koval Antique Textile Collection allows study of textile samples from 1775-1875. The library and study center are open by appointment. The library oversees a program under which a Bybee Scholar is selected annually by the Museum and the Charles L. and Faith P. Bybee Foundation. The library is also open to the public for research by appointment.
Central Texas College	No formal name	The Central Texas College offers open, high-quality Wi-Fi access across the Central campus.
Windham School District	Embedded in academic and life skills classes	The Windham School District has a module for career/resume building and classroom instruction.
City of Bruceville-Eddy	Citizen's Relief Fund	Citizen's Relief Fund is a utility assistance program.
Community Action, Inc. of Central Texas	Adult Education and Literacy	Community Action, Inc. of Central Texas provides core skills (English to speakers of other languages and preparation for the GED exams to earn the Texas Certificate of High School Equivalency). Digital skills are embedded in those classes. Specific training classes are also provided that include digital skills such as Microsoft Certifications and Intuit QuickBooks (QBO) User Certification. The Community Action, Inc. of Central Texas is working with Austin Community College to provide a more advanced certification course in the near future. Remote instruction (via ZOOM) for both core classes, specialty classes (such as TOEFL prep), and training classes (such as paraeducator and accounting) are also provided.
Arlington ISD	No formal name	Arlington ISD works with their school administrators to target the families most in need for hotspots and devices.
Easter Seals of Greater Houston - BridgingApps Program	Digital Navigator Services	Digital Navigator Services enables Easter Seals of Greater Houston to bring digital inclusion to some of the hardest-to-reach rural groups that could most benefit from support with broadband connectivity, device ownership and digital skills to participate more fully in educational, economic, social and civic opportunities.
The Martin House Children's Advocacy Center (CAC)	Shatter the Silence	The Martin House CAC facilitates a collaborative, multidisciplinary team approach to child abuse investigations, prosecutions, intervention and treatment.
Grand Prairie ISD	District provided one-to-one devices	The district funds provide devices to all enrolled students in the school district.
Harmony Home Children's Advocacy Center	Direct Services	Harmony Home Children's Advocacy Center provides Forensic Interviews, advocacy and victim services.
United ISD	United ISD Chromebooks	United ISD provides students in first, fifth and ninth grade with a Chromebook that they keep for four years.
Alpine ISD	eRate (for Alpine ISD, not end user community members)	Alpine ISD provides hotspots to students on an as-needed basis. This is for the cost of \$40 per month (Department of Information Resources contract) for the district.
Restore Education	Train for Jobs	Students enrolled in a training program during the pandemic and received a device for online learning and a \$15/hour for training.

Restore Education	Digital Skills training	Restore Education has an introductory digital skills program for internet and job search use and email. The second level includes employment and education related training and Microsoft Office training.
Restore Education	MOS specialist certification	Restore Education offers training for students to pass Microsoft Office in Word training.
SHAPE Community Center	Youth Enrichment Programs	Youth Enrichment Programs are out-of-school educational and enrichment programs for children ages 5 through 13. During the school year, hours of operation are from 3 p.m.– 6 p.m., Monday through Friday. During the summer, hours of operation are from 7 a.m. - 6 p.m., Monday through Friday for 8 weeks.
SHAPE Community Center	General Community Resource	The SHAPE Community Center has devices available to the general community any time the youth program is not operating.
Friends of the Maud Public Library	Lendable laptops and hotspots	Friends of the Maud Public Library have a new program that lends laptops and hotspots.
Friends of the Maud Public Library	Computer classes	Friends of the Maud Public Library offer free computer classes to the community three times a month.
Goodwill of North Central Texas	Goodwill Digital Career Accelerator (GCDA)	GCDA has in-person and mobile crews that go out into the community to serve rural areas as well as in-person services. The Opportunity Accelerator encompasses several programs including digital skills through the Goodwill Digital Career Accelerator, job placement through the Job Resource Center and credentials from the Goodwill Leadership Academy.
Goodwill of North Central Texas	Leadership Academy	The Leadership Academy allows participants to earn an industry recognized certification online in less than a year. This program is virtual based.
Goodwill of North Central Texas	North Texas Institute for Career Development (NTI)	The North Texas Institute for Career Development is the technical and career school operated by Goodwill North Central Texas offering commercial driver's license (CDL) Professional Truck Driver Training, Certificate of Forklift Instruction and virtual certifications in the medical and IT fields. NTI believes in empowering students by providing training and meaningful job skills to prepare for the workforce.
Jesus Cantu Medel, M.Ed.	Chicano-Anahuac Digitizing Project	The primary goal of the Chicano-Anahuac Digitizing Project is to digitize rare, printed materials of the 1960s and 1970s periods.
Jesus Cantu Medel, M.Ed.	Chicano-Anahuac Digitizing Program	The Chicano-Anahuac Digitizing Program focuses on rare documents that are digitized.
Tri-County Library	Hotspot program	The Tri-County Library received a grant through the 2021 Relief Grant to purchase hotspots and service for one year. As the year has concluded, the Tri-County Library is seeking funding to keep this program going.
Tri-County Library	Free Computer Access	The Tri-County Library offers 12 computers for patrons and guest use.
Tri-County Library	AWE Learning - Kids computer stations	The Tri-County Library has four AWE Learning computers for children to use at the library.
Tri-County Library	Hotspot check out	The Tri-County Library provides hotspots for check out to local patrons who have an active library card. They are allowed to check out the device for two weeks.

