Texas Digital Opportunity Plan

DRAFT – November 2023

TEXAS BROADBAND DEVELOPMENT OFFICE

Texas Comptroller of Public Accounts

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1. Executive Summary

The Texas Broadband Development Office (BDO), under the Texas Comptroller of Public Accounts, developed the Texas Digital Opportunity Plan (”the plan”) to complement broadband infrastructure programs already underway in the state, including the Bringing Online Opportunities to Texas (BOOT) program and the state’s Broadband Equity, Access, and Deployment (BEAD) program.

With a greater focus on the affordability, adoption and safe and effective use of the internet, the plan aligns with National Telecommunications and Information Administration (NTIA) requirements identified in the State Digital Equity Planning Grant Program’s Notice of Funding Opportunity (NOFO) and incorporates feedback from a thorough public engagement initiative.

The purpose of this plan is to guide non-infrastructure-related digital opportunity investments and to position the BDO to receive Capacity Grant funds from NTIA to deploy over the next five years, with a focus on closing the digital divide in Texas and ensuring every Texan has the skills and abilities to fully and safely utilize broadband access provided by the BEAD program and other sources of funding.

Image credit: Stock Images, Microsoft

The plan sets the BDO’s vision and goals for digital opportunity in the state, assesses the current state of access and barriers to digital opportunity, outlines how

the BDO will collaborate with stakeholders to address challenges and describes the strategies and actions the BDO will take to realize its vision and goals.

Texas' Vision for Digital Opportunity

Improve quality of life and promote economic growth by enabling fast, reliable and affordable broadband connectivity for all residents and businesses of Texas, promoting universal broadband adoption and providing access to digital skills development.

Achieving this vision will advance state policy priorities and efforts in six areas:

- **Economic and Workforce Development:** The Texas economy will grow stronger and more resilient through a more skilled workforce from farms to factories, offices to community anchor institutions, with talent staying and growing in communities to support further economic development.
- **Education:** Texans will have access to a higher quality education no matter where they live, with the opportunity for educational advancement in any stage of life, through online learning opportunities.
- **Health:** Recognizing that broadband adoption is a “super determinant” of health, widespread broadband adoption will result in improved personal and community health across Texas.
- **Accessibility of Essential Services:** Texans will have greater access to the resources and tools they need, ensuring effective use of public resources and safer and more resilient communities – especially during extreme weather events.
- **Civic and Social Engagement:** Texans will be more connected to one another, their communities and their government with improved tools to participate in civic processes.
- **Business and Telecommunications:** The Texas telecom industry and business community will grow stronger as more Texans adopt internet services and gain digital skills for the future.

The BDO will measure and track outcomes in these priority areas in five categories of measurable objectives, as defined by the NTIA: (1) the availability of, and affordability of access to, fixed and wireless broadband technology; (2) the online accessibility and inclusivity of public resources and services; (3) digital literacy; (4) awareness of, and the use of, measures to secure the online privacy of, and cybersecurity with respect to, an individual; and (5) the availability and affordability of consumer devices and technical support for those devices.

The BDO conducted a statewide digital opportunity planning process, including 26 public engagement meetings; 37 stakeholder focus groups with outcome area leaders, regional leaders and members of eight "covered populations" (aging individuals, incarcerated individuals, individuals with disabilities, individuals with limited English proficiency, low-income households, racial and ethnic minorities, rural residents and veterans); and engagement with close to 15,500 Texans in total. Through this planning process, the BDO defined the following specific goals and key performance indicators (KPIs) that will guide implementation efforts:

Goal 1: All Texans have access to reliable, affordable broadband internet service at home.

- KPI 1.1 – Increase the percentage of Texans with reliable broadband subscriptions available in their homes.
- KPI 1.2 – Decrease the percentage of individuals who cite cost as a barrier to home internet service.
- KPI 1.3 – Increase the percentage of Texans who are aware of and enrolled in the Affordable Connectivity Program (ACP) or other low-cost or subsidized internet service options.

Goal 2: All Texans have access to affordable computers and other internet-enabled devices in their home, with corresponding technical support services.

- KPI 2.1 – Increase the percentage of Texans who have home access to affordable internet-enabled devices other than a smartphone.

- KPI 2.2 – Increase access to technical support for more Texans with internet-enabled devices.

Goal 3: All Texans have a broad foundation of digital literacy skills and access to a continuum of digital skills development programs.

- KPI 3.1 – Increase the percentage of Texans who have basic digital literacy skills.
- KPI 3.2 – Increase the availability of digital literacy programs and services.
- KPI 3.3 – Increase the percentage of Texas workers who have the level of digital skills training jobs require.

Goal 4: All Texans feel safe online and are familiar with cybersecurity and online privacy measures.

- KPI 4.1 – Increase the percentage of Texans who are familiar with cybersecurity and online privacy measures.

Goal 5: Increase the percentage of Texans who utilize the internet for public resources and services.

- KPI 5.1 – Increase the percentage of Texans who utilize and understand how to use the internet for public resources and services.

These statewide goals are intended to advance digital opportunity for all covered populations. Access to reliable broadband service is the first step toward achieving these goals and the focus of billions of dollars in infrastructure investment in the state. Nonetheless, as demonstrated through the needs assessment and asset inventory completed for this plan, even after reliable broadband service is available, Texans need greater options for affordability and access to a continuum of digital literacy training and skills development to make the most of the internet.

This plan includes an assessment of the state's current baseline as related to each specific goal and KPI. The data demonstrates that needs are not equal across populations and geographies, and thus the plan requires approaches tailored to the communities most in need. For example, rural and economically disadvantaged

communities demonstrate a higher overall need for services and support than other parts of Texas. The Upper Rio Grande and South Texas regions experience the highest rates of digital disparity[1] coupled with limited organizational resources[2].

Among other priorities, this plan seeks to address the need for:

- Foundational digital literacy skills for all Texans and especially low-income households, individuals with limited English proficiency and individuals with disabilities.
- Language and culture-specific resources for individuals with limited English proficiency, who have some of the highest digital disparities among covered populations.
- Expanded access to devices other than smartphones, especially for covered populations such as low-income households.
- Improved adoption of online privacy and cybersecurity measures and increased awareness of online privacy and cybersecurity among individuals with limited English proficiency.
- Improved online accessibility and inclusivity of public resources and service among covered populations.
- Reliable, affordable broadband connections for rural residents and organizations implementing community-based programs.
- Increased adoption of broadband service beyond mobile data plans for low-income households and rural residents.
- Enrollment support for low-cost internet services and subsidy programs like the ACP.
- Support for organizations to engage communities in existing programs.

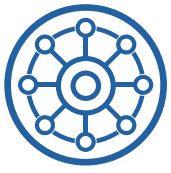
[1] See map from Microsoft's Digital Equity Data Dashboard
[2] See Digital Resources Mapping Tool Survey (DRMTS)

The BDO will advance the following four primary strategies to address these needs and other barriers identified in this plan and to realize its goals and overall vision:

Strategy 1: Partner With and Fund Statewide Organizations. The BDO will work with a range of state agencies and other statewide partners already actively involved in advancing digital opportunity across the state, ensuring that work is supportive of realizing the goals of this plan. The BDO will partner and collaboratively plan with agencies such as the Texas Workforce Commission (TWC) and Texas State Library and Archives Commission (TSLAC), with the goal of enhancing and expanding those agencies' programs through funding available from the state's forthcoming Capacity Grant.

Strategy 2: Fund Local Partners. Broadband adoption, digital literacy, device access and many other aspects of digital opportunity require locally based, culturally appropriate efforts. Leadership should come from the same communities that these efforts aim to serve; trust, safety and confidence are essential components of digital opportunity. The BDO will allocate a portion of its Capacity Grant to create a digital opportunity grant program, comparable to the BOOT program for broadband infrastructure, to fund local initiatives addressing the gaps in digital opportunity for covered populations and underserved regions.

Strategy 3: Promote Internet Adoption. The BDO recognizes that building the physical infrastructure to connect unserved and underserved Texans to broadband is only one component of expanding broadband adoption. Therefore, the BDO will promote activities to support Texans in signing up for and using broadband service as it is made available across the state – benefitting Texans, multiple statewide priorities and the telecom industry through an expanded customer base.



Strategy 4: Maintain a Living Digital Opportunity Plan. The BDO envisions this plan as a living document, to be updated through continued research. The BDO has gathered extensive baseline data,

established relationships with stakeholders and residents and gained a firm understanding of the current needs and barriers of Texans statewide – regionally and among covered populations. The BDO aims to build upon this foundation and make this plan a sustainable resource to promote digital opportunity statewide by measuring progress while continuing to collect critical data to enable the state and its local partners to advance and iterate impactful programs.

By delivering on these strategies over the next five years, Texas will make the most of broadband infrastructure investments and sustainably advance the statewide vision of digital opportunity for all Texans.

Glossary of Key Terms

Acronyms and Key Terms

ACP	The Affordable Connectivity Program, a program administered by the Federal Communications Commission (FCC), providing subsidies for low-income, tribal and/or other qualifying households to access home broadband subscriptions and/or internet-enabled devices.
ACS	The American Community Survey, an annual demographic survey conducted by the United States Census Bureau.
Affordable	Broadband service is affordable if the cost to maintain always-on, high-speed service in the home or a business is not a barrier to subscription. Devices are affordable if the cost for a device that meets a household or business' needs is not a barrier.
BDO	Texas Broadband Development Office
BEAD	NTIA's Broadband Equity, Access, and Deployment Program, which will provide $42.45 billion nationally for broadband infrastructure planning and implementation.
BOOT	The Bringing Online Opportunities to Texas Program: Texas' first competitive broadband grant program aimed at funding infrastructure projects that bring broadband access to end users in eligible areas of the state.
Broadband	Always-on, high-speed internet service. The FCC's benchmark for high-speed internet is at least 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads.
CAI	The state's Initial Proposal for BEAD funding defines a community anchor institution as a school, library, health clinic, health center, hospital or other medical provider,

	public safety entity, institution of higher education, public housing organization (including any public housing agency, HUD-assisted housing organization or tribal housing organization) or community support organization that facilitates greater use of broadband service by vulnerable populations, including low-income individuals, unemployed individuals, children, incarcerated individuals and aged individuals.
CBO	A community-based organization representing and serving a given community or segment of a community. Often structured as nonprofit organizations, CBOs strive to improve community well-being.
DEA	The Digital Equity Act, established as part of IIJA, provides $2.75 billion to establish grant programs that promote digital inclusion nationwide. Includes the State Digital Equity Planning Grant Program, which supports the process by which U.S. states and territories develop plans to advance digital opportunity.
Digital Literacy	This document uses the NTIA NOFO's definition of Digital Literacy which refers to the skills associated with using technology to enable users to find, evaluate, organize, create and communicate information.
DRMTS	The Digital Resources Mapping Tool Survey is an online inventory of organizations and entities that currently provide or may be interested in providing digital opportunity-related programs, plans and services within Texas. The DRMTS was widely disseminated over a four-month period, from April to August 2023, and leveraged the BDO public engagement model to reach state, county and local agencies, councils of governments (COGs), community-based organizations (CBOs), nonprofits, faith-based groups, community anchor institutions (CAIs), and private sector companies. The BDO conducted desktop research to

	supplement survey responses with publicly available information on organizations.
Digital Opportunity	Digital opportunity is the full set of conditions required to achieve digital access for all Texans, including widespread affordable and reliable broadband internet, high-quality device access, digital skills training and cybersecurity awareness.
FCC	The Federal Communications Commission, administrator of the ACP and developer of the National Broadband Map.
IIJA	The 2021 Infrastructure Investment and Jobs Act. The IIJA included the Broadband Equity, Access, and Development (BEAD) Program and the Digital Equity Act (DEA).
ISP	Internet service provider.
KPI	Key performance indicator.
NOFO	Notice of Funding Opportunity: specifically, NTIA's Notices of Funding Opportunity for the BEAD and State Digital Equity Planning Grant Programs.
NTIA	The National Telecommunications and Information Administration, administrator of the BEAD and State Digital Equity Planning Grant Programs.
Public Engagement Model	The model established by the BDO to develop a plan that represents all regions and covered populations from across the state. The model enabled extensive public input through online and paper surveys and regional meetings with communities in all 12 regions of the state, and by engaging state agencies, nonprofit entities and industry leaders in meetings of the Statewide Working Group and Priority Area Task Forces.
The plan or TDOP	The Texas Digital Opportunity Plan.

Texas Digital Opportunity Survey	Texas Digital Opportunity Survey is a tool to identify the digital opportunity barriers affecting Texas households, such as the lack of infrastructure, digital literacy, affordable service and access to devices. Open to all Texas residents over the age of 18 and available from April – August 2023, the survey was accessible in English, Spanish, Vietnamese and Mandarin. Paper PDF versions in English and Spanish also were available. The Digital Opportunity Survey received valid responses from residents of 250 Texas counties, representing individuals from all covered populations.

NTIA Covered Populations

Term	Alternate Term	Definition
Persons who are 60 years of age or older	**Aging individuals**	Survey respondents who selected “60 years of age or older” in the Preliminary Demographic Information section of the Digital Opportunity Survey.
Individuals with disabilities		Survey respondents who selected “Living with a disability” in the Preliminary Demographic Information section. Outside the context of survey respondents, this document refers to “disability” as defined in the NTIA NOFO: “Disability—The term “disability” means, with respect to an individual— 1. A physical or mental impairment that substantially limits one or more major life activities of such individual; 2. A record of such an impairment; or 3. Being regarded as having such an impairment.”
Individuals with a language barrier, including those who are English learners or have low literacy levels	**Individuals with limited English proficiency**	Survey respondents who selected “English language learner and/or have difficulty understanding English” in the Preliminary Demographic Information section.
Individuals in households below 150% poverty	**Low-income households**	Survey respondents who selected that their total annual household income before taxes is “Less” than the 150% federal poverty threshold in the Preliminary Demographic Information

		section. The 150% poverty line threshold shown to each survey respondent was based on their self-reported household size. The NTIA NOFO refers to this population as “Covered Household:” “Covered Household—The term “covered household” means a household, the income of which for the most recently completed year is not more than 150 percent of an amount equal to the poverty level, as determined by using criteria of poverty established by the Bureau of the Census.”
Members of a racial or ethnic minority group	**Racial or ethnic minorities**	Survey respondents who selected one or more race categories other than “White” in the Preliminary Demographic Information section.
Individuals residing in rural areas	**Rural residents**	Survey respondents who selected “Rural area resident” in the Preliminary Demographic Information section. Outside the context of survey respondents, this document refers to “rural” or “rural areas” as defined in the NTIA NOFO: “Rural Area—The term “rural area” means any area *other than* – 1. A city or town that has a population of greater than 50,000 inhabitants; 2. Any urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants; and 3. In the case of a grant or direct loan, a city, town, or incorporated area that has a

	population of greater than 20,000 inhabitants.”
Veterans	Survey respondents who selected “U.S. veteran” in the Preliminary Demographic Information section. Outside the context of survey respondents, this document refers to “veteran” as defined in the NTIA NOFO: “Veteran—The term “veteran” means a person who served in the active military, naval, air or space service and who was discharged or released therefrom under conditions other than dishonorable.”

Underserved Populations

Term	Alternate Term	Definition
Immigrants		Survey respondents who selected “U.S. immigrant” in the Preliminary Demographic Information section.
Members of Tribal Communities	**Tribal communities**	Survey respondents who selected “Member of a Tribe or Tribal Community” in the Preliminary Demographic Information section. Outside the context of survey respondents, this document refers to “tribal communities” as defined in the NTIA NOFO, unless specified otherwise: “The term “Indian Tribe” means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act, 43 U.S.C. § 1601 et seq., which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.”
Unhoused individuals		Survey respondents who selected “Unhoused or experiencing homelessness” in the Preliminary Demographic Information section.

2. Introduction & Vision for Digital Opportunity

2.a Vision

The BDO established this vision for digital opportunity in the state:

> *Improve quality of life and promote economic growth by enabling fast, reliable and affordable broadband connectivity for all residents and businesses of Texas, promoting universal broadband adoption and providing access to digital skills development.*

To achieve this vision, the plan articulates the BDO's strategy for improving broadband access and affordability, expanding access to devices and digital skills to reach these goals and, importantly, achieving the vision of improved quality of life and economic growth through widespread broadband adoption. This is the first plan of its kind in the state.

In 2022, the BDO established quantifiable broadband goals in the **Texas Broadband Plan** (Broadband Plan): (1) connecting more than 1 million households to high-speed broadband; (2) improving connectivity for more than 5.6 million households; (3) improving affordability of broadband for 3.6 million households; and (4) assisting 3.8 million Texans with digital literacy challenges. This plan builds upon these goals.

The BDO built this vision for digital opportunity on statewide engagement, aligned the vision with the NTIA's Measurable Objectives, with the purpose of driving toward key state priorities and efforts in six outcome areas:

- **Accessibility of Essential Services**
- **Business and Telecommunications (Telecom)**
- **Civic and Social Engagement**
- **Economic and Workforce Development**

- **Education**
- **Health**

Aligning the plan with these priority areas ensures the BDO's ability to achieve the vision of improved quality of life and economic growth through digital opportunity. As articulated in *Chapter 4, Collaboration and Stakeholder Engagement,* the BDO consulted heavily with experts not only in the fields of telecom and broadband access, but also in health, education, civic life, emergency management and other domains that rely upon ubiquitous, reliable broadband access and digital tools to achieve goals and positively impact Texas communities.

2.b Texas Context

2.b.i Creation of the Broadband Development Office

The BDO was established by House Bill 5 (HB 5), 87th Legislature[3]. Codified as Chapter 490I, Texas Government Code, the legislation charges the BDO with the following:

- Creating an accurate state broadband map.
- Establishing a long-term, statewide plan that addresses strategies and goals for expanding access to and further adoption of broadband service – See the **Broadband Plan.**
- Awarding grants or other financial instruments to meet the goals of the Broadband Plan.
- Engaging in outreach to communities regarding the expansion.
- Addressing barriers for future expansion efforts.

HB 5 also established the Broadband Development Office Board of Advisors (board) to provide guidance to the BDO regarding the expansion, adoption, affordability and use of broadband service and BDO's related programs and initiatives.

[3] House Bill 5. (2021). H.B. 5, 87th Leg., (Texas). https://capitol.texas.gov/billlookup/text.aspx?LegSess=87R&Bill=HB5

Initially formed in 2021, the board is composed of 10 members, with the Texas Comptroller serving as chair. A staff representative of the BDO serves as a non-voting member. The remaining members represent various stakeholder and interest groups and are appointed by the offices of the Texas Governor, Texas Lieutenant Governor and the Texas Speaker of the House.

2.b.ii Creation and Implementation of the Texas Broadband Plan

The BDO is responsible for executing the work laid out in HB 5 and subsequent legislation, in service of its vision of improved quality of life and economic development through digital opportunity. The BDO created the Broadband Plan to serve as a "foundation upon which the Texas Legislature, the BDO and other stakeholders can build actionable programs."

As part of the planning process, the BDO conducted listening sessions across the state's 12 economic regions and established baseline data on connectivity and adoption across the state. The BDO intends to use this baseline data and the data gathered as part of the digital opportunity planning process to measure progress toward reaching the goals articulated in this plan.

The Broadband Plan established guiding principles for programs deploying future state and federal funding to expand broadband in Texas and close the digital divide:

- Use both existing and emerging funding sources and investments toward areas unserved or underserved broadband service.
- Encourage connectivity for anchor institutions, including schools, libraries, hospitals and other medical providers, public safety entities, institutions of higher education, community/region support organizations and local governments.
- Promote coordination, cooperation and communication among private and public infrastructure owners; communities; schools; nonprofits; project partners; and local, regional, state, tribal and federal governments.

- Remain technology-agnostic – or neutral about the type of technology used – while embracing all avenues to quality broadband service for Texas residents, businesses, institutions and communities.
- Remove barriers to residential, business and institutional broadband adoption in coordination with infrastructure investments.[4]

The BDO has launched programs and initiatives to address the immediate next steps identified in the Broadband Plan:

1. **Establish a broadband-focused, federally compliant grant program.** The BDO was awarded $363 million in Capital Projects Fund (CPF) funding by the U.S. Treasury to support a last mile connectivity program in January 2023[5]. The BDO made $120 million of these funds available for broadband infrastructure grants through the BOOT program in March 2023. As of November 2023, the BDO is evaluating accepted applications and anticipates making award decisions by early 2024.
2. **Publish a broadband availability map.** The BDO released the initial **Texas Broadband Development Map** in January 2023.[6]
3. **Manage recurring coordination and communication opportunities across stakeholder groups.** The public engagement model described in *Chapter 4* addresses this Broadband Plan priority, while gathering valuable input and insight from stakeholder groups to inform this Digital Opportunity Plan.

[4] Texas Broadband Development Office. (2022, June 15). *Texas Broadband Plan 2022*.