Wichita Falls Area Food Bank	Good Buy Hunger	Good Buy Hunger is a program where the Wichita Falls Area Food Bank purchases food at wholesale and in bulk with donated dollars or government program funds. This program allows the organization to purchase healthier and more nutritious food than it might receive through food donations.
Wichita Falls Area Food Bank	PowerPak 4 Kids	The PowerPak 4 Kids program is a supplemental weekend feeding program for school-aged children to 18 years of age. This program is in 68 schools within the 12-county service area and supplies supplemental food like spaghetti, cereal, crackers, fruit cups, milk and juice.
Wichita Falls Area Food Bank	Kid's Cafe'	Kids Cafe' is an after-school feeding program. Hot meals are delivered to partners such as the Boys and Girls Clubs, Girl Scouts and Camp Fire after-school programs to ensure children have a hot meal after school as it may be the last meal they have until breakfast.
Methodist Healthcare Ministries	Free Clinic at FUMC Victoria	Free Clinic at FUMC Victoria under the direction of Texas A&M residency program in Victoria Texas in conjunction with DeTar Family Clinic is open to public with no insurance monthly.
Methodist Healthcare Ministries	Prescription Assistance	Prescription Assistance offers help in filling out paperwork for patients to receive free one year brand name medications from U.S. manufacturers.
Methodist Healthcare Ministries	Free Diabetic Supplies	The Methodist Healthcare Ministries offers access to free diabetic supplies.
Square Mile Community Development	PATH Program	PATH is a program of Square Mile Community Development that facilitates small business development in neighborhoods challenged by poverty and unemployment. This program provides low- to moderate-income individuals with the tools, coaching and access to capital needed to transform their businesses and communities. As of May 2023, the PATH Program has had access to laptop distribution through the Amarillo Area Foundation. Previously, the program only provided digital support and training for business and financial resources specific to each PATH client's needs.
Square Mile Community Development	The PLACE, Refugee Resource Center	The PLACE is a refugee community center started in 2022 by Square Mile and two partnering nonprofit organizations. This provides access to an in-house computer bank, digital training in fundamental computer skills, digital arts and Word/Excel. Services provided include language acquisition, immigration support, social service support, job acquisition, small business development, cultural literacy, tutoring and homework help, and family support services. Services are provided to adults throughout the week and for youth and children from 3-5 p.m.. Starting in May 2023, The PLACE has access to Dell laptops for families without computer access through the Amarillo Area Foundation.
Solid Foundation Association	Microsoft Word	This is a TechSoup Volume Licensing Program for Nonprofits.
Solid Foundation Association	Microsoft Access	This is a TechSoup Volume Licensing Program for Nonprofits.
Solid Foundation Association	Microsoft PowerPoint	This is a TechSoup Volume Licensing Program for Nonprofits.
Fort Bend ISD	Classroom Tool Set	Each classroom in Fort Bend ISD is equipped with 2:1 (two students to one laptop) from grades 2-12 and 2:1 (one iPad to two students pre-K to 1st). Additionally, at five of the Title 1