[5] Texas Comptroller of Public Accounts. (2023, January 27). *Texas Comptroller's Office Awarded $363 Million in Federal Grants to Increase Access to Affordable, High-Speed Internet.* https://comptroller.texas.gov/about/media-center/news/20230127-texas-comptrollers-office-awarded-363-million-in-federal-grant-money-to-increase-access-to-affordable-high-speed-internet-1674761318664

[6] Texas Comptroller of Public Accounts. (2023, January 12). *Comptroller Glenn Hegar Releases Texas Broadband Development Map Identifying Areas Eligible for Funding.* https://comptroller.texas.gov/about/media-center/news/20230112-comptroller-glenn-hegar-releases-texas-broadband-availability-map-identifying-areas-eligible-for-funding-1672261638679

2.b.iii Texas Legislation Relevant to Digital Opportunity

On June 2, 2023, following approval by the 88th Legislature, Gov. Greg Abbott signed bipartisan legislation concerning broadband access and adoption across the state. The legislation enacts notable changes affecting the BDO, including changing the focus of the Texas Broadband Development Map from displaying program eligibility toward serving as a multi-purpose analysis tool that will enable the BDO to direct funds where they are most needed. Critically, instead simply of identifying eligible areas, the map pivots to displaying each broadband serviceable location as served, unserved or underserved based on minimum achievable speeds, and mandates that the map display additional information to reflect the availability of broadband service throughout the state. At the same time, the legislation updated state definitions and program requirements to more closely align with federal guidelines.

These changes will enable the BDO's broadband and digital opportunity programs to target all unserved and underserved locations, not just certain areas, throughout the state. The legislation also includes direction to prioritize fiber technology while still supporting the deployment of other technologies in appropriate circumstances.

In November 2023, Texas voters approved a state constitutional amendment to create the $1.5 billion Broadband Infrastructure Fund, under the Comptroller's office.

The Comptroller's office estimates that deploying broadband throughout the state and closing remaining coverage gaps will cost close to $10 billion.[7] If approved, the constitutional amendment could unlock funding to augment the $3.3 billion NTIA has awarded to Texas under the BEAD Program.[8] This historic investment, provided by the 2021 Infrastructure Investment and Jobs Act (IIJA), will finance critical infrastructure projects across the state to increase access to reliable, high-speed internet and help close the broadband availability gap in Texas. Texas received the largest BEAD funding allocation in the nation because Texas has the most unserved

[7] Carver, J. L. (2023, May 28). Final approval given to bill allocating $1.5 billion to broadband expansion in Texas. *The Texas Tribune.*

[8] Texas Comptroller of Public Accounts. (2023, June 29). *Texas Comptroller Glenn Hegar announces commitment of federal funding to address digital divide.* https://comptroller.texas.gov/about/media-center/news/20230629-texas-comptroller-glenn-hegar-announces-receipt-of-federal-funding-to-address-digital-divide-1687964343943

addresses in need of reliable connectivity. Additional state funds will further enable the work required to bring connectivity to these locations.

2.c Alignment with Existing Efforts to Improve Outcomes

2.c.i Existing and Future Plans

Because the Broadband Plan sets forth existing digital opportunity conditions and needs as well as suggestions for how the state may use IIJA funds, this Digital Opportunity Plan references and incorporates the Broadband Plan's findings and areas of focus.

Chapter 4, Collaboration and Stakeholder Engagement outlines the strategy and methodology used to ensure widespread engagement in the digital opportunity planning process. The engagement strategies described in that chapter, including the Digital Resources Mapping Tool Survey (DRMTS), helped to identify existing plans related to digital opportunity. The BDO has cataloged and tracked these existing plans in *Appendix A: Local Digital Opportunity Plan Tracker.*

The engagement methodology served to deepen relationships with statewide organizations driving digital opportunity work, including TSLAC. Its March 2023 report, **Texas Public Libraries: Serving Communities to Enhance Digital Literacy**, informs this plan, in particular its implementation recommendations around improving digital literacy and technical skills and improving cybersecurity and online privacy awareness for all Texans.

The BDO intends for this plan to complement existing digital opportunity plans, not supersede them. *Chapter 5: Implementation* presents strategies to work with existing statewide and local efforts so that the plan and subsequent funding may build the capacity of and enable organizations to advance digital opportunity throughout the state. The BDO also envisions a "living plan" that will incorporate ongoing stakeholder feedback, update data and allow for changes in state priorities for the economy, workforce, education, health, civic and social engagement and essential services.

2.c.ii Measurable Objectives and Goals

The NTIA establishes five measurable objective categories:

1. **Improve availability and affordability of fixed and wireless broadband technology.**
2. **Ensure access to affordable consumer devices and technical support.**
3. **Improve digital literacy and technical skills.**
4. **Improve cybersecurity and online privacy awareness.**
5. **Improve access to public resources and essential services online.**

In this plan, the NTIA's measurable objective categories provide a framework for BDO's digital opportunity strategy and desired outcomes. While the state has existing plans and strategies for broadband as well as the six outcome areas (health, education, etc.), the BDO applies the NTIA's measurable objective categories across all efforts as guidelines for improving digital opportunity in the state and among all covered populations.

Chapter 3: Current State of Digital Opportunity provides baseline data to describe existing conditions for each measurable objective category, identifying assets and needs to drive progress toward each goal.

Specifically, it provides information on current progress on these objectives in Texas, both as related to covered populations and by region.

Under each of NTIA's measurable objective categories, the BDO sets forth goals to advance digital opportunity. These goals are for the entire state and are intended to advance digital opportunity for all covered populations.

NTIA Measurable Objective Category 1: Broadband Availability and Affordability

- **Goal 1:** All Texans have access to reliable, affordable broadband internet service at home.

NTIA Measurable Objective Category 2: Device Availability and Affordability and Technical Support

- **Goal 2:** All Texans have access to affordable computers and other internet-enabled devices in their home, with corresponding technical support services.

NTIA Measurable Objective Category 3: Digital Literacy

- **Goal 3:** All Texans have a broad foundation of digital literacy skills and access to a continuum of digital skills development programs.

NTIA Measurable Objective Category 4: Online Privacy and Cybersecurity

- **Goal 4:** All Texans feel safe online and are familiar with cybersecurity and online privacy measures.

NTIA Measurable Objective Category 5: Online Accessibility and Inclusivity of Public Resources

- **Goal 5:** Increase the percentage of Texans who utilize the internet for public resources and services.

2.c.iii Covered Populations

In total, 24.8 million Texans – 86 percent of the state's population – belong to one or more covered populations.[9]

Table 1: Covered Populations in Texas[10]

Covered Population Group	Share of Texas Population
Members of a racial or ethnic minority group (racial or ethnic minorities)	**58%**

[9] U.S. Census Bureau. (n.d.). Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/webappviewer/index.html?id=c5e6cf675865464a90ff1573c5072b42

[10] U.S. Census Bureau. (n.d.). Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/webappviewer/index.html?id=c5e6cf675865464a90ff1573c5072b42; American Community Survey 5-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html

Covered Population Group	Share of Texas Population
Individuals with low literacy levels	**28%**
Individuals in households below 150% poverty (low-income households)	**23%**
Individuals residing in rural areas (rural residents)	**21%**
Persons who are 60 years of age or older (aging individuals)	**18%**
Individuals with disabilities	**11%**
Individuals with a language barrier, including those who are English learners or have low literacy levels (individuals with limited English proficiency)	**7%**
Veterans	**5%**
Incarcerated individuals	**1%**

This plan also considers the digital opportunity experiences of immigrants, members of tribal communities and unhoused individuals as population groups uniquely impacted by the digital divide.

2.c.iv Alignment with State Outcome Areas

As part of the digital opportunity planning process, the state formed six task forces aligned with the six outcome areas listed below. Each task force included representation from individuals belonging to or organizations serving at least one covered population. *Chapter 4, Collaboration and Stakeholder Engagement* details group structure and participants. The following sections explore findings from the task forces and how digital opportunity goals under the measurable objective categories will impact and interact with the broader efforts and goals of the state's six outcome areas:

1. **Economic and Workforce Development**
2. **Education**

3. **Health**
4. **Accessibility of Essential Services**
5. **Civic and Social Engagement**
6. **Business and Telecommunications (Telecom)**

2.c.iv.1 Economic and Workforce Development

The BDO's vision for this outcome area is: **The economy will grow stronger and more resilient by having a more skilled workforce from farms to factories, offices to community anchor institutions, with talent staying and growing in communities to support economic development.**

According to the **National Skills Coalition,** 54 percent of Texas jobs require digital skills training beyond that received in high school or an equivalent level of education, yet only 45 percent of Texas workers have those skills. Texas' ability to connect its workforce to quality employment opportunities and bolster long-term economic development in the state requires widespread deployment of high-speed and affordable broadband and the devices and skills to access that service. The BDO convened the Economic and Workforce Development Task Force, including representatives from the TWC, the Federal Reserve Bank of Dallas, Goodwill, Texas Farm Bureau and other organizations, to identify how broadband expansion can better serve current and future workforce needs in Texas.

> "Internet access could support education advancement and access to more jobs that you can either work remotely or people can stay in their community. [We have a] more locally attractive workforce and more of a locally attractive place to do business if the internet is in place."
>
> – Public Meeting Attendee, Bryan, Texas

Task force discussions revealed broadband reliability and affordability and access to digital skills training as primary concerns for the development of Texas' workforce. Job search activities are increasingly moving to online platforms and many jobs require at least foundational digital literacy. Digital skills are central to the long-term economic development and competitiveness of Texas – local, national and international employers do more business and therefore provide more jobs in regions with higher concentrations of digitally competent workers.[11] This phenomenon crosses sectors: Small businesses and the agricultural industry – particularly in the rural areas – need further digital skills resources to remain competitive and grow or retain their workforce.

> "Increased access to broadband would really help our agricultural community. Whether it's keeping a family farm in business or larger agriculture being able to innovate with the rest of Texas and the world."
>
> – Public Meeting Attendee, Lubbock, Texas

In addition to task force discussions, the BDO received input from twenty-six entities self-identifying as workforce development organizations responded to the DRMTS, out of a total of 368 valid responses. Other DRMTS respondents concerned with workforce issues include libraries, community colleges, economic development agencies, city/county/state governments, councils of governments (COGs), nonprofit organizations and labor organizations.

Alignment with existing statewide priorities/goals:

Texas Broadband Plan 2022

Better connecting Texans to employment opportunities and digital skills education and attracting more businesses to Texas are important considerations in the Broadband Plan. The Broadband Plan also explores the supply chain and

[11] BDO Economic and Workforce Task Force Meetings (2023)

organizational capacity concerns related to broadband deployment. As the BDO fosters further inter-agency and public-private partnerships toward the implementation of the Digital Opportunity Plan, it will advance the Broadband Plan's goal to close the digital divide.

In alignment with economic and workforce development, the Broadband Plan calls for these goals:

- Close the digital divide as it "prevents Texans from accessing services necessary to health, education, employment and safety."
- Foster coordination across community colleges, technical schools, universities and organizations to develop workforce development programs.
- Assess supply chain challenges and make mitigation recommendations.

Texas Workforce Commission Strategic Plan 2023-2027:

The TWC outlines the following goals for 2023-2027:

- **Goal 1: Ensure the Texas workforce system supports employers and allows business and industry to thrive.**
    - Provide timely, relevant workforce solutions that enable employers to find and retain the qualified workers needed to be successful and globally competitive.
    - Engage with industry to address current and future workforce development needs.
- **Goal 2: Ensure a skilled workforce is prepared and equipped to fill critical in-demand jobs, both now and in the future.**
    - Assist workers in obtaining the skills necessary to fill critical occupations, as identified by industry.
    - Connect a qualified workforce with employers.
    - Prepare a skilled workforce to fill critical jobs in the future.
- **Goal 3: Provide exceptional customer service and support to all workforce system stakeholders.**

- Deliver quality customer service to every customer who interacts with the workforce system.
- Seamlessly integrate programs and coordinate services and make them easy for all workforce system stakeholders to access and navigate.
- Maintain the highest levels of integrity, accountability and efficiency across the workforce system and TWC programs.

Texas Workforce Commission Adult Education and Literacy Strategic Plan Fiscal Years 2021-2026:

TWC's vision for adult education and literacy (AEL) is "To deliver education, workforce, and postsecondary education and training outcomes for students through innovative service delivery and partnerships that result in statewide alignments, efficiencies, and accountability."

TWC's Strategic Plan outlines the following goals for fiscal years 2021-2026:

- **Goal 1: Increase outcomes**
  - **Objective 1:** Expand capacity to reach new customers with barriers to employment through enhanced outreach and recruitment.
  - **Objective 2:** Increase postsecondary education and training enrollments and support completions.
  - **Objective 3:** Enhance AEL curriculum, standards and skill assessment options to boost employability and college readiness of AEL students.
  - **Objective 4:** Enhance student retention supports to increase program completions.
- **Goal 2: Address demand with increased access**
  - **Objective 1:** Enhance student-service models with immediate and responsive AEL program options.

- **Objective 2:** Advance a statewide service delivery approach to better serve AEL students.
- **Objective 3:** Increase employer, business community and community-based organization roles in AEL.
- **Objective 4:** Increase student access to digital technology, including broadband connections and distance learning applications.
- **Objective 5:** Support retention and development of adult educators to address AEL demand for rigorous instruction.

- **Goal 3: Enhance customer experience with increased coordination**
  - **Objective 1:** Align TWC AEL workforce development service policies to support the One Workforce vision and enhance the workforce customer experience.
  - **Objective 2:** Support development of career pathway ladders with AEL and its workforce system partners.
  - **Objective 3:** Strengthen coordination and alignment with Texas Higher Education Coordinating Board.
  - **Objective 4:** Strengthen coordination and alignment with Texas Education Agency (TEA).
- **Goal 4: Improve program effectiveness**
  - **Objective 1:** Develop uniform data collection methods that enhance performance reporting and inform progress in meeting program goals and objectives.
  - **Objective 2:** Develop data collection and analysis methods to address multifaceted service delivery structures and diverse customer populations and to ensure accurate and accountable data collection, management and security.
  - **Objective 3:** Increase the quality, accuracy and speed of data sharing across agencies to support the Tri-Agency Workforce Initiative.

- **Objective 4:** Promote the value of AEL through evaluation and research opportunities.

The Digital Opportunity Plan will support TWC's Strategic Plan's first two goals by connecting more people to online job searching and application websites and ensuring that the workforce receives the digital skills training needed to prepare for an increasingly digital employment landscape. In addition, increased access to technology, internet, training and support as a result of this plan will support the TWC AEL's Strategic Plan's first two goals and directly advance objective four in goal two. The Economic and Workforce Development Task Force successfully convened TWC, other nonprofits and higher-education institutions, and that is one step toward fostering smoother collaboration between Texas' workforce system stakeholders as outlined in TWC's third goal.

Internet affordability is one of the main barriers to accessing reliable internet, and this is ultimately a quality-of-life issue for the Texas workforce. Better internet can connect Texans to better jobs and, in turn, better housing, healthcare, community and other benefits. Providing more affordable internet options, fostering trust in the government and providing quality jobs in the broadband industry (e.g. fiber technicians) will be critical to achieving broadband expansion in Texas. The BDO is currently conducting work with the TWC to further assess workforce needs and alignment with this plan. *Chapters 4 and 5* provide further detail on this work. The final version of this plan will include the results and recommendations of the BDO's engagement with the TWC.

2.c.iv.2 Education

The BDO's vision for this outcome area is: **Texans will have access to a higher quality education no matter where they live, with the opportunity for educational advancement no matter what stage of life they're in, as a product of the learning opportunities that the internet has to offer and that schools can deliver online.**

The mission of TEA, the state agency charged with overseeing primary and secondary public education, is that every Texas child is prepared for success in

college, career or military.[12] Broadband access and adoption play an essential role in this effort, ensuring that students can participate fully in virtual learning environments, find and apply for jobs and gain new career skills.

The BDO convened the Education Task Force to discuss how internet availability, device availability and digital skills impact Texas students, educators and school communities. These discussions revealed that while many educational institutions provide access to digital devices to students at little to no cost, they often struggle to bear the high expense of replacing outdated devices. Task force members suggested that educational device deployments be paired with technical support, helping students and families adopt basic device skills, cybersecurity awareness and the necessary software for virtual learning. The Education Task Force also discussed the need for digital navigators in schools, barriers to ACP enrollment among adult students, internet security concerns on campus and the lack of capacity in smaller schools to apply to grants and provide ongoing support.

Out of 368 valid responses in the DRMTS, 94 entities self-identified as K-12 schools, community colleges or public/private universities.

[12] TEA 2023-2027 Strategic Plan https://tea.texas.gov/system/files/2023-2027-TEA-Strategic-Plan_0.pdf

Alignment with existing statewide priorities/goals:

Operation Connectivity:

Operation Connectivity is a partnership that includes Gov. Greg Abbott, the Dallas Independent School District and TEA to connect all of Texas' 5.5 million public school students with both a device and reliable internet connection. This three-phase program was launched in May 2020.

Between May and December 2020, Operation Connectivity supported the acquisition of more than 4.5 million devices for students, resulting in a 1:1 ratio of device access per student. Texas leveraged almost $1 billion of funding to support this initiative, including federal, state and local sources.[13]

Image credit: Compare Fibre via Unsplash

[13] Texas Education Agency. (n.d.). What is Operation Connectivity? Texas Education Agency. http://23.98.222.250/

2.c.iv.3 Health

"The area has disparities in healthcare, particularly telehealth, with limited broadband access. It's already difficult to see specialist doctors. There's a big gap that just stays and gets worse without access to the internet."

– Public Meeting Attendee, Lubbock, Texas

The BDO's vision for this outcome area is: **Texans' personal and community health will improve as a result of easier access to health services and a recognition that broadband adoption is a "super determinant" of health.**

The health and wellbeing of Texans is an important state priority that is closely linked to the ability to access broadband and digital opportunity. Telemedicine, for instance, is key to delivering healthcare services to aging individuals, individuals with disabilities, rural residents and other Texans who may have difficulty accessing healthcare in-person. Telemedicine can also facilitate online disease management services, electronic health records, home monitoring and other vital healthcare services.

To discuss the intersection of digital opportunity and the health and wellbeing of all Texans, the BDO convened the Health Task Force. Task force discussions immediately identified the lack of affordable, reliable internet and digital skills as common barriers to accessing telehealth services in Texas. While community centers and healthcare centers provide some space and devices needed for telehealth, technical support helping patients set up devices and/or troubleshoot remains an unresolved gap.

While Texans – especially those belonging to covered populations – face significant gaps and barriers when accessing telehealth services, the Health Task Force identified several existing assets and successful models for leveraging technology to improve health outcomes. One example is the Pottsboro Public Library. Located in rural Grayson County, Pottsboro Library's private telehub, equipped with blood pressure cuffs and other medical equipment, enables patients to access healthcare

appointments remotely. To facilitate telehealth and other digital opportunity initiatives, Pottsboro Library employs digital navigators, with the support of the TSLAC. Another example is the newly established Texas Tech University Health Sciences Center (TTUHSC) Institute of Telehealth and Digital Innovation. The Institute aims to establish healthcare hubs at the Center's campuses and create a "hub-and-spoke" model to continue to serve surrounding rural communities via telehealth and existing local healthcare resources. Their programs provide healthcare to 108 counties in West Texas.[14]

Alignment with existing statewide priorities/goals for health:

All Texas Access Report

In December 2022, the Texas Health and Human Services Commission (HHSC) published the **All Texas Access Report,** in collaboration with local mental health authorities and local behavioral health authorities. Focused on developing strategies to strengthen mental health care access and crisis care while reducing costs to local governments providing services to people experiencing a mental health care crisis (including costs associated with transportation, incarceration and emergency room visits of people with mental illness), the report articulates regional and statewide goals and strategies that leverage internet-enabled technologies. For example, equipping rural law enforcement with technology for remote mental health evaluation can allow for resolution of a case on the scene in some cases, sparing all involved of unnecessary costs and hardship.

[14] Cisneros, S. (2023, September 26). Digital Health Takes Center Stage TTUHSC Announces New Institute of Telehealth and Digital Innovation. *TTUHSC Daily Dose*. https://dailydose.ttuhsc.edu/2023/september/telehealth-institute-ribbon-cutting.aspx

While the All Texas Access Report does not articulate a plan for technology or digital opportunity, a successfully executed Digital Opportunity Plan will support HHSC in advancing its goals.

Image credit: National Cancer Institute via Unsplash

2.c.iv.4 Accessibility of Essential Services

The BDO's vision for this outcome area is: **Texans will have access to the resources and tools they need to ensure that public resources are used most effectively and that our communities are safer and more resilient, especially in extreme weather events.**

> "For the organization's agencies, it's a lack of digital skills... [Employees] are social workers, not IT people. My job at the state level is to make them effective and bring resources to them. They need to be more reachable to the populations they are serving. A person will bring an application in person – they will be missing a document and need to drive home to get it and bring it back. Online would be an easy fix for this but they don't have the literacy."
>
> – Essential Services Task Force Member

Texans need internet access, devices and skills to complete essential daily tasks and to ensure their safety, security and quality of life. The BDO convened the Essential Services Task Force to contribute the perspectives of public safety and poverty relief organizations, including state and municipal agencies, nonprofit organizations and emergency management entities, to the digital opportunity planning process.

The Essential Services Task Force found:

Texans need strong, reliable internet, access to appropriate devices, digital literacy and technical assistance. Access to the internet and devices that Texans know how to use are critical for residents to access essential services such as emergency announcements and 9-1-1, in addition to other public resources aimed at low-income individuals, seniors, veterans and incarcerated individuals.

While statewide goals and plans focused specifically on increasing access to essential services are limited to existing programs like the **Texas Technology Access Program (TTAP)** increase access for people with disabilities and aging individuals through assistive technology tools and services. The **Inmate Tablet Program** enables the Texas Department of Criminal Justice to deliver information and services to incarcerated populations. Further, 93 organizations reported to the DRMTS that they provide publicly accessible online services.

Image credit: Stock Images, Microsoft

2.c.iv.5 Civic and Social Engagement

The BDO's vision for this outcome is: **Texans will be more connected to one another, their communities and their government, with improved tools to participate in civic processes.**

The BDO put together the Civic and Social Engagement Task Force, including representatives from libraries, state agencies, government associations, community-based organizations (CBOs), faith-based organizations, local governments and COGs and other entities concerned with the overall well-being and quality of life of all Texans. These organizations play a critical role in broadband expansion and

adoption across Texas, given their deep community roots and awareness of community needs.

Task Force discussions revealed that internet affordability is a significant barrier for low-income households, aging individuals and rural residents in Texas. Additionally, the task force highlighted the need for digital skills training programs that consider the specific needs of people with disabilities or language barriers. Overall, the task force expressed a desire for more support and facilitation from local governments as well as funding for community anchor institutions – schools and libraries in rural areas, in particular – to expand broadband access across the state.

Civic and social engagement organizations made significant contributions to the DRMTS, with 75 responses from libraries, 70 from community support or community-based organizations, and 55 from K-12 schools. From the public sector, city (63), county (45) and state (39) government respondents were the most common respondents to the DRMTS.

Alignment with existing statewide priorities and goals for civic and social engagement:

Texas Broadband Plan 2022:

The guiding principles of the Broadband Plan focus on connecting anchor institutions to one another and promoting coordination, cooperation and communication among public, private and nonprofit entities in Texas. These efforts are aligned with the plan's goal to better serve the covered populations with critical digital access. By better understanding the needs of organizations that work directly with communities in Texas, the BDO can provide efficient and targeted solutions to the digital divide in Texas.

2.c.iv.6 Business and Telecommunications

The BDO's vision for this outcome is: **The telecom industry and business community will grow stronger through the implementation of this plan as more Texans adopt internet services and become more productive in their work.**

The Business and Telecom Task Force engages representatives from satellite operators, national carriers, local and rural internet service providers (ISPs) and others. To gather additional input, the BDO conducted a Texas Internet Service Provider Survey (ISP Survey) between March and June 2023. The ISP Survey received responses from 79 unique broadband providers.

Results from the ISP Survey showed that while 55 percent of participating ISPs in Texas serve all covered populations, the majority of ISPs do not provide programs promoting access to digital devices, digital skills training or digital opportunity funding such as subsidies to improve broadband affordability.

Almost two-thirds of respondents to the ISP Survey participate in ACP, and 64 percent advertise it. Only 33 percent of respondents have discounted plans targeted specifically at low-income households, other than ACP and Lifeline.

Almost a quarter of ISP respondents offer programs that support or provide access to computing devices. Of those offering such programs, 38 percent offer discounted or free computing devices for public computing centers; 38 percent offer grants, gifts, or other financial contributions to other entities to reduce the cost of devices; 29 percent offer free or reduced cost devices to eligible broadband subscribers; and 24 percent refurbish old devices for sale at a reduced cost.

Almost half of ISP respondents have programs that support or promote digital skills and technical support. Of those that have programs, 60 percent offer in-person support for individuals; 23 percent offer in-person support for groups; 20 percent offer digital navigators, and 17 percent offer in-person online classes.

A quarter of ISP respondents provide digital opportunity funding to other organizations such as grants, loans or other assistance for programs operated by other organizations that promote digital inclusion in Texas. Of those who provide support, 82 percent provide funding for broadband access and affordability; 53

percent provide funding for digital skills and technical support; 35 percent provide funding for device access; and 24 percent provide funding for digital navigators.

Discussion in the Business and Telecom Task Force meetings revealed that ISPs face barriers to participating in and/or achieving results in broadband expansion and adoption initiatives, including the high cost of installing fiber in rural areas and lack of internal organizational capacity. Nonetheless, 85 percent of ISP Survey respondents are definitely or probably interested in receiving BEAD grants to expand their coverage footprint, showing promise in leveraging ISPs to start closing the digital divide.

Alignment with statewide priorities and goals:

Texas Broadband Plan 2022

The Broadband Plan suggests that low competition among ISPs – particularly in rural areas – creates a barrier to internet affordability across the state. At the time of the Broadband Plan's publication, in one Texas area there was only one provider providing service to 4.4 million households.[15] Legislation governing broadband may not keep up with rapidly changing consumer needs and technological developments. The BDO hopes to leverage conversations with ISPs to bring the right legislative changes and promote effective broadband expansion, including addressing barriers to internet affordability like low competition. As part of the Digital Opportunity Plan, the BDO can extend these efforts by further coordinating with ISPs to identify and address broadband deployment and other affordability barriers, and foster public-private partnerships to expand broadband coverage and affordable internet options.

[15] Texas Broadband Development Office. (2022, June 15). Texas Broadband Plan 2022.

BOOT Program

BOOT is Texas' first competitive broadband grant program aimed at funding infrastructure projects that bring broadband access to end users in eligible areas of the state. Funded broadband projects must be capable of minimum speeds of 100 megabits per second (Mbps) for downloads and 20 Mbps for uploads and can scale to 100/100 Mbps. The program is funded by Capital Projects Funds through the U.S. Treasury. The BDO accepted applications for BOOT through May 2023 and is currently reviewing challenges made during the application challenge period. Between April 3, 2023, and May 5, 2023, the BOOT program received 191 applications seeking more than $180 million in funding. The BDO will announce awards for the first round of BOOT funding by early 2024.

BEAD Grants

BEAD grants will fund eligible broadband infrastructure projects that help expand high-speed internet access and use. BEAD grants will support various functions and stages of broadband access and adoption projects, including but not limited to infrastructure deployment, outreach, capacity building and planning. The grants will concentrate on initiatives in priority areas, including both unserved locations (areas with access to internet speeds lower than 25/3 Mbps) and underserved locations (areas with access to internet speeds greater than 25/3 Mbps but lower than 100/20 Mbps).

ACP

Under ACP, eligible households can receive a monthly discount of up to $30 for internet service (or up to $75 per month for households on tribal lands). Eligible households looking to purchase a digital device, such as laptop, desktop computer or tablet, can also benefit from a one-time discount of up to $100 when purchasing from participating providers. To qualify for the one-time device purchase discount, households must contribute an amount between $10 and $50 toward the purchase price.

As of September 2023, approximately 1.6 million households in Texas are enrolled in ACP, about 38 percent of all ACP-eligible households in Texas,[16] which is slightly lower than the national ACP enrollment rate of 41 percent. The South Texas region has the highest ACP enrollment rate with 41 percent of all households participating in the program, followed by the Upper Rio Grande (29 percent) and Southeast (19 percent) regions. Over the last 12 months, Texas ACP enrollment has increased steadily.[17]

Sixty-five percent of respondents to the ISP Survey participate in ACP, and 64 percent advertise it. Only 33 percent of ISP Survey respondents offer discounted plans targeted specifically at low-income households, other than ACP and Lifeline.

Lifeline/Tribal Lifeline Program

Lifeline is an FCC program that aims to make communications services more affordable for low-income households. It provides discounts on eligible monthly phone, broadband internet service or bundled voice-broadband packages from participating providers. As of April 2023, 276,500 Texas households are enrolled in the Lifeline program – just 9 percent of the 3 million Lifeline-eligible households in the state,[18] lower than the national enrollment rate of 17-25 percent as of 2021.[19]

[16] Universal Service Administrative Co. (n.d.). ACP enrollment and claims tracker. https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/

[17] EducationSuperHighway. (n.d.). Affordable Connectivity Program Enrollment Dashboard. https://www.educationsuperhighway.org/no-home-left-offline/acp-data/#dashboard

[18] Universal Service Administrative Co. (n.d.). Lifeline Participation. Program Data. https://www.usac.org/lifeline/resources/program-data/#Participation

[19] EducationSuperHighway. (n.d.). No home left offline. https://www.educationsuperhighway.org/no-home-left-offline/

Forty-four percent of respondents to the ISP Survey participate in the Lifeline Program or the Tribal Lifeline Program.

While several federal and statewide programs address the barrier of internet affordability for lower-income, tribal and/or rural households, under the Digital Opportunity Plan, the BDO's further engagement with business and telecom stakeholders can ensure further promotion of and participation in these programs.

2.d Strategy and Objectives

The Digital Opportunity Plan is the first of its kind. Until now, the state of Texas has never led a coordinated effort to gather and analyze data related not only to broadband availability, but also to digital opportunity barriers and assets across the state, including metrics of affordability, digital skills, device access and cybersecurity awareness. This section presents the overarching strategies and KPIs for advancing the state's vision of digital opportunity for all Texans, including individuals belonging to all covered populations. The BDO will measure the progress of this plan against the baseline data established here, noting limitations to the baseline datasets. Online tools such as digital surveys offer the fastest and most cost-effective way to gather baseline data. This is a core limitation to the baseline dataset, as this plan is most concerned with individuals with limited or no access to broadband and/or internet-enabled devices and tools. It is hardest to capture the experiences of these populations with online tools, and their underrepresentation in datasets such as Census surveys can lead to a cycle of under resourcing and continued undercounting. As an Alamo Region meeting attendee shared, "The Census and other vital services increasingly rely on the internet, making it crucial to ensure widespread access to improve responses and outcomes." While the American Community Survey (ACS), the Digital Opportunity Survey and other tools serve to establish baselines and KPIs, part of the plan includes improving upon the data as part of its implementation. KPIs and targets may change as the BDO gathers and analyzes more robust data over time. *Chapter 5: Implementation* includes definitions and descriptions of the plan's four implementation strategies.

Table 2: Key Performance Indicators for Advancing Digital Opportunity

VISION: Improve quality of life and promote economic growth by enabling fast, reliable and affordable broadband connectivity for all residents and businesses of Texas, promoting universal broadband adoption and providing access to digital skills development.

Key Performance Indicator (KPI)	**Baseline** (See *Appendix B* for a version of this table with covered population data)	**Target**	**Implementation Strategies** (See activity details in Ch 5)
NTIA Measurable Objective Category 1: Broadband Availability and Affordability			
Texas Goal 1: All Texans have access to reliable, affordable broadband internet service at home.			
1.1 Increase the percentage of Texans with reliable broadband subscriptions available in their homes.	68% of Texas households subscribe to broadband internet.[1]	80% by 2030	**Strategy 1:** Partner with and fund statewide organizations **Strategy 2:** Fund local partners **Strategy 3:** Promote internet adoption
1.2 Decrease the percentage of individuals who cite cost as a barrier to home internet service.	59% of respondents who are not connected state that home internet services are too expensive.[2]	50% by 2030	**Strategy 3:** Promote internet adoption
1.3 Increase the percentage of Texans who are aware of and enrolled in ACP and/or other low-cost or subsidized internet service options.	38% of eligible households enrolled in the ACP.[3] 40% of 2023 Digital Opportunity Survey respondents have heard about ACP.[2]	60% enrolled by 2030	**Strategy 3:** Promote internet adoption
NTIA Measurable Objective Category 2: Device Availability and Affordability and Technical Support			
Texas Goal 2: All Texans have access to affordable computers and other internet-enabled devices in their home, with corresponding technical support services.			
2.1 Increase the percentage of Texans who have home access to affordable internet-enabled devices other than a smartphone.	Virtually all respondents use a smartphone (94%) to connect to the internet. In addition, 79% use laptops and 56% use tablets.[2] 11% of households have a smartphone only and no	90% have access to affordable internet-enabled devices other than a	**Strategy 1:** Partner with and fund statewide organizations **Strategy 2:** Fund local partners

Key Performance Indicator (KPI)	Baseline (See *Appendix B* for a version of this table with covered population data)	Target	Implementation Strategies (See activity details in Ch 5)
	other computing device.[1]	smartphone by 2030	
2.2 Increase access to technical support for more Texans with internet-enabled devices.	16% of services and programs offered by organizations surveyed offer digital skills and technical support.[5]	25% by 2030	**Strategy 1:** Partner with and fund statewide organizations **Strategy 2:** Fund local partners **Strategy 4:** Maintain a living digital opportunity plan
NTIA Measurable Objective Category 3: Digital Literacy			
Texas Goal 3: All Texans have a broad foundation of digital literacy skills and access to a continuum of digital skills development programs.			
3.1 Increase the percentage of Texans who have basic digital literacy skills.	88% of Digital Opportunity Survey respondents are comfortable with a basic digital literacy skill such as connecting a computer or smartphone to a Wi-Fi network.[2]	95% by 2030	**Strategy 1:** Partner with and fund statewide organizations **Strategy 4:** Maintain a living digital opportunity plan
3.2 Increase the availability of digital literacy programs and services.	16% of services and programs offered by organizations surveyed offer digital skills and technical support.[5]	25% by 2030	**Strategy 1:** Partner with and fund statewide organizations **Strategy 2:** Fund local partners
3.3 Increase the percentage of Texas workers who have the level of digital skills training jobs require.	54% of Texas jobs require skills training beyond that received in high school or equivalent level of education; only 45% of Texas workers have those skills.[6]	55% have the skills by 2030	**Strategy 1:** Partner with and fund statewide organizations
NTIA Measurable Objective Category 4: Online Privacy and Cybersecurity			

Key Performance Indicator (KPI)	Baseline (See *Appendix B* for a version of this table with covered population data)	Target	Implementation Strategies (See activity details in Ch 5)
Texas Goal 4: All Texans feel safe online and are familiar with cybersecurity and online privacy measures.			
4.1 Increase the percentage of Texans who are familiar with cybersecurity and online privacy measures.	90% of respondents are familiar with cybersecurity measures and 86% have them set up on their devices.[2]	99% by 2030	**Strategy 1:** Partner with and fund statewide organizations **Strategy 2:** Fund local partners
NTIA Measurable Objective Category 5: Online Accessibility and Inclusivity of Public Resources			
Texas Goal 5: Increase the percentage of Texans who utilize the internet for public resources and services.			
5.1 Increase the percentage of Texans who utilize and understand how to use the internet for public resources and services (using accessing healthcare as a baseline).	More than half of survey respondents use the internet for accessing public resources and services such as news and current events (89%), accessing healthcare (82%), searching for educational resources (75%), improving work skills (68%) and finding information about government services (58%).[2]	90% use the internet to access healthcare by 2030	**Strategy 1:** Partner with and fund statewide organizations **Strategy 2:** Fund local partners **Strategy 3:** Promote internet adoption **Strategy 4:** Maintain a living digital opportunity plan

[1]FCC National Broadband Map [2]2023 Texas Digital Opportunity Survey [3]Universal Service Administrative Company (USAC) and Benton Institute [4]ACS 5-year Estimates (2017-2021) [5]2023 Texas Digital Resources Mapping Tool Survey [6]National Skills Coalition (2018)

For a more detailed version of this table that includes baseline data on covered populations, see: *Appendix B: Strategies, Objectives and Baselines.*

3. Current State of Digital Opportunity

3.a Needs Assessment

3.a.i Methodology

As part of the digital opportunity planning process, the BDO created an inventory of the current assets promoting digital opportunity in communities across the state and conducted an assessment of digital opportunity needs as uniquely experienced within covered populations, underserved populations and within economic regions. This chapter presents an analysis of the gaps between the assets and needs identified.

Key data sets included quantitative data from the Census Bureau's ACS and the NTIA Digital Equity Act Population Viewer to understand statewide baseline conditions, supplemented with data gathered from the Digital Opportunity Survey, the DRMTS and qualitative assessments from the public engagement model (detailed in *Chapter 4: Collaboration and Stakeholder Engagement*).

- The BDO developed the **Texas Digital Opportunity Survey** to identify the digital opportunity barriers affecting Texas households, such as the lack of access to broadband infrastructure, reliable and affordable internet service and the devices necessary to use the internet. The BDO also utilized the survey to examine challenges to broadband adoption, including digital literacy, awareness of cybersecurity and online privacy and publicly accessible online resources. The Digital Opportunity Survey was open to any Texas resident over the age of 18.
- The BDO developed the **DRMTS** to inventory organizations that provide digital opportunity-related resources within Texas. The DRMTS captures and depicts where resource gaps may exist within Texas and identifies the digital opportunity programs and services currently

available to Texans. The DRMTS is an online survey of organizations that currently or potentially work in the digital opportunity space, over a four-month period, from April to August 2023.

Where statistically significant, data gathered from each survey helps to provide a baseline for the statewide goals under each measurable objective category, and by covered population, underserved population and economic region. In identifying the needs of covered populations within each measurable objective category, the BDO can assess how it will interact with and impact the state's six outcome areas as part of the needs assessment.

The result is an evidence-based assessment of needs and barriers to full broadband adoption for those most impacted by gaps in digital opportunity.

The Digital Opportunity Survey received a total of 13,296 responses: 11,048 from the online survey and 2,248 from paper surveys disseminated during regional meetings and by libraries and other stakeholders. Paper surveys included a subset of the questions in the online survey and reached respondents using different methods than online (e.g., paper distribution vs. email and social media promotion). These differences in methodology call for separate analysis for the online and paper survey responses. After the data validation and cleaning process, the online survey received 9,440 valid responses, and the paper survey received 1,945 valid responses, resulting in a total of 11,385 valid survey responses that form the basis of the Digital Opportunity Survey's needs assessment analysis. Full survey methodology and limitations are in *Appendix C: Needs Assessment and Asset Inventory Report, Methodology and Limitations*, alongside a comparison of the demography of survey respondents to that of the full state of Texas according to the ACS.

While these data provide an initial assessment of digital opportunity in the state, it is a snapshot, with several limitations: Surveys reflect respondents' self-assessments; the sample size of over 11,000 respondents is not fully representative of Texas' 30.5 million residents; the survey data underrepresent the experiences of certain covered populations while overrepresenting others;

The online survey collected more robust data than the print version, but the print version may better reflect the experiences of those who do not have access to broadband or devices. The BDO acknowledges these and other limitations of the Digital Opportunity Survey data, while also recognizing the utility of a snapshot to provide a baseline understanding of the digital opportunity experiences of many Texans. *Chapter 5: Implementation* presents a plan to continue to gather, measure and improve upon the baseline data.

Similarly, while the BDO acknowledges that the DRMTS did not generate an exhaustive catalogue of every digital opportunity offering across the state, it provides a useful snapshot of programs and assets that enable digital opportunity.

3.a.ii Statewide Needs and Barriers

Texas is home to more than 30 million people,[20] of whom 4.2 percent lack fixed broadband availability, 31 percent lack broadband subscriptions, 23 percent are not using the internet, and 40 percent are not using a PC or tablet computer.[21] Texas is a diverse state with the majority of the population belonging to one or more covered populations that have been identified as needing better access to digital resources. Racial or ethnic minorities are the most prominent covered population in the state (58 percent), followed by low-income individuals (23 percent), rural residents (21 percent), aging individuals (18 percent), immigrants (17 percent), individuals with limited English proficiency (7 percent), veterans (5 percent), incarcerated individuals (1 percent), tribal communities (1 percent) and unhoused individuals (<1 percent).[22]

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[20] "U.S. Census Bureau QuickFacts: Texas." Accessed November 6, 2023. https://www.census.gov/quickfacts/fact/table/TX/PST045222.

[21] U.S. Census Bureau. (n.d.). Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/webappviewer/index.html?id=c5e6cf675865464a90ff1573c5072b42; American Community Survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html

[22] The U.S. Department of Housing and Urban Development Office of Community Planning and Development. (2022). The 2022 Annual Homelessness Assessment Report (AHAR) to Congress. https://www.huduser.gov/portal/sites/default/files/pdf/2022-ahar-part-1.pdf

The BDO's public engagement process revealed that for many Texans, utilizing publicly accessible digital resources can be challenging due to transportation constraints or limitations.

> "Public transportation is needed. Once you're outside Lufkin, you're dead in the water. Transportation is an issue to access public resources, but if you have internet, it's like having a car."
>
> – Public Meeting Participant, Lufkin, Texas

Texans do not have internet because it is too expensive or not available to them.

- Among the 5 percent of online Digital Opportunity Survey respondents who do not access the internet from home, 60 percent selected lack of available or adequate internet services and 59 percent selected cost as the reason for not having a home internet connection.
- Among the 20 percent of paper survey respondents who do not have internet service available in their home, 59 percent reported cost as the reason.
- Figure 1 shows where Texans use public internet resources based on whether they can access the internet from home.