		Secondary Schools, there is a 1:1 device to student program. Each teacher has a dedicated laptop assigned to them. Each campus library offers a limited number of devices that can be checked out by students to take home.
Fort Bend ISD	Information Technology Services	The Information Technology Services supports technology for students and Fort Bend ISD staff.
Spring Branch ISD	Affordable Connectivity Program (ACP)	Spring Branch ISD provides information on the district's website on how to access ACP.
Spring Branch ISD	Technology Hotspot Loaner Program	In Spring Branch ISD, students in grades 5-12 who indicate on their annual registration and enrollment forms they do not have home internet are eligible to borrow a hotspot from their school for the academic year subject to parental permission and an annual \$25 technology fee. Fees are waived for certain student populations as required by law (e.g., homeless).
Spring Branch ISD	Technology Device Loaner Program	All students in Spring Branch ISD grades 5-12 are eligible to borrow a device from school for the academic year subject to parental permission, technology fee and completion of Digital Citizenship. The technology fee is waived for certain populations as required by law (e.g., homeless).
City of Austin, Telecommunications & Regulatory Affairs (TARA), Financial Services Department (FSD)	Grant for Technology Opportunities Program (GTOPs) Connect	FSD/TARA City of Austin builds the capacity of the community organizations that advance the digital equity in Austin through the community investment GTOPs (www.gtops.org). GTOPs celebrated its 20th anniversary in 2021 and awards \$400,000 annually in four categories, with one of the categories GTOPs Connect awarded \$50,000 to a nonprofit partner to conduct ACP outreach and sign-ups.
City of Austin, Telecommunications & Regulatory Affairs, Financial Services Department	Awareness Campaign for the Affordable Connectivity Program (ACP)	City staff has circulated print materials, posted information online and sent digital communications and conducted over 100 community outreach events with the purpose of raising awareness about the ACP.
City of Austin, Telecommunications & Regulatory Affairs, Financial Services Department	Community PC Program (CPCP)	The CPCP was created on Oct. 23, 2016, as a pilot program by the city of Austin to refurbish devices retired from city service and make them available to nonprofit organizations. Nonprofit organizations are free to utilize these devices to replace their own aging devices or pass the refurbished devices along to their clients in need of devices.
City of Austin, Telecommunications & Regulatory Affairs, Financial Services Department	Community Technology Access Labs	The city of Austin supports a public access computer lab at the DeWitty Center in East Austin. The number of computer lab locations varies over time, and the city is currently in negotiations to add three additional locations.
City of Austin, Telecommunications & Regulatory Affairs, Financial Services Department	Computer Lab Management and Digital Skills Training Services contract.	Through these contracted services, the city provides digital literacy training services to any Austinite who needs them. Services are currently delivered at 12 locations around the city, with more locations always being evaluated. Topics taught include Computer Fundamentals, Online Safety and Security, Email Fundamentals, Social Media Fundamentals, Smartphone Fundamentals and other topics as the need arises. 1:1 support is also provided to clients in the public access computer labs.
City of Austin, Telecommunications & Regulatory Affairs,	The Grant for Technology Opportunities Program (GTOPs)	GTOPs is a grant administered by the Community Technology focused on improving the community's ability to participate in

Financial Services Department		the digital society. Austin nonprofit groups are eligible to apply for funding or devices through four award pathways.
San Jacinto College District	College Technology Access Program – Wi-Fi internet access	The college provides Wi-Fi cellular internet units to students free of charge.
San Jacinto College District	College Technology Access Program - Comcast Internet Essentials	The college provides information to students who are eligible for the program and assistance in applying. The college covers the student's cost of the program.
San Jacinto College District	Student Loaner Laptop Program	The college provides a laptop free of charge to students who do not have access to a computer. More information is available at https://www.sanjacits.org/technology-access-programs .
San Jacinto College District	Part of technical support	San Jacinto College District provides technical support, individual assistance when needed and webinars.
Northside Independent School District (NISD)	A) TEA Connect Texas (TEACT) program and Emergency Connectivity Fund Programs B) NISD Wireless Hotspot Program	TEACT is a coordinated initiative to leverage the buying power of the state to negotiate discounted high-speed broadband pricing (with ISPs) that the local education agency covered the cost for underserved or unserved community members in need. NISD subsequently filled for reimbursement for the expended TEACT funds via the FCC's Emergency Connectivity Fund program.
Northside ISD	1:1 Student Device Program	Northside ISD is able to provide every student with a device to participate in classwork.
Ector County ISD (ECISD)/Ector County Community Connection	Ector County Community Connection	The Affordable Connectivity Program is an FCC program that provides monthly discounts for internet service and purchase of devices.
Ector County ISD/Ector County Community Connection	ECISD emPOWERed	ECISD emPOWERed offers engagement opportunities throughout the school year including virtual sessions and organized community engagement opportunities. This program builds a toolbox of skills for the adults that support ECISD students.
South Plains College (SPC)	Technology Center	The Technology Center open lounge area is located in the heart of SPC's Levelland Campus and is a quiet place for students to have access to an academically stimulating environment in which to study, complete teamwork or catch up with friends.
South Plains College	Computer Information Systems	The Computer Information Systems program at South Plains College emphasizes technology and information systems as they apply in any workplace.
South Plains College	Technical Graphics and Design	This is an AAS degree that provides graduates with the knowledge and skills in technical drawing on a computer and use of specialized software.
South Plains College	Mathematics, Engineering and Computer Science	SPC has a Mathematics and Engineering Department that provides students the degree requirements in mathematics for majors and minors in the various liberal arts curricula, business administration, education, sciences, pre-professional, engineering and mathematics.
City of Pflugerville, Pflugerville Public Library	Hotspot lending	Card holders of the Pflugerville Public Library can check out hotspots the same way they check out any other library materials.
City of Pflugerville, Pflugerville Public Library	Laptop lending	Cardholders of the Pflugerville Public Library can check out laptops.