Texans lack information about programs that could assist them with overcoming cost barriers.

- Only forty percent of Digital Opportunity Survey respondents have heard of the ACP and 21 percent have heard of discounted internet services by ISPs.

- Thirty-eight percent of households in Texas that area eligible to participate are enrolled in the ACP.[23]

Most Texans have access to a device to get online.

- In a question that allowed respondents to select multiple answers, most respondents use a smartphone (94 percent) to connect to the internet, in addition to other devices such as laptops (79 percent) and tablets (56 percent).
- Some residents selected only a smartphone as the device they use to get online (7 percent).

Some Texans do not have access to technical or cybersecurity support.

- Eighteen percent of survey respondents cannot access technical support nearby.
- Thirty percent of survey respondents who don't have cybersecurity measures installed on their devices, or are not sure about it, also cannot access technical support from nearby sources.

Some Texans are not comfortable with digital literacy skills.

- Eighty-eight percent of survey respondents are comfortable with connecting a computer or smartphone to a Wi-Fi network—a basic digital literacy skill.
- Survey respondent confidence declines with more complex digital skills: 77 percent of respondents are comfortable deleting cookies on a web browser; 69 percent of survey respondents are comfortable with setting up parental controls.

[23] Universal Service Administrative Co. (n.d.). ACP enrollment and claims tracker. https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/

Some Texans are interested in internet or computer training classes.

- Twenty-eight percent of online survey respondents are interested in internet or computer training classes.
- Survey respondents belonging to covered populations such as individuals with limited English proficiency (54 percent) and unhoused individuals (54 percent) are more likely to be interested in internet or computer training classes.

Most Texans are familiar with cybersecurity and online privacy measures.

- Ninety percent of respondents are familiar with cybersecurity measures and 86 percent have cybersecurity measures set up on their devices.

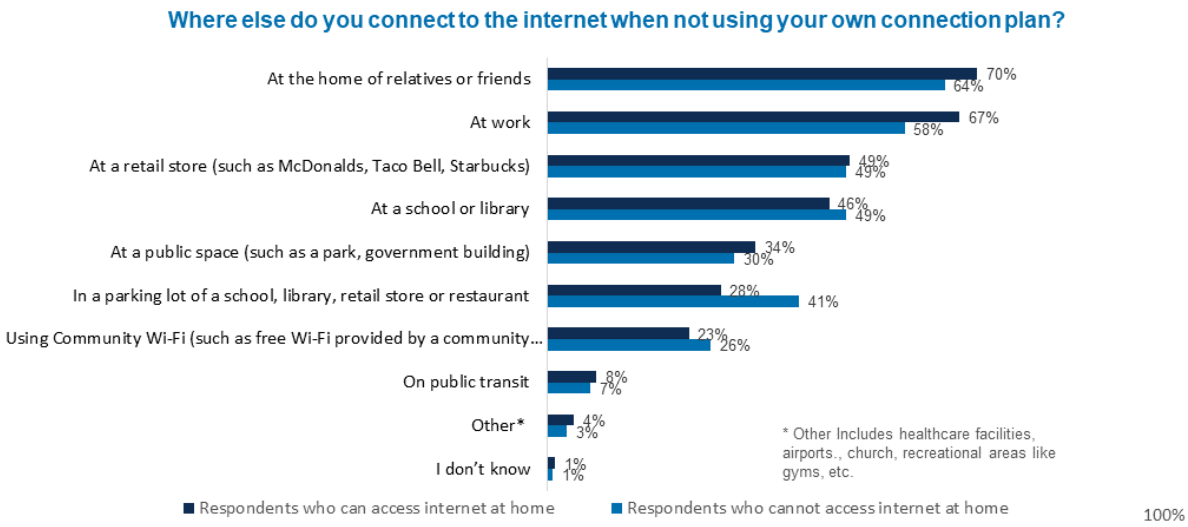
Texans use the internet to access essential services.

- More than half of survey respondents use the internet for accessing public resources and services such as news and current events (89 percent), accessing healthcare (82 percent), searching for educational resources (75 percent), improving work skills (68 percent) and finding information about government services (58 percent).

Texans who do not have internet at home must use the internet at schools or libraries, parking lots, and community organizations[24].

[24] Texas Digital Opportunity Public Survey (2023).

Figure 1: Internet Connection Outside of the Home



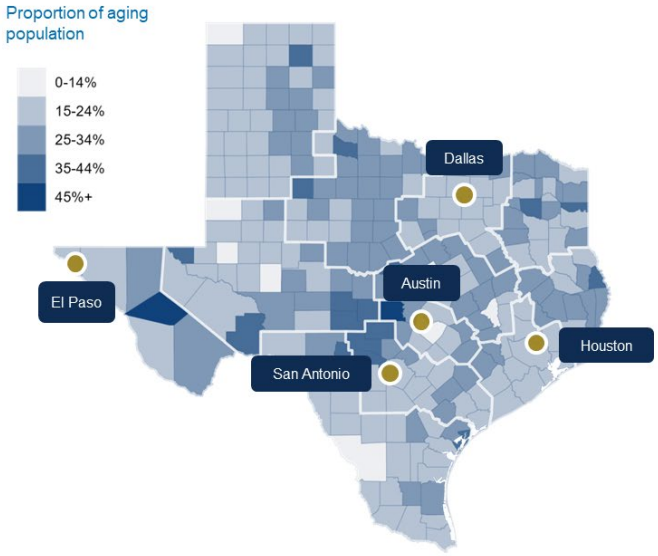
3.a.iii Covered Population Needs Assessment

3.a.iii.1 Aging Individuals

> "For the elderly, the sense of isolation is real. If you can keep people in their own homes, it's less expensive. You live longer, you do better. The next group of elders will be tech-savvy. The internet can help elders be independent."
>
> – Public Meeting Attendee, Belton, Texas

Aging individuals represent 18 percent of the state's population and 42 percent of Digital Opportunity Survey respondents. Of the respondents to the Digital Opportunity Survey who self-identified as aging individuals, 40 percent also identified as residing in a rural area. Sixteen percent of attendees of public digital opportunity meetings across the state identify as or represent organizations serving aging individuals. Organizations serving aging individuals participated in and provided guidance throughout the public engagement process. For more on these engagements, see *Chapter 4*.

Figure 2: Aging Individuals in Texas by County[25]



The Upper East Region (25%), Northwest (23%) and Southeast (23%) regions have the highest proportion of aging individuals.

According to the Digital Opportunity Survey data, internet availability and adequacy and digital literacy are the primary barriers to full digital opportunity that aging individuals face. The qualitative data gathered in the public engagement process revealed transportation, affordability, digital literacy, online safety, language barriers and understanding the benefits of internet and device types (such as mobile touch screen devices) as barriers for aging populations. Addressing these barriers will impact aging individuals' adoption of internet services; ability to access health services, essential services and civic processes; and provide opportunities for increased engagement in educational advancement and/or continued engagement in the workforce.

[25] U.S. Census Bureau. American Community Survey five-year estimates (2017-2021). Table B01001: Sex by Age. https://www.census.gov/data/developers/data-sets/acs-5year.html

Findings:

Internet availability and adequacy are the primary barriers preventing aging individuals from connecting to the internet at home. Aging individuals have some of the greatest share of inadequate internet speeds among covered and underrepresented populations, next to rural residents. They are about as aware of ACP and discounted internet by ISPs as all survey respondents.

Aging individuals have about the same support if they have trouble with the computer or internet, and about the same or more awareness and implementation of cybersecurity measures on their devices, as all survey respondents. Aging individuals have less comfort with basic digital literacy skills such as connecting a computer or smartphone to a Wi-Fi network and similar interest in internet or computer training classes as all survey respondents. Aging individuals use desktops to connect to the internet at home at higher rates than all respondents.

> "[A] mobile device is most logical, and agencies work to get people to use mobile devices. However, people's dexterity [and knowledge] can be an issue in using them. Kids can do a million things on their phones, but as you get to aging populations, there are challenges. 'Take a picture of document on your phone' or 'upload a picture of your passport' can be a difficult ask. Some people can do this, others don't know where their camera is, or don't have a smartphone. There is a population of people where smartphones aren't a tool for them."
>
> – Essential Services Task Force Member

Aging individuals often use the internet to access healthcare information or services, the second highest among covered or underrepresented populations. Among survey respondents belonging to covered and underrepresented

populations, aging individuals use the internet to improve skills for work and to access educational resources the least.

The table below shows aging individuals' responses to the Digital Opportunity Survey as compared to all survey responses.

Table 3: Digital Opportunity Survey Responses: Respondents who Self-identified as Aging Individuals

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Aging Individuals	All Respondents
If no home internet subscription, reason for not subscribing is that services are not available or adequate	67%	60%
Report that speed and reliability of internet service at home is inadequate	40%	36%
Download speeds below 25 Mbps	32%	28%
Upload speeds below 3 Mbps	21%	17%
If no home internet subscription, reason for not subscribing is that services are too expensive	55%	59%
Pay more than $100 for monthly internet	43%	41%
Have heard of ACP	41%	40%
Have heard of discounted internet by ISPs	19%	21%
Do not have someone in their household or community to help them if they have trouble with the internet	20%	18%
Are not familiar with cybersecurity measures	9%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	11%	14%

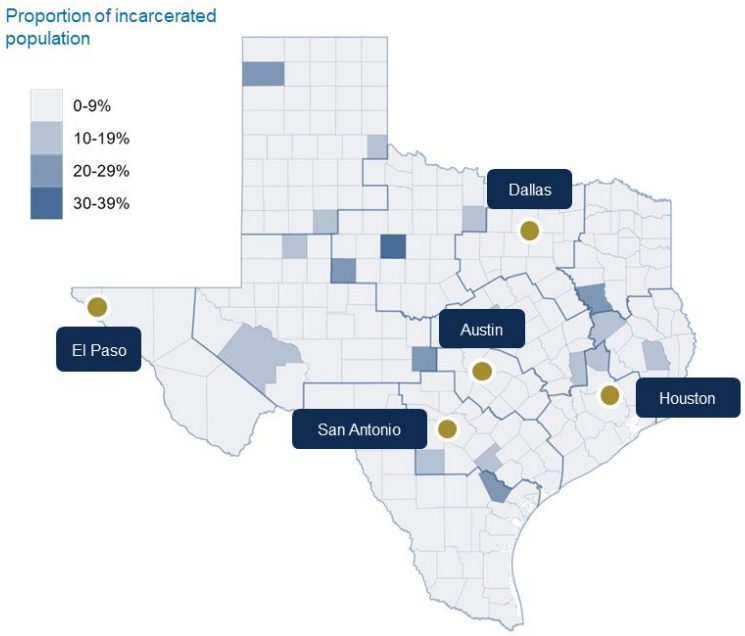
Survey Response	Aging Individuals	All Respondents
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	16%	12%
Would be interested in internet or computer training classes	30%	28%
Use a desktop computer	48%	43%
Use a laptop	75%	79%
Use a tablet	55%	56%
Use a smartphone	92%	94%
Only use a smartphone	6%	7%
Sometimes or often use the internet for accessing healthcare information or services	86%	82%
Sometimes or often use internet to apply for public benefits	44%	33%
Sometimes or often use the internet to improve skills for work	56%	68%
Sometimes or often use internet to search for available housing	20%	27%
Sometimes or often use the internet for accessing educational resources	69%	75%

3.a.iii.2 Incarcerated Individuals

According to the Digital Equity Act Population Viewer, incarcerated individuals in non-federal facilities make up 0.8 percent of the state's population. Due to limitations of human subject research protocols, incarcerated individuals did not participate in the online or paper Digital Opportunity Survey. Rather, key agencies like the Texas Department of Criminal Justice (TDCJ) and Windham School District represented the experiences of incarcerated individuals and the institutions that serve them, serving on the Essential Services and Education

Task Forces, respectively. Four percent of public meeting attendees represent organizations serving incarcerated individuals.

Figure 3: Incarcerated Individuals in Texas by County[26]



The Northwest (3%), Upper East Region (3%) and Southeast (2%) regions have the highest proportion of incarcerated individuals.

As of Feb. 28, 2022, TDCJ has oversight of 118,277 incarcerated individuals located in 98 facilities throughout Texas. TDCJ's facilities include prison facilities, pre-release facilities, psychiatric facilities, one developmental disabilities program facility, two medical facilities, state jail facilities, one geriatric facility and substance abuse felony punishment facilities. In addition, TDCJ oversees 67 district parole offices and supervises 79,418 people released from prison to parole supervision.[27]

[26] U.S. Census Bureau & National Telecommunications and Information Administration. Digital Equity Population Viewer. Incarcerated individuals, other than individuals who are incarcerated in a federal correction facility.

[27] Texas Department of Criminal Justice (2022). Agency Strategic Plan Fiscal Years 2023-2027. Schedule F1. Agency Workforce Plan.

> "Providing experiences to participate in career and job fairs, and teaching how to apply for and attain a job before leaving prison, have become important things to know how to do."
>
> – Essential Services Task Force Member

TDCJ operates **Inmate Technology Services**[28] and works with a vendor to provide an outbound email messaging service for incarcerated individuals called JPay. Each email requires a "stamp" which users must purchase online or at a JPay kiosk, located in certain correctional facilities. Individuals incarcerated at certain TDCJ facilities may participate in remote video visitations at a cost of $10 for 60 minutes. TDCJ partners with a vendor, **Securus Technologies**, to deploy a free loaner tablet program to ensure that eligible incarcerated individuals will have access to a device for the duration of their incarceration, to participate in educational, vocational, religious and other relevant programming. The program is currently active at multiple TDCJ sites, with other facilities soon to follow.

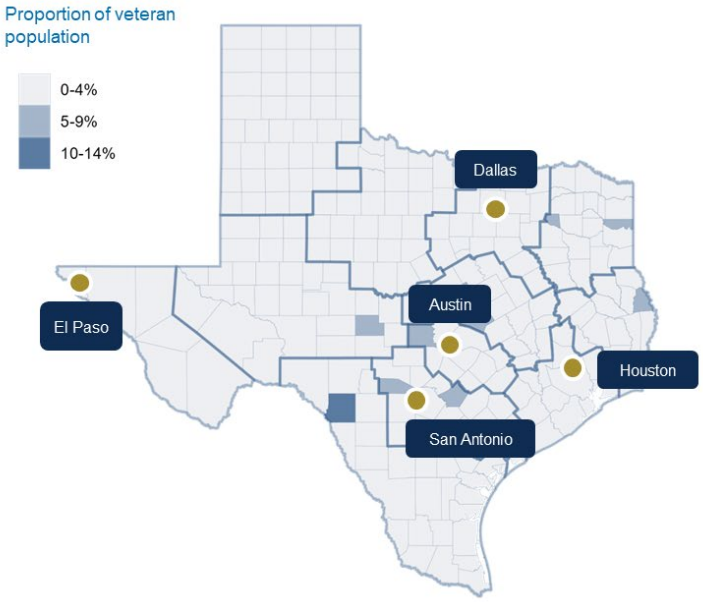
For individuals exiting incarceration, the **Texas Center for Justice and Equity** and **TDCJ** have a database of resources that include employment services offering computer classes, facilities that offer access to computers and other digital opportunity resources. Service providers often tie such resources to opportunities for job seekers. Providing incarcerated individuals access to devices, internet, digital skills, cybersecurity and essential online services while incarcerated could provide opportunities for educational advancement and access to health services while incarcerated, among other benefits. With digital skills and access to devices and internet, individuals exiting incarceration could improve their access to and engagement with educational resources, essential services, healthcare, civic processes and job training or career development resources.

[28] Texas Department of Criminal Justice. (2023). Inmate Technology Services. https://www.tdcj.texas.gov/offender_tele/index.html#e-messaging

3.a.iii.3 Veterans

Veterans represent 5 percent of the state's population and 17 percent of Digital Opportunity Survey respondents. Of the respondents to the Digital Opportunity Survey who self-identified as veterans, 61 percent also self-identified as aging individuals. Ten percent of public meeting attendees identify as or represent organizations serving veterans. The Texas Veterans Commission participated in and provided guidance to the Statewide Working Group (SWG), Essential Services Task Force and Health Task Force.

Figure 4: Veterans in Texas by County[29]



The Central Texas (8%), Alamo (7%) and Northwest (7%) regions have the highest proportion of veterans.

[29] U.S. Census Bureau. American Community Survey five-year estimates (2017-2021). Table B21001: Sex by Age by Veteran Status for the Civilian Population 18 Years and Over. https://www.census.gov/data/developers/data-sets/acs-5year.html

Findings:

> "Unless they have access to the internet, [veterans] have to confirm their identity with papers that people commonly lose."
>
> – Essential Services Task Force Member

Digital Opportunity Survey respondents who self-identified as veterans and indicated that they cannot connect to the internet at home provided internet availability and adequacy as the primary barriers to in-home internet access. Across the board, veterans have similar rates to all survey respondents in other adoption areas. They're as aware or more aware of ACP, discounted internet and cybersecurity as all survey respondents, and implement cybersecurity measures at higher rates. Veterans have about the same comfort with basic digital literacy skills such as connecting a computer or smartphone to a Wi-Fi network, interest in internet or computer training classes, and support if they have trouble with the computer or internet as all respondents. The intersection of healthcare and veterans' services came up frequently in public engagements. Veteran Digital Opportunity Survey respondents indicated that they use the internet to access healthcare information at high rates (the second highest among covered populations). Veteran survey respondents use the internet to improve skills for work and to access educational resources at the lowest rates among covered and underserved populations. Continued support for veterans could improve their access to and adoption of internet services, use of the internet to improve skills for work and engagement in the workforce and access to educational resources, and further veterans' access to healthcare, essential services and civic processes using the internet.

The table below shows veterans' responses to the Digital Opportunity Survey as compared to all survey responses.

Table 4: Digital Opportunity Survey Responses: Respondents who Self-identified as Veterans

Higher than all respondents	Lower than all respondents	Equal to all respondents

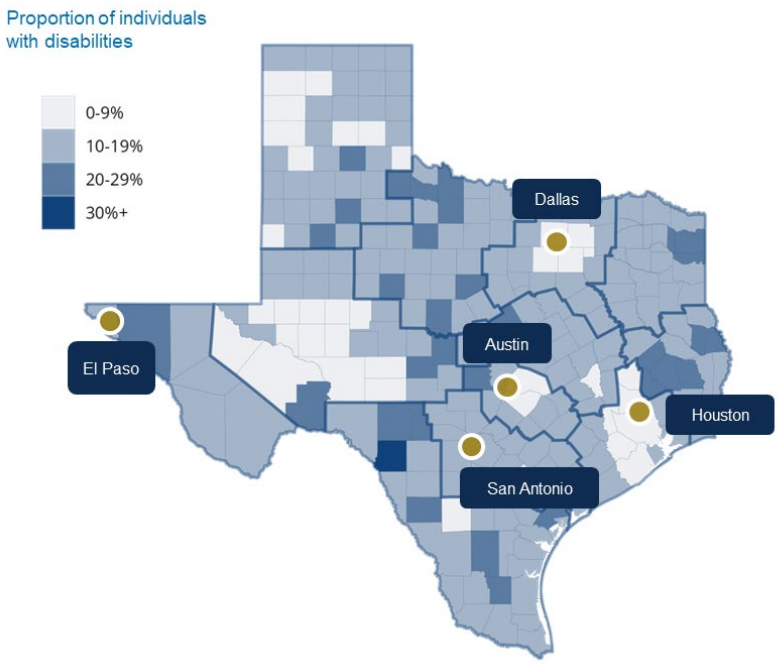
Survey Response	Veterans	All Respondents
Do not subscribe because services are not available or adequate	77%	60%
Report that speed and reliability of internet service at home is inadequate	41%	36%
Download speeds below 25 Mbps	29%	28%
Upload speeds below 3 Mbps	18%	17%
Do not subscribe because services are too expensive	41%	59%
Pay more than $100 for monthly internet	47%	41%
Have heard of ACP	40%	40%
Have heard of discounted internet by ISPs	21%	21%
Use a desktop computer	53%	43%
Use a laptop	80%	79%
Use a tablet	62%	56%
Use a smartphone	94%	94%
Only use a smartphone	5%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	18%	18%
Are not familiar with cybersecurity measures	7%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	11%	14%

Survey Response	Veterans	All Respondents
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	13%	12%
Would be interested in internet or computer training classes	30%	28%
Sometimes or often use the internet for accessing healthcare information or services	86%	82%
Sometimes or often use internet to apply for public benefits	37%	33%
Sometimes or often use the internet to improve skills for work	62%	68%
Sometimes or often use the internet to search for available housing	25%	27%
Sometimes or often use the internet for accessing educational resources	72%	75%

3.b.iii.4 Individuals with Disabilities

Individuals with disabilities represent 11 percent of the state's population and 18 percent of Digital Opportunity Survey respondents. Of the respondents to the Digital Opportunity Survey who self-identified as individuals with disabilities, 57 percent also identified as aging individuals. Ten percent of public meeting attendees identify as or represent organizations serving individuals with disabilities. Disability Rights Texas serves on the SWG and Civic and Social Task Force, and the Texas Technology Access Program (at the University of Texas) and Texas ABLE serves on the Essential Services Task Force, advising on the experiences of people with disabilities.

Figure 5: Individuals with Disabilities in Texas by County[30]



The Southeast (17%), Northwest (16%) and Upper East (15%) regions have the highest proportion of individuals with disabilities.

Findings:

The Digital Opportunity Survey identified cost and digital literacy as primary barriers for individuals with disabilities. Individuals with disabilities and the organizations that serve them shared their perspectives in the SWG, task forces and public meetings. These conversations highlighted the importance of access to adaptive technologies such as screen readers, adaptive keyboards, software with voice-to-text functionality and many other tools created using accessible design best practices, by and for users with disabilities.

[30] U.S. Department of Commerce. (n.d.). U.S. Census Bureau American Community Survey five-year estimates (2017-2021). Table C18130: Age by Disability Status by Poverty Status. https://www.census.gov/data/developers/data-sets/acs-5year.html

Stakeholder groups also identified technology relevance and digital literacy as key to adoption of resources by individuals with disabilities. A member of the Essential Services Task Force shared that as communities become more dependent on devices and internet, internet reliability becomes an issue, especially in rural areas: “When dealing with individuals with disabilities, [rural 9-1-1 outages] could be detrimental.” Survey respondents with disabilities focus more on cost and less on reliability and availability of internet as barriers. The highest concentration of individuals with disabilities is in the Southeast, Upper East and Northwest regions of the state, the same regions with the highest concentration of rural residents. Internet availability and adequacy disproportionally impact rural residents, and the Southeast, Upper East, and Northwest regions have some of the lowest internet speeds in the state.

> “What happens with the internet as it works with screen readers? I can think of a million ways that the internet is not accessible. As you dig into subsets of different accessibility needs, there can be challenges when ensuring inclusivity.”
>
> – Statewide Working Group Member

In the Digital Opportunity Survey, individuals with disabilities cited cost as the primary reason they do not connect to the internet at home. Individuals with disabilities are more aware of ACP and discounted internet than all survey respondents and are some of the most aware among covered and underrepresented populations. While individuals with disabilities use devices at about the same rate as all survey respondents, the quality of those devices matters. An Essential Services Task Force Member pointed out, “Assistive technologies for [people who are] deaf/hard of hearing are antiquated pieces of equipment. [I’m] looking to support more up-to-date technology… people need devices, to know how to use them, and to know that they exist.”

The Digital Opportunity Survey revealed that individuals with disabilities have less comfort with basic digital literacy skills, such as connecting a computer or smartphone to a Wi-Fi network, compared to all survey respondents. Individuals with disabilities have similar access to support as other covered populations if they have trouble with technology, and about the same awareness and implementation of cybersecurity measures on their devices. They are more interested in internet or computer training classes than all respondents. A member of the Essential Services Task Force shared that barriers are higher for aging individuals with disabilities: “People with disabilities or who are aging aren’t as connected as they could be because they don’t have devices, access or digital literacy.”

Individuals with disabilities use the internet to access healthcare information the most among covered and underrepresented populations. They are among the highest covered and underrepresented populations using the internet to apply for public benefits and the lowest using the internet to improve skills for work.

The survey also found that individuals with disabilities and individuals with limited English proficiency use public internet at higher rates than the overall survey population.

Addressing barriers to digital literacy, costs of internet access and access to devices could further individuals with disabilities’ access and adoption of internet, use of the internet for healthcare and essential services, and provide opportunities for increased engagement in educational advancement, engagement in the workforce and participation in civic processes using the internet.

Figure 6: Internet Connection Outside of the Home for Individuals with Disabilities and Individuals with Limited English Proficiency[31]

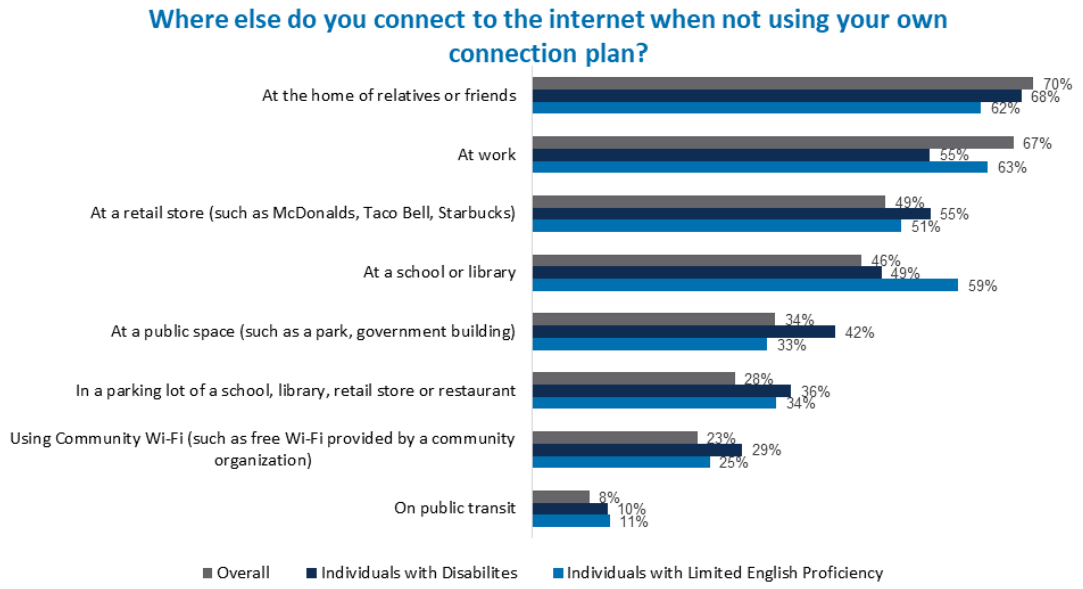


Table 5 shows Digital Opportunity Survey responses of individuals with disabilities as compared to all survey respondents.

Table 5: Digital Opportunity Survey Responses: Respondents who Self-Identified as Individuals with Disabilities

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Individuals with Disabilities	All Respondents
Do not subscribe because services are not available or adequate	**59%**	**60%**
Report that speed and reliability of internet service at home is inadequate	**44%**	**36%**
Download speeds below 25 Mbps	**26%**	**28%**
Upload speeds below 3 Mbps	**15%**	**17%**

[31] Texas Digital Opportunity Survey (2023).

Survey Response	Individuals with Disabilities	All Respondents
Do not subscribe because services are too expensive	64%	59%
Pay more than $100 for monthly internet	45%	41%
Have heard of ACP	46%	40%
Have heard of discounted internet by ISPs	23%	21%
Use a desktop computer	48%	43%
Use a laptop	74%	79%
Use a tablet	57%	56%
Use a smartphone	93%	94%
Only use a smartphone	8%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	20%	18%
Are not familiar with cybersecurity measures	10%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	14%	14%
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	16%	12%
Would be interested in internet or computer training classes	35%	28%
Sometimes or often use the internet for accessing healthcare information or services	86%	82%
Sometimes or often use internet to apply for public benefits	49%	33%
Sometimes or often use the internet to improve skills for work	65%	68%

Survey Response	Individuals with Disabilities	All Respondents
Sometimes or often use the internet to search for available housing	**32%**	**27%**
Sometimes or often use the internet for accessing educational resources	**75%**	**75%**

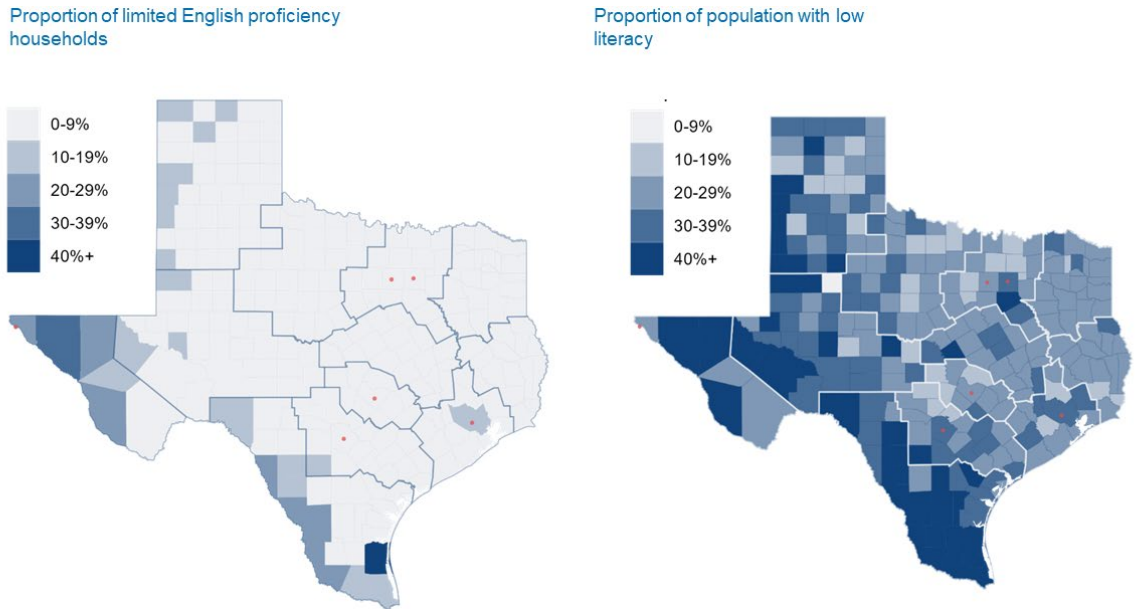
3.a.iii.5 Individuals with Limited English Proficiency

In the Digital Equity Act Notice of Funding Opportunity (NOFO), the NTIA describes one covered population that has historically experienced lower rates of computer and internet use as: "Individuals with a language barrier, including individuals who: are English learners; and have low levels of literacy." The NTIA groups English learners and those with low literacy in any language into one covered population: individuals with a language barrier. This plan refers to this group as "individuals with limited English proficiency."

In both online and paper formats, the Digital Opportunity Survey asked respondents to self-identify as an English language learner and/or someone who has difficulty understanding English. Households with limited English proficiency represent 5 percent of Digital Opportunity Survey respondents and 7 percent of the state's households[32]. Twenty-eight percent of Texans have low literacy levels.[32] Of survey respondents who self-identified as individuals with limited English proficiency, 91 percent also identified as belonging to a racial or ethnic minority group. Twenty percent of Texans have low literacy levels. Ten percent of attendees of the Digital Opportunity public meetings identify as or represent organizations serving individuals with limited English proficiency. The Texas A&M Distance Education Professional Development Center serves on the Education Taskforce, providing guidance on the needs and barriers of individuals with limited English proficiency.

[32] Digital Equity Act Population Viewer. National Center for Education Statistics, 2012/2014/2017 Program for the International Assessment of Adult Competencies State Small Area Estimates of Adult Skills on Literacy and Numeracy. U.S. Census Bureau American Community Survey five-year estimates (2017-2021). Table C16002: Household Language by Household Limited English-Speaking Status.

Figure 7: Individuals with Limited English Proficiency and Low Literacy in Texas by County[33]



The South Texas and Upper Rio Grande regions have the highest proportions of households with limited English proficiency and low literacy levels.

Findings:

According to the Digital Opportunity Survey, individuals with limited English proficiency are among the covered populations most affected by the digital divide. Cost of internet, access to technical support and devices, awareness of discounted programs, digital literacy and cybersecurity are all barriers for individuals with limited English proficiency. Digital Opportunity Survey respondents with limited English proficiency cite cost as the primary reason they do not connect to the internet at home. They have among the lowest awareness of ACP and discounted internet services among covered populations. They are

[33] Digital Equity Act Population Viewer. National Center for Education Statistics, 2012/2014/2017 Program for the International Assessment of Adult Competencies State Small Area Estimates of Adult Skills on Literacy and Numeracy. U.S. Census Bureau American Community Survey five-year estimates (2017-2021). Table C16002: Household Language by Household Limited English-Speaking Status.

the covered population the most likely to cite not knowing how to apply as the reason for not enrolling in internet subsidy or discount programs. They use devices at lower rates overall than all survey respondents. Next to low-income and unhoused individuals, they use only a smartphone to connect to the internet among the highest rates of all covered and underrepresented populations.

> "A lot of older adults don't speak English. Training and devices need to be accessible for them. Think about someone's education level and literacy level – they may not be able to comprehend or navigate the websites. Help people with low literacy breakdown websites."
>
> – Civic and Social Taskforce Member

Individuals with limited English proficiency have some of the lowest rates of cybersecurity awareness among all survey respondents and covered/underrepresented populations. They also have the lowest access to technical support among covered and underrepresented populations. Individuals with limited English proficiency have less comfort with basic digital literacy skills, such as connecting a computer or smartphone to a Wi-Fi network, compared to all survey respondents. They are the most interested in internet or computer training classes, and they use the internet to access educational resources and to improve skills for work among the highest rates of all covered and underrepresented populations.

Task forces identified examples of digital literacy training for individuals with limited English proficiency. For example, the Education Task Force shared that Tyson Foods partnered with Texas Adult Education Literacy to develop a digital skills curriculum for English language learners, teaching digital skills integrated into English as a Second Language (ESL) curriculum.[34] This program helped to

[34] Grayson College. (2020, January 15). Grayson College Adult Education & Literacy Wins $10,000 for Work with Tyson Foods. Grayson College News. https://www.grayson.edu/news/2020/01/article1.html

inform the Digital Access and Resilience in Texas' 2023 Foundational Digital Literacy ESL Curriculum.[35] Given the high digital disparities among this population, strengthening and expanding such programs is a key recommendation in the second implementation strategy discussed in *Chapter 5: Implementation*.

The Digital Opportunity Survey found that individuals with limited English proficiency and individuals with disabilities use public internet at higher rates than the overall survey population. See Figure 6.

Addressing barriers could improve health, educational and workforce outcomes for individuals with limited English proficiency; increase access to and adoption of internet services; and provide opportunities for increased engagement in using the internet to access essential services and civic and social processes.

The table below shows responses to the Digital Opportunity Survey from individuals with limited English proficiency as compared to all survey respondents.

Table 6: Digital Opportunity Survey Responses: Respondents who Self-Identified as Having Limited English Proficiency

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Individuals with Limited English Proficiency	All Respondents
Do not subscribe because services are too expensive	**74%**	**59%**
Do not subscribe because services are not available or adequate	**32%**	**60%**

[35] Texas Center for the Advancement of Literacy and Learning Digital Access and Resilience in Texas. (2023). A Foundational Digital Literacy ESL Curriculum. https://tcall.tamu.edu/docs/dart/lessons/0-0_IntroductionAndAppendices.pdf

Survey Response	Individuals with Limited English Proficiency	All Respondents
Pay more than $100 for monthly internet	32%	41%
Only use a mobile data plan to connect to the internet	14%	10%
Report that speed and reliability of internet service at home is inadequate	34%	36%
Download speeds below 25 Mbps	19%	28%
Upload speeds below 3 Mbps	13%	17%
Have heard of ACP	34%	40%
Have heard of discounted internet by ISPs	18%	21%
Are not enrolled in discount programs because they don't know how to apply	29%	9%
Use a desktop computer	28%	43%
Use a laptop	67%	79%
Use a tablet	44%	56%
Use a smartphone	92%	94%
Only use a smartphone	18%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	27%	18%
Are not familiar with cybersecurity measures	37%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	29%	14%
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	15%	12%
Would be interested in internet or computer training classes	54%	28%

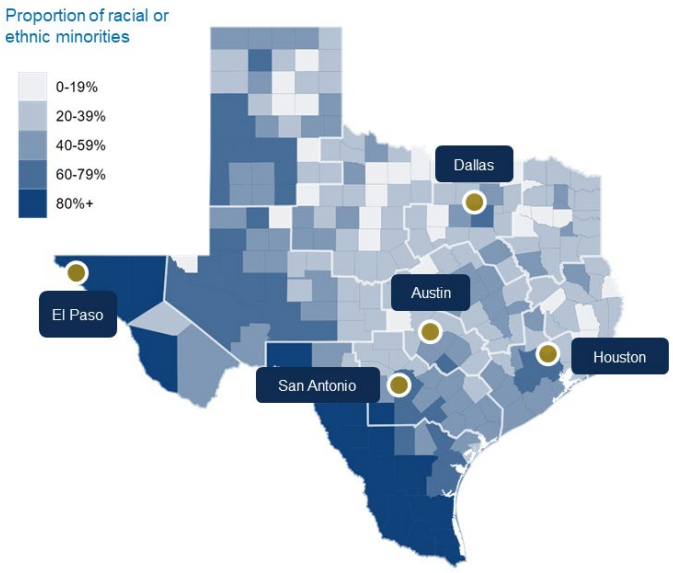
Survey Response	Individuals with Limited English Proficiency	All Respondents
Sometimes or often use the internet for accessing healthcare information or services	**78%**	**82%**
Sometimes or often use internet to apply for public benefits	**45%**	**33%**
Sometimes or often use the internet to improve skills for work	**79%**	**68%**
Sometimes or often use the internet to search for available housing	**39%**	**27%**
Sometimes or often use the internet for accessing educational resources	**87%**	**75%**

3.a.iii.6 Individuals Who Belong to a Racial or Ethnic Minority Group

Texas is a majority minority state.[36] Individuals who belong to a racial or ethnic minority group represent 58 percent of the state's population and 40 percent of Digital Opportunity Survey respondents. Of survey respondents who self-identified as members of a racial or ethnic minority group, 32 percent also identified as aging individuals. Twelve percent of public meeting attendees identify as or represent organizations serving racial and ethnic minorities. The Texas Black Caucus Foundation served on the SWG; several other organizations serving on the SWG or task forces spoke to the experiences of the racial or ethnic minority groups they serve.

[36] U.S. Department of Commerce. (n.d.). U.S. Census Bureau American Community survey five-year data (2009-2021). https://www.census.gov/data/developers/data-sets/acs-5year.html

Figure 8: Members of a Racial or Ethnic Minority Group in Texas by County[37]



The Upper Rio Grande (87%), South Texas (87%) and Alamo (64%) regions have the highest proportion of residents belonging to racial or ethnic minority groups.

Findings:

According to the Digital Opportunity Survey, cost of internet, digital skills and cybersecurity awareness are barriers for racial and ethnic minorities to access the internet. At the same time, racial and ethnic minorities utilize the internet at higher rates than all survey respondents to access public and essential services online.

Responses to the Digital Opportunity Survey cite cost as the primary reason racial or ethnic minorities do not subscribe to internet at home; however, they have the about same awareness of ACP and discounted internet services by ISPs as all survey respondents. Respondents from this population use devices

[37] U.S. Department of Commerce. (n.d.). U.S. Census Bureau American Community Survey five-year estimates (2017-2021). Tables B02001: Race and B03002: Hispanic or Latino Origin by Race. https://www.census.gov/data/developers/data-sets/acs-5year.html

and access online public services and essential services at about the same or higher rates as all survey respondents.

Individuals belonging to racial and ethnic minority groups have access to technical support at around the same rates as all survey respondents. While they have the same support, they are less familiar with and use cybersecurity measures at lower rates than all respondents. Their levels of confidence with basic digital skills such as connecting a computer or smartphone to a Wi-Fi network are slightly lower than all survey respondents.

Addressing cost, digital skills and cybersecurity awareness could provide opportunities to improve health, educational and workforce outcomes; increase access to and adoption of internet services; and increase engagement in using the internet to access essential services and civic and social processes.

The table below shows Digital Opportunity Survey responses from individuals who are members of racial or ethnic minority groups, as compared to all survey respondents.