City of Pflugerville, Pflugerville Public Library	Free Wi-Fi	Free Wi-Fi is available in the library and parking lot.
City of Pflugerville, Pflugerville Public Library	LinkedIn Learning	LinkedIn Learning is an online resource available to all cardholders of the Pflugerville Public Library.
Victoria College	No formal name	Students at Victoria College with a need are provided access to the following items each semester via checkout: mobile hotspot, laptop (with web cam) or web cam.
Wilson County Public Library	Connectivity Kits	Through a backpack style program, Wilson County Public Library offers a combination of Chromebooks and hotspots for one-week circulation. After the patron has had the hotspot for seven days, staff refers them to Affordable program for assistance.
Austin ISD	Everyone:1	https://www.austinisd.org/technology/everyone Austin ISD provides all students an assigned device for use at school and home.
<i>Identified Texas as the Organization Name:</i>		
	LRC - Learning Resource Center	There is an open access computer center on each campus.
	Locally provided devices and hotspots for students.	The district provides an iPad for each student that is checked out for the school year. Students can take the device home and use it for schoolwork outside the regular school day. Additionally, hotspots are provided for families who express a need.
	Hotspots cataloged under "Library of Things"	Texas offers hotspots that can be checked out for two and three weeks. Some hotspots are funded through ECF. Chromebooks are checked out for two weeks.
	Library of Things	The library provides nontraditional library items for the public to check out. For technology, web cams, hotspots, laptops and Chromebooks are provided. These are checked out by patrons with their library cards. Patrons must have an account that has been established and in good standing for at least six months.
	Resound	TX has used Resound for Wi-Fi in the past but currently does not have Wi-Fi access for the public as TX is relocating.
	General offerings	TX provides free Wi-Fi and access to some computers and devices for artists and farmers when they are on the campus doing work, a residence, a workshop or a festival.
	Faith P. and Charles L. Bybee Library and Study Center	This is a non-lending library with five computers to access the library database.
	Hotspot	Library patrons can check out a hotspot with a library card and signed agreement stating they need the hotspot. They can keep for two weeks and must renew.
	Library service	There are 25 computer stations in the library that are available to anyone to use.
	Ancestry	Visitors can research for ancestries.
	C2 HF / C2Health	This is a 30-day Care Transitions program for patients with heart failure, sepsis or other cardiovascular diagnosis.
	Dobie West Performing Arts Theatre	This is a public venue for performance and a small museum.
	Adult Computer literacy skills classes	Texas provides free classes for adults to improve at using the computer. Classes include providing instruction to computer non-users.

	Hotspots	20 hotspots are available for checkout.
	No formal name.	Crown Castle is TX's ISP. Aruba access points (both interior and exterior) provide the connectivity that students and families can access in and around all district buildings (schools and auxiliary sites).
	LTE Nitro-CBSD	The district in partnership with the city of San Antonio installed 14 LTE towers districtwide. This provided 400 families with a router that gives the household Internet access via band 48 channel.
	T-Mobile - Project 10Million	Project 10Million is an initiative aimed at delivering internet connectivity to underserved student households. The district has been working with T-Mobile since 2021 to provide a free Wi-Fi hotspot and 100GB of free data to any student that needs access.
	1:1 Student to Device	The district supports a 1:1 student to device ratio. Younger students (grades PreK, kindergarten and first) are assigned an iPad and older students (grades 2-12) are assigned a Chromebook.
	Career and Technology Courses - CTE Program	The district offers approved Statewide Career and Technical Education Programs of Study.
	ACP	TX promotes this federal program at all its schools during open house events.
	Meals on Wheels	Meals on Wheels provides hot meals to individuals with disabilities 60+.
	Rural Transit	Rural Transit provides public transportation.
	Outpost Resale Shop	Outpost Resale Shop resells clothing and household items to the community.
	Digital Divide	There is a device checkout process through the library by students who need a device or internet access.
	Digital Citizenship	This includes online educational resources for parents and students.
	Hotspot lending	TX lends hotspots to patrons.
	Hotspots	TX loans hotspots to library patrons.
	Digital Connections	This is a grant through Local Initiative Support Cooperation. TX will have laptops, hotspots and personnel go to parts of the county and conduct computer classes. TX will also be holding classes at the library along with Teach-me-tech, which is a one-on-one session. At the end of the year, TX will begin to allow the laptops to be checked out
	Digital Connections	TX has a grant to assist with tech and computer skills.
	1:1 Devices	TX provides 1:1 devices for our students and staff, as well as internet at school.
	Technology Courses	TX has technology courses throughout the grade levels to teach children how to use technology.

7.4 References

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