Table 7: Digital Opportunity Survey Responses: Respondents Who Self-Identified as Belonging to Racial or Ethnic Minority Groups

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Racial or Ethnic Minorities	All Respondents
Do not subscribe because services are not available or adequate	**49%**	**60%**
Report that speed and reliability of internet service at home is inadequate	**30%**	**36%**
Download speeds below 25 Mbps	**20%**	**28%**
Upload speeds below 3 Mbps	**11%**	**17%**

Survey Response	Racial or Ethnic Minorities	All Respondents
Do not subscribe because services are too expensive	69%	59%
Pay more than $100 for monthly internet	37%	41%
Have heard of ACP	40%	40%
Have heard of discounted internet by ISPs	22%	21%
Use a desktop computer	38%	43%
Use a laptop	77%	79%
Use a tablet	54%	56%
Use a smartphone	93%	94%
Only use a smartphone	10%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	20%	18%
Are not familiar with cybersecurity measures	15%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	19%	14%
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	14%	12%
Would be interested in internet or computer training classes	39%	28%
Sometimes or often use the internet for accessing healthcare information or services	81%	82%
Sometimes or often use internet to apply for public benefits	38%	33%
Sometimes or often use the internet to improve skills for work	75%	68%

Survey Response	Racial or Ethnic Minorities	All Respondents
Sometimes or often use the internet to search for available housing	**35%**	**27%**
Sometimes or often use the internet for accessing educational resources	**82%**	**75%**

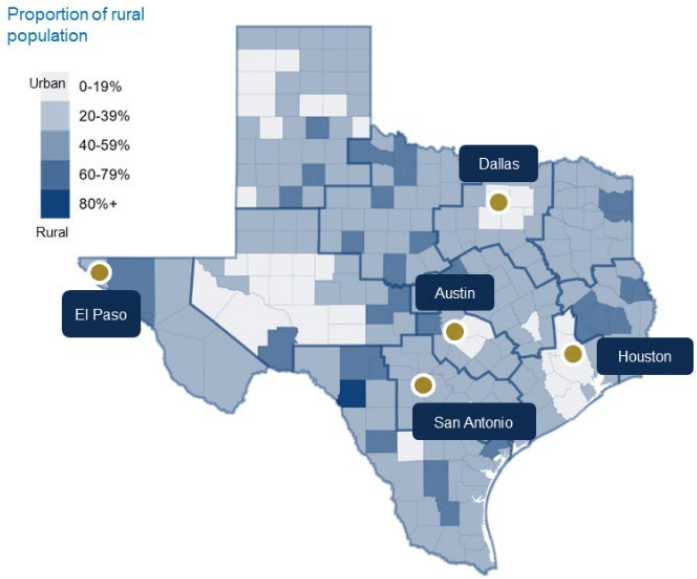
3.a.iii.7 Rural Residents

> "You have to solve the problem of access first. It's like trying to put on your seatbelt before you have a car."
>
> – Public Meeting Participant, Longview, Texas

Rural residents represent 35 percent of the state's population.[38] Thirty-two percent of Digital Opportunity Survey respondents self-identify as rural residents. Fifty-two percent of respondents identifying as rural residents also identify as aging individuals. Nineteen percent of public meeting attendees identify as or represent organizations serving rural residents. **Texas Rural Funders** serves on the SWG and Civic and Social Task Force. The **Texas Organization of Rural and Community Hospitals (TORCH)** and **Texas Rural Health Association** serve on the Health Task Force. Several other rurally based and rural-serving organizations participated in the public engagement process, including rural libraries and school districts.

[38] U.S. Census Bureau. (n.d.). Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/webappviewer/index.html?id=c5e6cf675865464a90ff1573c5072b42

Figure 9: Rural Residents in Texas by County[39]



The Upper East Region (75%), Northwest (58%), and Southeast (52%) regions have the highest proportion of rural residents.

Findings:

Internet availability, adequacy and speed are the primary barriers rural residents face to in-home internet adoption. The Digital Opportunity Survey and public engagement process revealed that rural Texans have limited internet availability and face high costs for internet. If they can afford internet, available service is not always adequate for their needs.

According to the Digital Opportunity Survey, rural residents pay the most for home internet service among covered or underserved populations. While rural residents pay the most for internet service, they cite availability and/or adequacy of the internet as the primary reason they do not subscribe to the internet at home, as opposed to cost. Rural residents use devices to connect to the internet at home at about the same rates as all respondents. While rural residents use

[39] U.S. Census Bureau. (n.d.). Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/webappviewer/index.html?id=c5e6cf675865464a90ff1573c5072b42

devices at the same rates, having the ability to connect to the internet with the device is key to digital opportunity. Mobile data has limitations, especially in rural areas. Public meeting participants expressed frustrations with the reliability of mobile data plans, with a participant in the Jasper Public Meeting (located in the Southeast Region) sharing, “The school district gives away Chromebooks and hot spots, but with mobile dead zones, you might as well send [kids] home with a rock.” Similarly, SWG and task force participants emphasized that rural areas have a lot to offer, but without adequate internet, they miss out on key benefits like telehealth, the ability to sign up for essential services like veteran resources, Supplemental Nutrition Assistance Program (SNAP) and Medicaid online, and keeping long-term residents in place—avoiding the rural “brain drain.”

> “[Without connection], it’s like the world is leaving you behind.”
>
> – Public meeting participant, Wichita Falls, Texas

Awareness of cybersecurity measures, ability to access technology support and confidence with basic digital skills such as connecting a computer or smartphone to a Wi-Fi network are about the same for rural residents as all respondents. They express the lowest levels of interest in internet or computer training classes, among all covered or underrepresented populations and all respondents. While rural residents access online public services and essential services at about the same rates as all respondents, the SWG and task forces note that internet speeds make virtual resources challenging, due to poor connectivity.

Addressing availability, adequacy and speed could provide opportunities to improve health, educational and workforce outcomes; increase access to and adoption of internet services; and increase engagement in using the internet to access essential services and civic and social processes.

The table below shows rural residents’ responses to the Digital Opportunity Survey as compared to all survey responses.

Table 8: Digital Opportunity Survey Responses: Respondents Who Self-Identified as Rural Residents

Higher than all respondents	Lower than all respondents	Equal to all respondents

-

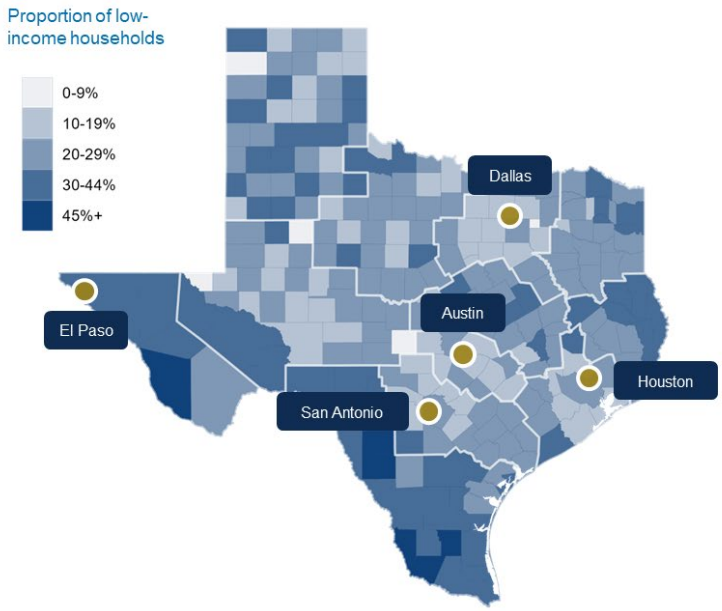
Survey Response	Rural Residents	All Respondents
Do not subscribe because services are not available or adequate	77%	60%
Report that speed and reliability of internet service at home is inadequate	60%	36%
Download speeds below 25 Mbps	48%	28%
Upload speeds below 3 Mbps	34%	17%
Do not subscribe because services are too expensive	51%	59%
Pay more than $100 for monthly internet	51%	41%
Have heard of ACP	39%	40%
Have heard of discounted internet by ISPs	19%	21%
Only use a mobile data plan for internet access at home	18%	10%
Use a desktop computer	43%	43%
Use a laptop	78%	79%
Use a tablet	55%	56%
Use a smartphone	95%	94%
Only use a smartphone	8%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	18%	18%
Are not familiar with cybersecurity measures	8%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	13%	14%

Survey Response	Rural Residents	All Respondents
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	12%	12%
Would be interested in internet or computer training classes	25%	28%
Sometimes or often use the internet for accessing healthcare information or services	83%	82%
Sometimes or often use internet to apply for public benefits	35%	33%
Sometimes or often use the internet to improve skills for work	66%	68%
Sometimes or often use the internet to search for available housing	21%	27%
Sometimes or often use the internet for accessing educational resources	74%	75%

3.a.iii.8 Low-Income Households

Low-income households represent 23 percent of the state's population and 16 percent of Digital Opportunity Survey respondents. Of respondents who identified as residing in low-income households, 65 percent also identified as belonging to a racial or ethnic minority group. Fifteen percent of public meeting attendees identify as or represent organizations serving low-income households. Several organizations serving low-income households participated in the public engagement model described in *Chapter 4*, including libraries, school districts, philanthropic organizations and others. For a full list of organizations, see *Appendix D: Stakeholder Engagements and Participants.*

Figure 10: Low-Income Households in Texas by County[40]



The South Texas (37%), Upper Rio Grande (32%), and Southeast (28%) regions have the highest proportion of low-income households.

Findings:

Cost of internet service, access to devices, digital literacy and cybersecurity awareness are all barriers to broadband adoption facing low-income households. Survey respondents belonging to low-income households report using the internet to apply for public benefits and to search for available housing at some of the highest rates compared to other covered and underserved populations. According to the results of the Digital Opportunity Survey, cost is the primary barrier to connecting to the internet at home for low-income individuals, as opposed to internet availability or adequacy. Low-income households rely on mobile data plans and smartphones only to connect to the internet at among the highest rates of covered and underserved populations.

[40] U.S. Department of Commerce. (n.d.). U.S. Census Bureau American Community Survey five-year estimates (2017-2021). Table C17002 Ratio of Income to poverty level. **https://www.census.gov/data/developers/data-sets/acs-5year.html**

Low-income households are the most aware of broadband affordability programs and ACP among covered and underserved populations, next to unhoused individuals, yet they are among the highest covered or underrepresented populations not enrolled in discount programs, stating that they don't know how to apply. Strategy 3: Promote Internet Adoption, as detailed in *Chapter 5: Implementation,* will support activities to encourage and support Texans in signing up for and using the internet. Further research to understand ACP eligibility and enrollment for low-income households would shed light on this discrepancy. A participant in the Kingsville Public Meeting in the South Texas Region expressed, "ACP has a gap for families that don't meet the current financial requirements for enrollment, but still don't have the means to subscribe to internet due to lack of financial resources."

> "Something's wrong – low-income families with kids aren't subscribing to ACP."
>
> – Civic and Social Engagement Task Force Member

Low-income households expressed the lowest degree of confidence among covered and underserved populations with basic digital skills such as connecting a computer or smartphone to a Wi-Fi network. If they have trouble with computers or the internet, they have some of the lowest rates of access to technical support among covered and underserved populations. They also have some of the lowest rates of adoption of cybersecurity measures of covered or underserved populations.

Addressing cost, access to devices, digital literacy and cybersecurity awareness could provide opportunities to improve health, educational and workforce outcomes; increase access to and adoption of internet services; and increase engagement in using the internet to access essential services and civic and social processes.

The table below shows low-income households' responses to the Digital Opportunity Survey as compared to all survey responses.

Table 9: Digital Opportunity Survey Responses: Respondents Who Self-Identified as Belonging to Low-Income Households

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Low-Income Households	All Respondents
Do not subscribe because services are not available or adequate	43%	60%
Report that speed and reliability of internet service at home is inadequate	38%	36%
Download speeds below 25 Mbps	31%	28%
Upload speeds below 3 Mbps	17%	17%
Do not subscribe because services are too expensive	75%	59%
Pay more than $100 for monthly internet	35%	41%
Have heard of ACP	47%	40%
Have heard of discounted internet by ISPs	21%	21%
Are not enrolled in discount programs because they don't know how to apply	28%	9%
Only use a mobile data plan for internet access at home	18%	10%
Use a desktop computer	30%	43%
Use a laptop	60%	79%
Use a tablet	44%	56%
Use a smartphone	90%	94%
Only use a smartphone	20%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	25%	18%
Are not familiar with cybersecurity measures	25%	10%

Survey Response	Low-Income Households	All Respondents
Do not have or don't know if they have cybersecurity measures on the devices they use	27%	14%
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	19%	12%
Would be interested in internet or computer training classes	44%	28%
Sometimes or often use the internet for accessing healthcare information or services	77%	82%
Sometimes or often use internet to apply for public benefits	61%	33%
Sometimes or often use the internet to improve skills for work	68%	68%
Sometimes or often use the internet to search for available housing	41%	27%
Sometimes or often use the internet for accessing educational resources	78%	75%

3.a.iv Underserved Populations

The BDO gathered additional information about communities in Texas that are not part of covered populations as defined in the Digital Equity Act NOFO but are considered underserved populations that have historically faced barriers to digital opportunity. These include immigrants, tribal communities and unhoused individuals.

3.a.iv.1 Immigrants

Immigrants represent 17 percent of the state's population and 5 percent of the Digital Opportunity Survey respondents. Of survey respondents who self-identified as immigrants, 82 percent also identified as belonging to a racial or

ethnic minority group and 33 percent also identified as an individual with limited English proficiency. Several organizations that participated in the public engagement process described in *Chapter 4* also serve immigrant communities, including healthcare organizations, libraries, school districts and nonprofit organizations. For a full list of organizations see *Appendix D: Stakeholder Engagements and Participants.*

Findings:

Survey respondents identifying as immigrants cited cost as the primary barrier to connecting to the internet at home. Immigrants are less aware of ACP and discounted internet programs than all survey respondents and are the among the highest covered or underserved population not enrolled because they do not know how to apply. They use devices at about the same or lower rates than all survey respondents and rely on a smartphone only at a higher rate than all survey respondents. Immigrants have less technical support and cybersecurity familiarity than all survey respondents but are among the most interested in internet or computer training classes. Immigrants are among the top covered and underserved populations that use the internet to improve skills for work, access educational resources and search for available housing.

The table below shows the Digital Opportunity Survey responses of individuals who self-identified as immigrants, as compared to all survey respondents.

Table 10: Digital Opportunity Survey Responses: Respondents Who Self-Identified as Immigrants

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Immigrants	All Respondents
Do not subscribe because services are not available or adequate	**35%**	**60%**

Survey Response	Immigrants	All Respondents
Report that speed and reliability of internet service at home is inadequate	32%	36%
Download speeds below 25 Mbps	17%	28%
Upload speeds below 3 Mbps	8%	17%
Do not subscribe because services are too expensive	78%	59%
Pay more than $100 for monthly internet	33%	41%
Have heard of ACP	35%	40%
Have heard of discounted internet by ISPs	17%	21%
Are not enrolled in discount programs because they don't know how to apply	19%	9%
Only use a mobile data plan for internet access at home	8%	10%
Use a desktop computer	38%	43%
Use a laptop	80%	79%
Use a tablet	51%	56%
Use a smartphone	94%	94%
Only use a smartphone	11%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	21%	18%
Are not familiar with cybersecurity measures	17%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	18%	14%
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	10%	12%

Survey Response	Immigrants	All Respondents
Would be interested in internet or computer training classes	48%	28%
Sometimes or often use the internet for accessing healthcare information or services	81%	82%
Sometimes or often use internet to apply for public benefits	36%	33%
Sometimes or often use the internet to improve skills for work	83%	68%
Sometimes or often use the internet to search for available housing	43%	27%
Sometimes or often use the internet for accessing educational resources	84%	74%

3.a.iv.2 Tribal Communities

Tribal communities represent 1 percent of the state's population and 1 percent of respondents to the Digital Opportunity Survey. Among survey respondents who self-identified as belonging to tribal communities, 76 percent also identified as belonging to a racial or ethnic minority group and 42 percent also identified as residing in a rural community. To align the Digital Opportunity Plan with the plans of tribal governments and gain perspective on the digital opportunity experiences of Texas' tribal communities, BDO conducted tribal consultations outlined in *Chapter 4*. At the BDO's public meetings, 3 percent of attendees identified as or represented organizations serving tribal communities.

Findings:

Availability and reliability of internet and lack of technical support are all barriers to in-home broadband adoption tribal communities face. Tribal consultations revealed that lack of reliable internet and affordable internet options are primary concerns for tribal governments in Texas. Tribal communities expressed

concerns about providing quality education for students and workforce opportunities for their members as more resources transition to online platforms. Tribal consultations further identified the need for information sharing between the BDO and tribal governments to better capture and address broadband gaps on tribal lands.

According to the results of the Digital Opportunity Survey, tribal communities lack access to available or adequate internet and are among the top covered and underserved populations that feel their internet is not adequate for their needs. While survey respondents do not cite cost as a primary barrier to internet access, in the tribal consultations, leaders identified cost as a barrier for some tribal members to subscribe to internet service at home.[41] Tribal communities have some awareness of ACP and discounted internet programs and use devices at about the same or higher rates than all survey respondents.

The Digital Opportunity Survey responses show that tribal community members have lower rates of access to technical support than other covered and underrepresented populations. They report higher awareness of cybersecurity measures, but self-report lower use of cybersecurity measures on their devices than all survey respondents. The survey sample size was too low to assess tribal communities' comfort with digital literacy skills and interest in internet or computer training classes.

Tribal community members use the internet at about the same rate as all survey respondents to access healthcare and education information, and to improve skills for work. Among covered and underserved populations, they use the internet the least to search for available housing and apply for public benefits.

The table below shows tribal community members' responses to the Digital Opportunity Survey as compared to all survey responses.

[41] Alabama Coushatta and Kickapoo Tribal Consultation Meeting Minutes

Table 11: Digital Opportunity Survey Responses: Respondents Who Self-Identified as Belonging to Tribal Communities

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Tribal Communities	All Respondents
Do not subscribe because services are not available or adequate	82%	60%
Report that speed and reliability of internet service at home is inadequate	47%	36%
Download speeds below 25 Mbps	Sample size was too low	28%
Upload speeds below 3 Mbps	Sample size was too low	17%
Do not subscribe because services are too expensive	55%	59%
Pay more than $100 for monthly internet	45%	41%
Have heard of ACP	43%	40%
Have heard of discounted internet by ISPs	23%	21%
Only use a mobile data plan for internet access at home	14%	10%
Use a desktop computer	55%	43%
Use a laptop	81%	79%
Use a tablet	59%	56%
Use a smartphone	96%	94%
Only use a smartphone	8%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	28%	18%
Are not familiar with cybersecurity measures	4%	10%

Survey Response	Tribal Communities	All Respondents
Do not have or don't know if they have cybersecurity measures on the devices they use	**15%**	**14%**
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	**Sample size was too low**	**12%**
Would be interested in internet or computer training classes	**Sample size was too low**	**28%**
Sometimes or often use the internet for accessing healthcare information or services	**84%**	**82%**
Sometimes or often use internet to apply for public benefits	**34%**	**33%**
Sometimes or often use the internet to improve skills for work	**69%**	**68%**
Sometimes or often use the internet to search for available housing	**25%**	**27%**
Sometimes or often use the internet for accessing educational resources	**76%**	**75%**

3.a.iv.3 Unhoused Individuals

Unhoused individuals represent 1 percent of the state's population[42] and 1 percent of respondents to the Digital Opportunity Survey. Of survey respondents who self-identify as unhoused, 65 percent also identify as belonging to a racial or ethnic minority group.

While unhoused individuals responded to questions about why they may not subscribe to the internet and other indicators of digital opportunity, the survey did not ask additional questions that may shed light on the unique circumstances behind why an unhoused individual may not subscribe to the internet or access

[42] U.S. Department of Housing and Urban Development Office of Community Planning and Development. (2022). The 2022 Annual Homelessness Assessment Report (AHAR) to Congress.

devices, training, cybersecurity and online public resources. Survey limitations include but are not limited to the use of the word “home” in survey questions, for example. Therefore, the conclusions regarding this population drawn from the survey data alone are limited.

Findings:

The Digital Opportunity Survey data shows that unhoused individuals rely on only smartphones and mobile plans at some of the highest rates of covered and underserved populations. A recent study, *Smartphone Technology to Empower People Experiencing Homelessness*, conducted in Austin, concluded that “access to smartphones with unlimited text, calling, data and transportation allowed participants to navigate homelessness and facilitated self-management [of health conditions].”[43] Survey responses reveal that unhoused individuals are most reliant on the internet to search for available housing, to improve skills for work and to apply for public benefits. Among covered and underserved populations, they are least reliant on the internet for accessing healthcare. The study found that access to smartphone technology could enable unhoused individuals to set and keep appointments with health and social services providers, “more easily access” basic resources like food and better meet social needs like gaining employment. Participants in the study cited their ability to charge and protect smartphone devices from the elements as barriers to continued use of their smartphones. The study suggests providing space for unhoused individuals to safely charge their devices.[43] More data on the digital opportunity experiences of unhoused individuals will enable better understanding of the barriers they face to accessing internet-enabled resources.

According to the Digital Opportunity Survey, unhoused individuals have the least support in their communities to help them if they have trouble with the internet and some of the highest rates of device use without cybersecurity measures in place among covered and underrepresented populations. The survey sample

[43] Thurman, W., Semwal, M., Moczygemba, L. R., & Hilbelink, M. (2021). Smartphone Technology to Empower People Experiencing Homelessness: Secondary Analysis. Journal of Medical Internet Research, 23(9), e27787. https://doi.org/10.2196/27787

size was too low to assess unhoused individuals' comfort with foundational digital literacy skills. However, among covered or underserved populations, unhoused individuals expressed the highest rates of interest in internet or computer training classes. Strategies 1 and 2 in *Chapter 5: Implementation* consider support for such programs.

The table below shows unhoused individuals' responses to the Digital Opportunity Survey as compared to all survey responses.

Table 12: Digital Opportunity Survey Responses: Respondents Who Self-Identified as Unhoused Individuals

Higher than all respondents	Lower than all respondents	Equal to all respondents

Survey Response	Unhoused Individuals	All Respondents
Do not subscribe because services are not available or adequate	**27%**	**60%**
Report that speed and reliability of internet service at home is inadequate	**42%**	**36%**
Download speeds below 25 Mbps	**Sample size was too low**	**28%**
Upload speeds below 3 Mbps	**Sample size was too low**	**17%**
Do not subscribe because services are too expensive	**73%**	**59%**
Pay more than $100 for monthly internet	**54%**	**41%**
Have heard of ACP	**58%**	**40%**
Have heard of discounted internet by ISPs	**25%**	**21%**
Only use a mobile data plan for internet access at home	**28%**	**10%**
Are not enrolled in discount programs because they don't know how to apply	**15%**	**9%**

Survey Response	Unhoused Individuals	All Respondents
Use a desktop computer	Sample size was too low	43%
Use a laptop	62%	79%
Use a tablet	Sample size was too low	56%
Use a smartphone	95%	94%
Only use a smartphone	27%	7%
Do not have someone in their household or community to help them if they have trouble with the internet	40%	18%
Are not familiar with cybersecurity measures	18%	10%
Do not have or don't know if they have cybersecurity measures on the devices they use	24%	14%
Are less than comfortable with connecting a computer or smartphone to a Wi-Fi network, a basic digital literacy skill	Sample size was too low	28%
Would be interested in internet or computer training classes	54%	28%
Sometimes or often use the internet for accessing healthcare information or services	72%	82%
Sometimes or often use internet to apply for public benefits	62%	33%
Sometimes or often use the internet to improve skills for work	75%	68%
Sometimes or often use the internet to search for available housing	76%	27%
Sometimes or often use the internet for accessing educational resources	81%	74%

3.a.v Economic Regions of Texas

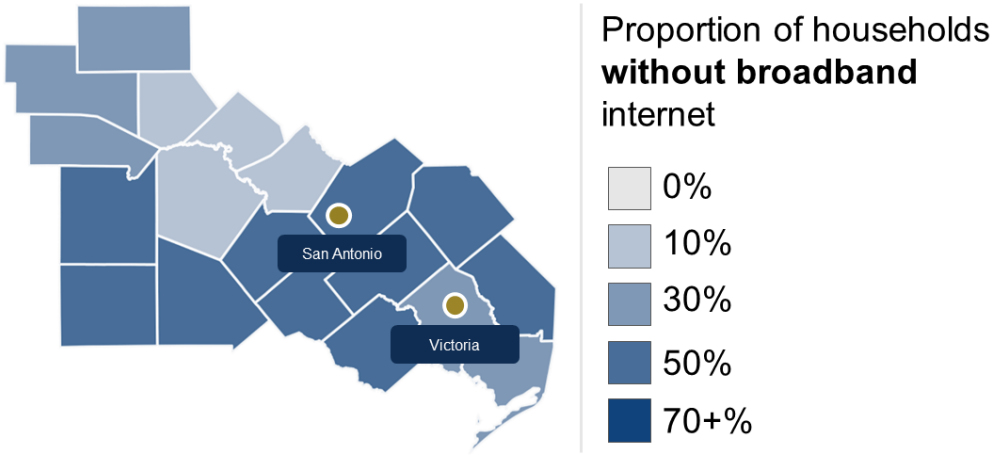
The state's unique size, diversity and geography call for a regional approach to any digital opportunity work. The following regional assessments reflect the unique barriers, opportunities, assets and needs of local Texas communities. The analysis is framed using Texas' 12 economic regions.

3.a.v.1 Alamo Region

The Alamo Region in the central part of the state includes the city of San Antonio. It has the second highest veteran population and third highest population of individuals belonging to racial and ethnic minority groups out of all 12 Texas regions. The Alamo Region has the third highest ACP enrollment rates. According to ACS estimates, 31 percent of the region does not subscribe to broadband. For more regional demographics, see Table 13.

> "You need internet first to talk about any of these resources. Reliability is an issue here. Internet is not consistent throughout the day. Lots of businesses with multiple subscriptions. It's expensive. Everything relies on internet, including the public transportation agency."
>
> – Public Meeting Attendee, Cuero, Texas

Figure 11: Households Without Broadband Access in the Alamo Region[44]-



Findings:

According to the Digital Opportunity Survey, the Alamo region is one of the best-supported regions for digital opportunity, with most survey respondents reporting higher satisfaction with internet speed and reliability, better than average download and upload speeds and fewer households paying more than $100/month for internet (see *Table 14*). Nevertheless, counties across the region face their own unique challenges and disparities. As a participant in the Cuero, Texas public meeting described, “We’re uniquely on the outskirts of four metro areas. Jobs go to them. We want to keep those jobs and those younger people here. Need enough of a cultural anchor to keep people here. Broadband is key to that.” Similarly, an organization responding to the DRMTS providing Alamo region residents with critical services shared, “Victoria Public Library is the sole public library serving the citizens of Victoria County. Victoria is centrally located in its region and as such often services citizens from surrounding counties in meeting their digital needs, as well.”

Regarding implementing strategies in the Alamo region, a participant in the San Antonio public meeting shared, “It’s not a one-size-fits-all solution. The approach

[44] U.S. Department of Commerce. (n.d.). U.S. Census Bureau American Community Survey five-year data (2017-2021). https://www.census.gov/data/developers/data-sets/acs-5year.html

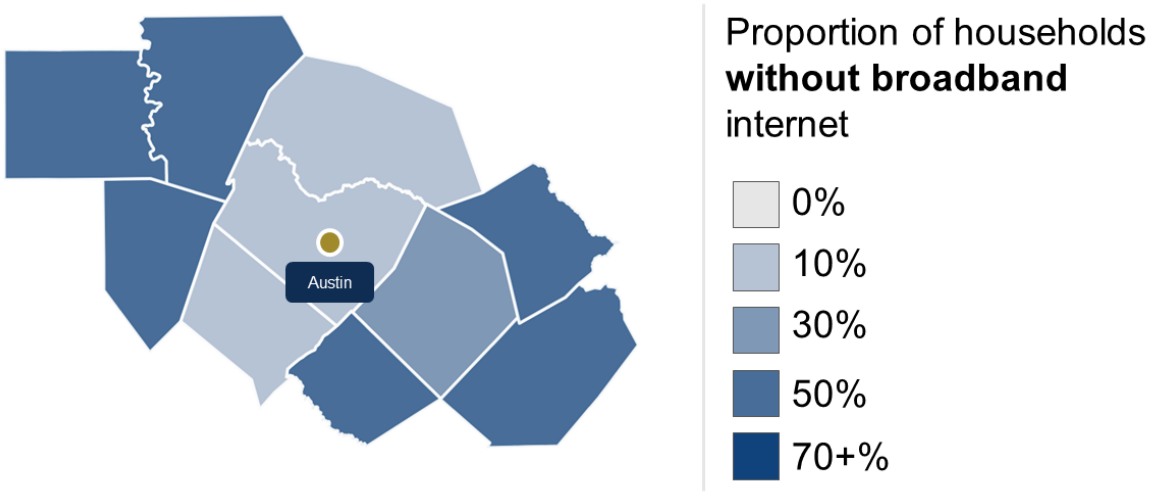
needs to consider the human side of things. You have to adapt based on who you're working with and where you're working. Use people they trust, in a language they understand, during a time of day they can make."

3.a.v.2 Capital Region

The Capital Region in the central part of the state includes the city of Austin. It has the highest median household income of all the economic regions in the state, according to ACS estimates. For more regional demographics, see *Table 13*. According to ACS estimates, the region has the lowest percentage of residents who do not subscribe to broadband, yet residents report that the speed and reliability of their internet service at home is inadequate at higher rates than all survey respondents. While this region has the highest enrollment rate in broadband service, the further away from Austin, fewer households enrolled.

> "There are transportation and language barriers to accessing resources. Even if there are resources, people can't get to them!"
>
> – Public Meeting Attendee, Burnet, Texas

Figure 12: Households Without Broadband Subscriptions in the Capital Region[45]



Because the state capital is located in this region, many organizations offering statewide services are based in the region. The highest number of responses to the DRMTS came from Travis County, where Austin is located.

Findings:

Public meeting attendees in Burnet emphasized that, “the area is not the same as Austin.” Public meeting attendees in Bastrop noted that, “affordability is a concern in both rural and urban areas.”

Organizations serving residents outside the central part of the Capital Region shared difficulties with internet reliability. A library in Burnet County shared in their response to the DRMTS, “Our area is very rural and lacks quality internet and, in some areas, internet in general. Our library, even being in the middle of the town, has times where internet is slow, especially with multiple devices using it.”

[45] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html

"Limited options and high prices contribute to feeling left out of the region's development."

– Public Meeting Attendee, Burnet, Texas

When addressing the needs of the Capital Region, Bastrop public meeting attendees shared, “trust, consistency and community partnerships are essential.”

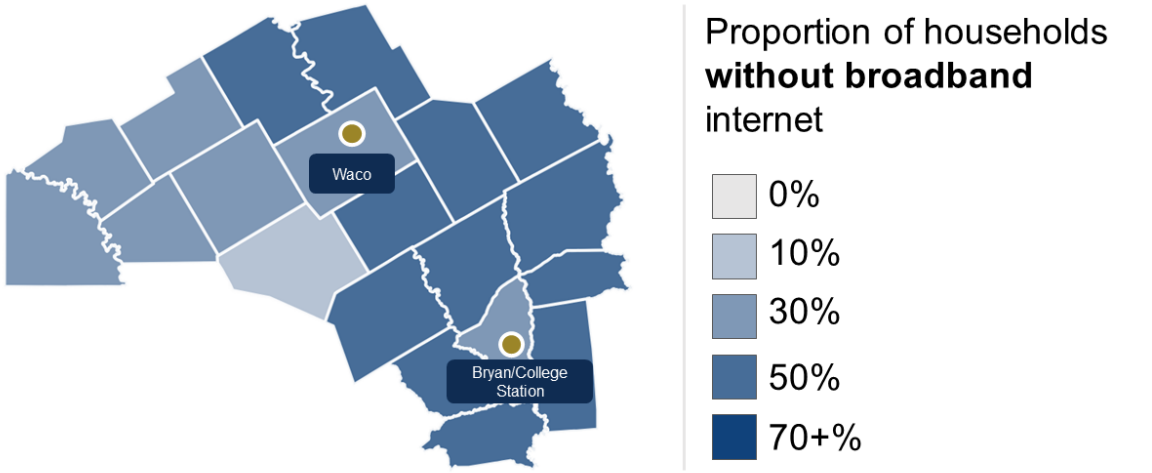
3.a.v.3 Central Texas Region

The Central Region in the central part of the state includes the cities of College Station and Waco. It has the highest veteran population of all the economic regions in the state, according to ACS estimates. For more regional demographics see *Table 13*. According to ACS estimates, the region has a higher percentage of residents who do not subscribe to broadband than the rest of the state.

"Waller County has no access to internet or cell phone. Life is completely disconnected. No access to emergency preparedness. Can’t work from home. Going to Tractor Supply parking lot to pay bills. No access to 911.”

– Public Meeting Attendee, Bryan, Texas

Figure 13: Households Without Broadband Subscriptions in the Central Texas Region[46]



Findings:

According to the results of the Digital Opportunity Survey, the Central Texas Region is one of the top three regions with households paying more than $100 for monthly internet service and reporting that the speed and reliability of their internet service is inadequate. They report the third highest concentration of respondents (28 percent) with upload speeds under three Mbps out of all 12 regions. Paper survey respondents reported using only a smartphone to connect to the internet (15 percent) at higher rates than online respondents (5 percent).

The need for education, outreach and devices were key themes to the discussions at the public meeting held in Belton. Attendees shared, “What good are resources if people don’t know about them?” and, “If you don’t have devices, it’s hard to access services.”

For example, a food pantry responding to the DRMTS located in the Central Texas Region shared, “This organization is paired with the East Texas Food Bank. ETFB is on a computer system. We cannot connect to the system

[46] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html

because we have no Wi-Fi and no computers. We all use our computers from home."

On the implementation of digital opportunity programs, public meeting attendees in Bryan emphasized, "Training needs to be tailored to the target populations. Think through what the difference means for literacy and cybersecurity for the intergenerational ways that the internet is used." And a public meeting attendee in Belton shared, "We want something that grows with the population into the future."

3.a.v.4 Gulf Coast Region

The Gulf Coast Region on the eastern gulf coast includes the city of Houston. It is the second most populous region in the state and has some of the highest populations of immigrants and individuals with limited English proficiency, according to ACS estimates. For more demographics see *Table 13*.

Findings:

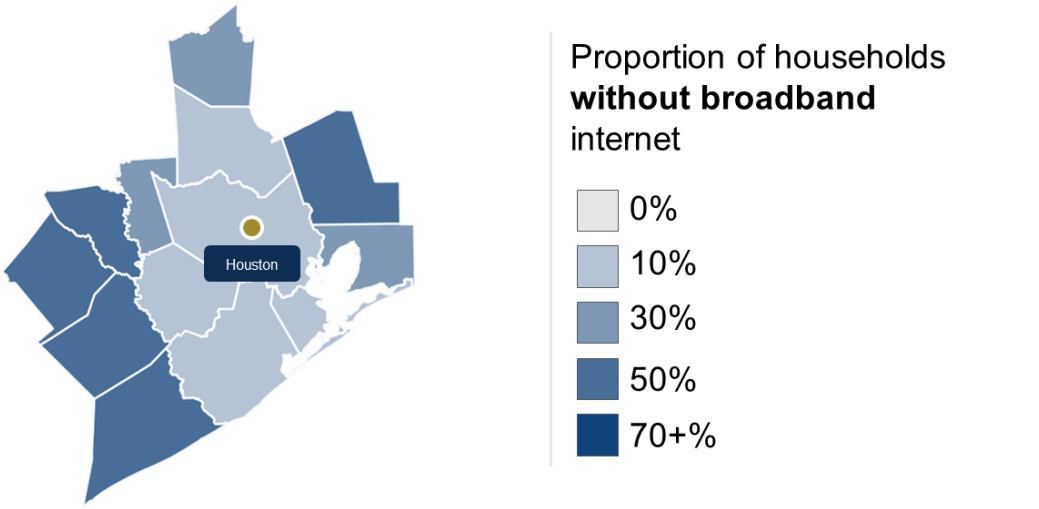
According to ACS estimates, the region has a lower percentage of households that do not subscribe to broadband than the statewide average. Results of the Digital Opportunity Survey suggest that the Gulf Coast region is one of the better-supported regions for broadband access, with most respondents reporting higher satisfaction with internet speed and reliability, and about the same average download and upload speeds as all survey respondents (see *Table 14*).

Even with some of the greatest numbers of households subscribing to broadband, the Gulf Coast Region has areas with fewer households subscribing, as well as unique geographic challenges. A participant in the public meeting in Sugar Land shared, "[There are] disparities in internet access and affordability between different areas." In addition, an attendee of the public meeting in Bay City stated, "There are discrepancies between perceived service coverage and

actual availability in rural areas. There is a desire to update the map to accurately assess internet coverage."

Organizations serving the area face similar challenges, with a school district responding to the DRMTS sharing, "COVID has moved our instructional delivery to full digital immersions. Many of our economically challenged students and rural families do not have access to broadband access … With the current budget challenges, our school district could not afford to increase our internet bandwidth to accommodate the vast increase in bandwidth demands."

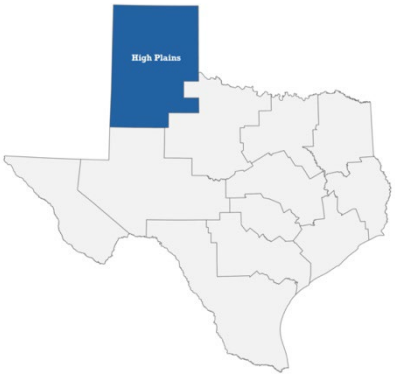
Figure 14: Households Without Broadband Subscriptions in the Gulf Coast Region[47]



In this hurricane-prone region, the need for reliable communication infrastructure is a safety concern. When implementing digital opportunity programming in the Gulf Coast Region, Sugar Land public meeting attendees expressed the "need for education, information sharing and collaboration among stakeholders."

[47] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html

3.a.v.5 High Plains Region

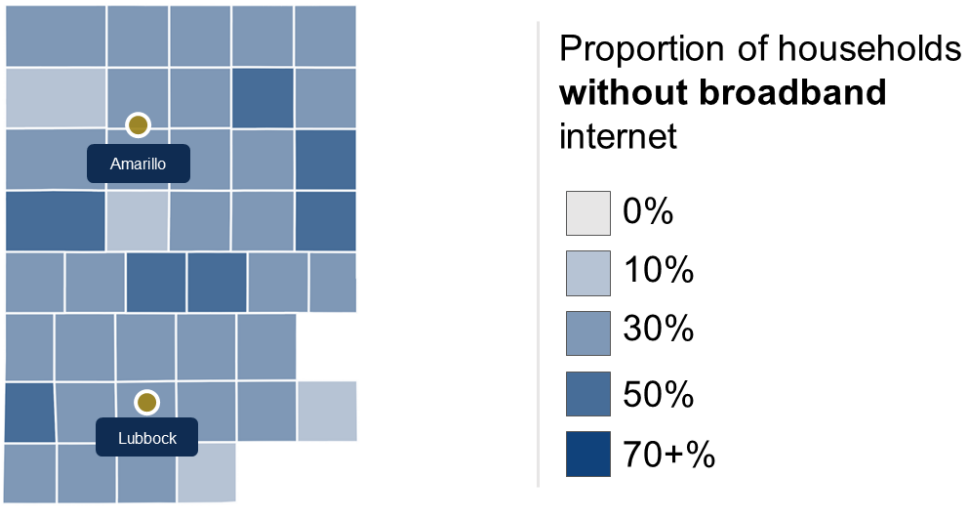


The High Plains Region occupies the northern "panhandle" of the state and includes the cities of Amarillo and Lubbock. It is one of the least populous regions in the state. For more demographics see Table 13. A public meeting attendee in Borger shared this snapshot: "This region is the top of the state and the bottom of the list for a lot of these programs… Even though we do not have the highest population in the state, with I-40 and I-27 there's a lot of folks coming through our region. The same with rail. It's important to have broadband from that perspective, too."

Findings:

According to ACS estimates, the region has a higher percentage of households that do not subscribe to broadband than the statewide average. Yet Digital Opportunity Survey respondents report higher satisfaction with internet speed and reliability as compared to all respondents, and about the same average download and upload speeds as all survey respondents (see Table 14).

Figure 15: Households Without Broadband Subscriptions in the High Plains Region[48]



> "In our rural areas we have some good build-out, but the cost to keep that service running will look different than in urban areas. How will we keep those services ongoing long-term? How do we help our providers stay in those rural communities? In the long term, how do we make sure that affordability stays a top priority?"
>
> – Public Meeting Attendee, Lubbock, Texas

While survey and ACS data shows the region as relatively well serviced, in the Borger public meeting, participants expressed a need for redundancy. They note that there are differences in advertised speed vs. actual speed and businesses can't afford to lose connectivity because customers can't pay without a connection. Many businesses pay for multiple services in case one internet provider goes down, noting, "When the internet goes down, these communities are sitting ducks." A county judge in the region responding to the DRMTS

[48] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

shared, “Lack of digital access affects our law enforcement, fire departments, EMS as well as residents being able to communicate via cellphones in numerous locations within the county.”

Lubbock public meeting attendees shared a need for physical spaces and resources to expand collective digital literacy: “There is a lack of knowledge and lack of trust of resources available. We need to build a community of trusted physical spaces where people can come together and learn.” Similarly, a Borger public meeting attendee shared, “There’s a need for broad digital education. For example, how do you know if the service is too expensive? There is a digital skills gap. People are proficient on tablets and phones but then they get in front of a desktop and they freeze. Amarillo College has cybersecurity classes and certificates. Libraries have trainings.”

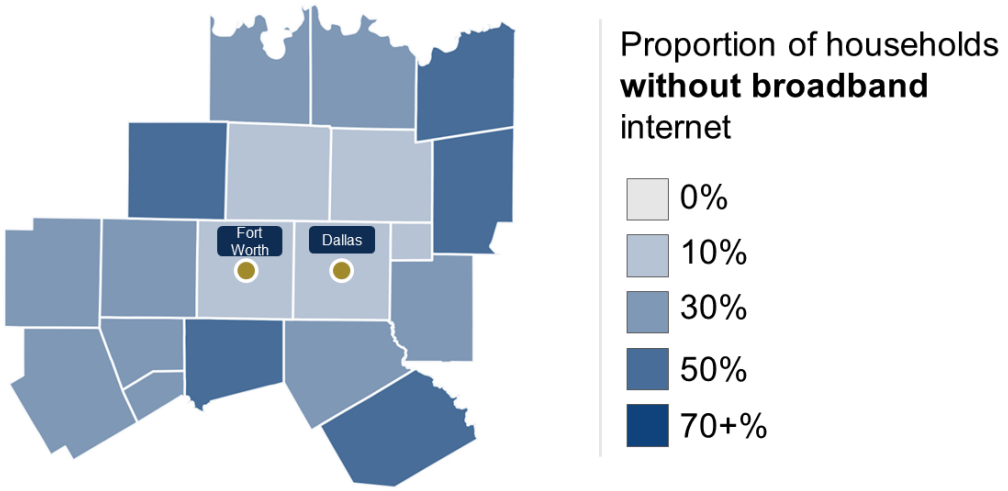
3.a.v.6 Metroplex Region

Located in the north-central part of the state, the Metroplex Region is the most populous in Texas, as home to the Dallas-Fort Worth Metropolitan Area. The Metroplex Region has among the highest median incomes in the state. For more demographics see Table 13.

Findings:

According to ACS estimates, the region has a higher percentage of households that subscribe to broadband than the statewide average. Metroplex Region residents responding to the Digital Opportunity Survey reported higher satisfaction with their internet service and relatively faster speeds than all respondents on average. However, as in other regions, rates of broadband adoption and satisfaction with service decline as one moves away from urban centers.

Figure 16: Households Without Broadband Subscriptions in the Metroplex Region[49]



A participant in the Sherman public meeting described the experiences of residents with less reliable internet: “Residents are piecing together their internet access with multiple points of access, mostly via hotspots. Line of sight is an issue once you leave town.” Even with hotspots to connect, a Lewisville public meeting attendee shared that people also need devices: “Hotspots are basically a paperweight if the community doesn’t have devices.” The Metroplex Region is one of the top two regions with survey respondents who only use a smartphone to connect to the internet.

> "We are so close to areas with faster speeds, but they won't come."
>
> – Public Meeting Attendee, Sherman, Texas

According to the Comptroller’s 2022 economic report, the Metroplex Region’s population grew about 20 percent from 2010 to 2020.[50] An attendee of the Metroplex Region’s virtual public meeting shared the challenges of infrastructure keeping up with the growth: “So much work is

[49] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

[50] Texas Comptroller of Public Accounts. (2022). The Metroplex Region: 2022 Regional Report. https://comptroller.texas.gov/economy/economic-data/regions/2022/metroplex.php

being done in building out in their community, but the area is growing so quickly that they're behind. Playing catch-up is a challenge and providers make promises then don't follow through. [There is a] need for oversight."

Lewisville public meeting attendees suggested that organizations that typically offer resources, like libraries, "lack the same resources and capacity that urban ones have – digital navigation is overlooked." They also acknowledged the need for education along with devices and resources: "For example, in Wise County, once they had hotspots available, there were still digital literacy issues."

Still, there are organizations in the region working to overcome these challenges. For example, Goodwill of North Central Texas shared in their response to the DRMTS, "We have mobile crews that do digital literacy classes across multiple cities. We partner with TWC to provide services on a mobile bus in rural areas."

3.a.v.7 Northwest Region

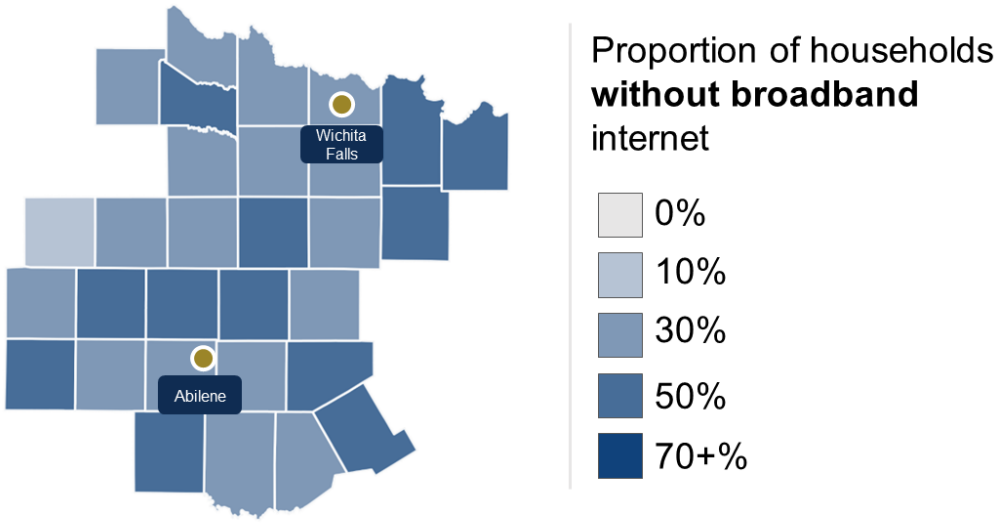
The Northwest Region in the central plains includes the cities of Abilene and Wichita Falls. It is among the least populous regions in the state, with relatively high populations of aging individuals, incarcerated individuals, individuals with disabilities, rural residents and veterans. For more demographics see *Table 13*.

Findings:

According to ACS estimates, the Northwest Region has a higher percentage of households that do not subscribe to broadband than average statewide. Digital Opportunity Survey respondents reported lower satisfaction with their internet service and some of the slowest internet speeds in the state. A participant in the Wichita Falls meeting expressed the challenges rural residents face: "In town,

affordability is an issue, but they have options. In rural areas, they're challenged by both availability and affordability."

Figure 17: Households Without Broadband Subscriptions in the Northwest Region[51]



> "Starlink is the only option. It's expensive but I'd pay whatever because I need it. Almost the whole town is on satellite."
>
> – Public Meeting Attendee, Wichita Falls, Texas

Reliability is also an issue. Participants in the Clyde public meeting shared that insufficient broadband is impacting their essential services: "Fire doesn't have service… EMS has unreliable service. Doctors don't want to stay." Similarly, a hospital district in the region shared in the DRMTS, "Without high-speed broadband, it limits access to telehealth medicine in rural areas."

[51] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

Clyde public meeting participants shared the benefits to the economy that universal digital opportunity would bring: “Technology plays a central role in agriculture. The new equipment is all technology driven. They need the infrastructure to support it.” They also shared their challenges and considerations for supporting educational institutions: “All school safety measures require a connection. Not all rural schools have the necessary speeds. Schools can't share services because of security. Students receive devices and hotspots in rural communities, but they're limited.”

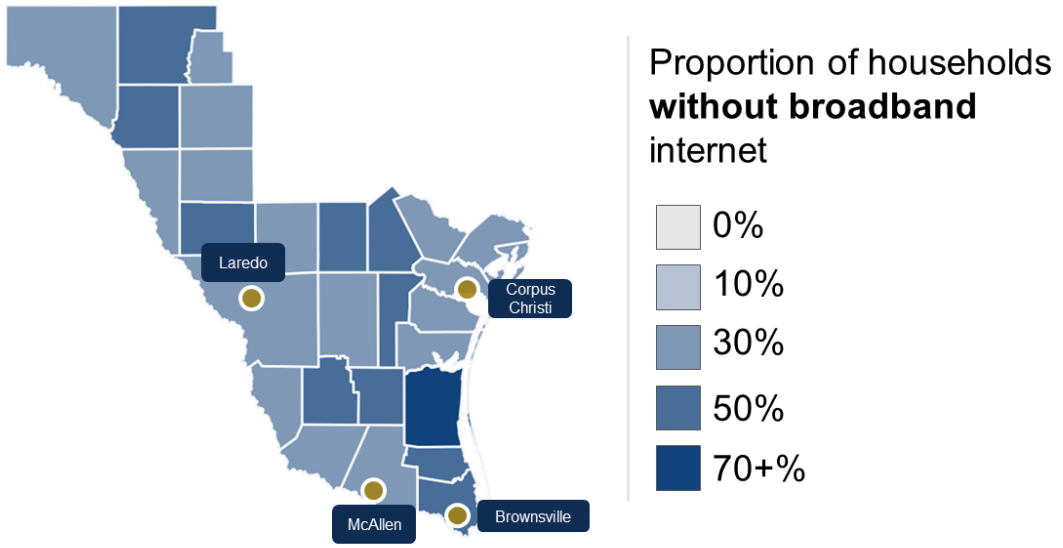
3.a.v.8 South Texas Region

The South Texas Region includes the cities of Brownsville, Corpus Christi, Laredo and McAllen. It has the highest population of low-income households, racial or ethnic minorities and some of the highest populations of immigrants and individuals with limited English proficiency. For more demographics see *Table 13*.

Findings:

According to ACS estimates, the region has a relatively high share of households that do not subscribe to broadband as well as a high share of households dependent on smartphones for accessing the internet. While this region has the lowest median income and the highest percentage of eligible households enrolled in ACP, a Kingsville public meeting attendee shared that more households could benefit from discounted internet: “ACP has a gap for families that don’t meet the current financial requirements for enrollment but still don’t have the means to subscribe to internet due to lack of financial resources.”

Figure 18: Households Without Broadband Subscriptions in the South Texas Region[52]



According to Digital Opportunity Survey data, the NTIA Digital Equity Population Viewer, and ACS data, this region has some of the highest digital opportunity needs, explored further in Section 3.4.

A Kingsville public meeting attendees shared, “[There is] a lack of knowledge on how to sign up for the internet. The area has a lot of fear and doesn't necessarily know why they need it or don’t want to use computers. They prefer face-to-face interaction.” Additionally, a Weslaco public meeting attendee suggested, “The ACP program gap needs to be addressed. The state could fund affordability programs through the Digital Opportunity Plan.”

While this region has some of the highest needs for digital opportunity, resources like public libraries offer a range of tools to support residents. The McAllen Public Library shared in the DRMTS, “The library loans ‘Job Fair in a Bag’ kits. These consist of a laptop, hotspot device and other resources intended to help the individual gain employment. The organization also offers computer literacy courses to assist those in learning and development of how to

[52] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

use the computer to its fullest potential." A further description of existing resources in the South Texas Region is in Section 3.4.

3.a.v.9 Southeast Texas Region

The Southeast Texas Region is in the easternmost part of the state and includes the city of Beaumont. According to ACS estimates, it has the highest population of individuals with disabilities and some of the highest populations of aging individuals, low-income households and rural residents. For more demographics see *Table 13*.

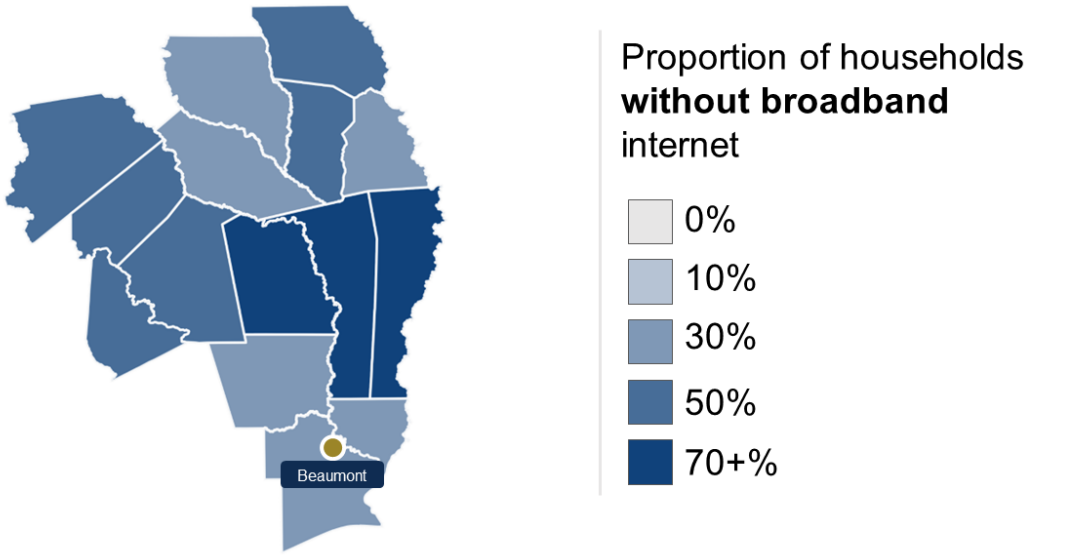
> "Rural America has taken a step backward. Our landline telephone was sufficient up until a few years ago to communicate with others. Since new connections have stopped, our infrastructure communications have been abandoned for economic reasons. But now, we're left without any sort of connection. No landline. No internet. No cell phone service."
>
> – Public Meeting Attendee, Lufkin, Texas

Findings:

According to ACS estimates, the region has one of the highest percentages of households that do not subscribe to broadband. Respondents to the Digital Opportunity Survey from this region have some of the slowest internet speeds in the state, and highest dissatisfaction with the reliability and adequacy of internet service. On reliability, a Jasper public meeting attendee shared, "Trees are an issue! We're behind the timber curtain." A public meeting attendee in Lufkin also stated, "The weather is such an issue, but we need redundancy for other factors

too, since nearby construction can wipe fiber out unexpectedly. It shuts the city down."

Figure 19: Households Without Broadband Subscriptions in the Southeast Texas Region[53]



The region has among the highest proportions of residents paying more than $100 a month for service and using only a mobile plan to connect to the internet at home. Jasper public meeting attendees described, "It's too expensive or we don't have access. Rural does not have the same access as urban. Density in a rural area is different than in an urban area. It's not just a simple numerator over denominator."

When it comes to implementation, a Lufkin public meeting resident shared, "Give us the gold standard here in East Texas. We don't want to be behind. We want to be the best in industry, the same as the metro areas, so that we lead, rather than continue to catch up." A Jasper public meeting attendee shared additional barriers: "Digital resources/opportunities are lacking here. We talked about libraries, but there isn't a lot beyond libraries. Mental health and telehealth could

[53] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

be huge for the region. All the service in the world won't help you if you don't have access to transportation to get you there."

While libraries already offer resources, they could use additional support for their programs. A library in the region shared in the DRMTS, "Even though we offer computer classes, when someone needs assistance, they need it immediately. They might be in crisis mode at that time. Not all libraries have the ability to provide one-on-one assistance. We are fortunate that we have several Spanish-speaking staff members, but we are limited in our ability to help our Somali and Burmese population … For libraries, the best support we can get is funding for hotspots and internet-accessible devices and personnel to provide one-on-one assistance."

3.a.v.10 Upper East Region

The Upper East Region in the northeast corner of the state includes the cities of Longview, Texarkana and Tyler. It has the highest population of aging individuals and rural residents, and some of the highest populations of incarcerated individuals and individuals with disabilities. For more demographics see *Table 13*.

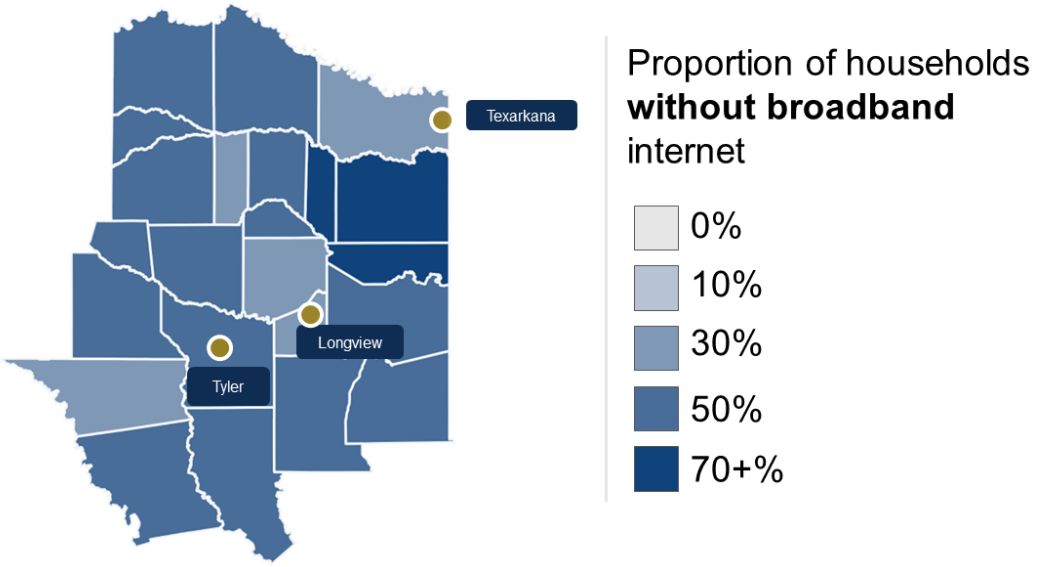
> "The first thing the county gets asked when people move is, 'What is the internet like?'"
>
> – Public Meeting Attendee, Longview, Texas

Findings:

According to ACS estimates, the region has the highest percentage of households that do not subscribe to broadband. In the Digital Opportunity Survey, this region has the slowest speeds in the state and highest

dissatisfaction with the reliability and adequacy of internet service. The region has the highest proportions of residents paying more than $100 a month for service and using only a mobile plan to connect to the internet at home.

Figure 20: Households Without Broadband Subscriptions in the Upper East Texas Region[54]



As a participant in the Longview public meeting said, “The service is not reliable, but residents have to pay for what is there because they need it to work. One resident pays $500 per month for Starlink business because Starlink residential is not available and nothing else works.”

Texarkana public meeting participants shared that internet is critical for accessing essential services in the region: “Healthcare is important for connectivity. For example, two counties in the area do not have primary care providers. There is a lack of access.”

[54] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

When it comes to implementation, Longview residents called for more options: “There are not many options for digital inclusion – schools have free Wi-Fi. One resident parks in the airport parking lot to get service.”

Similarly, a library in the region shared in the DRMTS: “We are desperately looking for grants to cover the cost of our hot spots.” Responses to the DRMTS revealed collaboration among organizations in the region. One organization shared that they’re working “as part of the Deep East Texas Cohort to bridge the digital divide for extremely rural areas of the state. We are working with the Maud Public Library towards sustainability for small communities, which involves utilizing the Public Library as a hub for many services.”

3.a.v.11 Upper Rio Grande Region

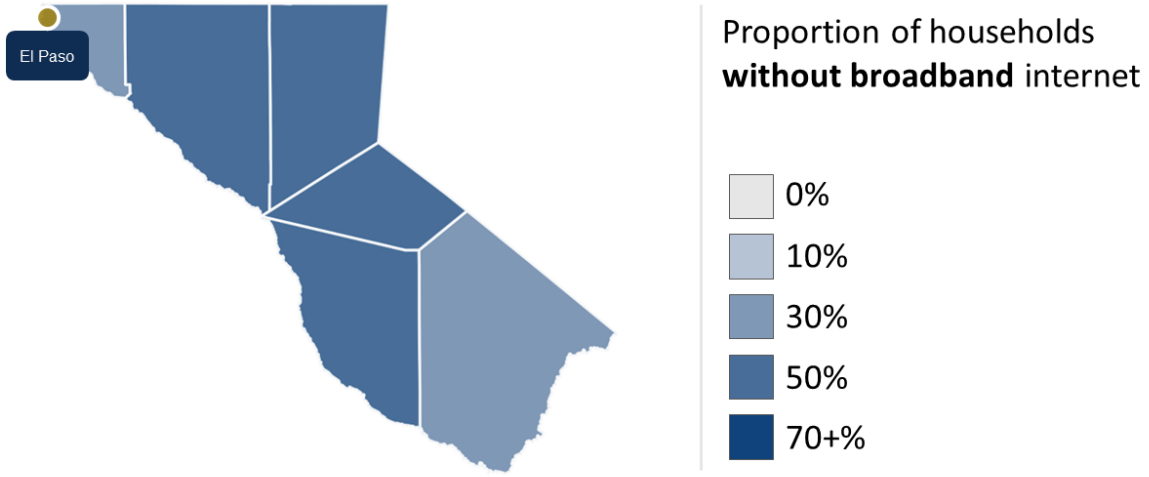
The Upper Rio Grande Region in westernmost Texas includes El Paso. It has the highest population of immigrants, individuals with limited English proficiency and racial or ethnic minorities. It has among the lowest median incomes in the state and among the highest proportions of eligible households enrolled in ACP. For more demographics see *Table 13*.

> “Living out here can be isolating and lacking connection can reinforce and exacerbate that isolation. Broadband can lower barriers to communication and interaction. It's a public safety issue. There are cell phone dead zones everywhere. You need to be able to make contact.”
>
> – Public Meeting Attendee, Alpine, Texas

Findings:

According to ACS estimates, the region has about the same percentage of households that do not subscribe to broadband, though connection is not equal across counties in the region.

Figure 21: Households Without Broadband Subscriptions in the Upper Rio Grande Region[55]



In this analysis, the BDO considers both online and paper survey responses. This region had the highest percentage of paper survey respondents (51 percent) as compared to online survey responses. In the paper Digital Opportunity Survey, this region has about the same dissatisfaction with the reliability and adequacy of internet service as all paper survey respondents. The region has the highest proportion of paper survey respondents that rely on cellphones as their only device with which to access the internet.

An El Paso public meeting attendee expanded on the barriers to access, “Internet in the community is very expensive and there is often not any other

[55] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

option. Mountainous terrain makes it hard to put in technology. The distance between homes and low-density population makes it expensive to build."

When it comes to implementation, El Paso public meeting attendees shared, "Schools and libraries end up picking up the ball when funding runs out. The community has become dependent on it." A school district in this region responding to the DRMTS emphasized how much their community relies on them, "We are the hub of this small, rural, isolated community. We employ or teach about half of the town's population."

On adoption, an Alpine public meeting attendee said, "People want to connect but don't know how they can get it. People need to feel confident and to have the education to begin their digital literacy journey."

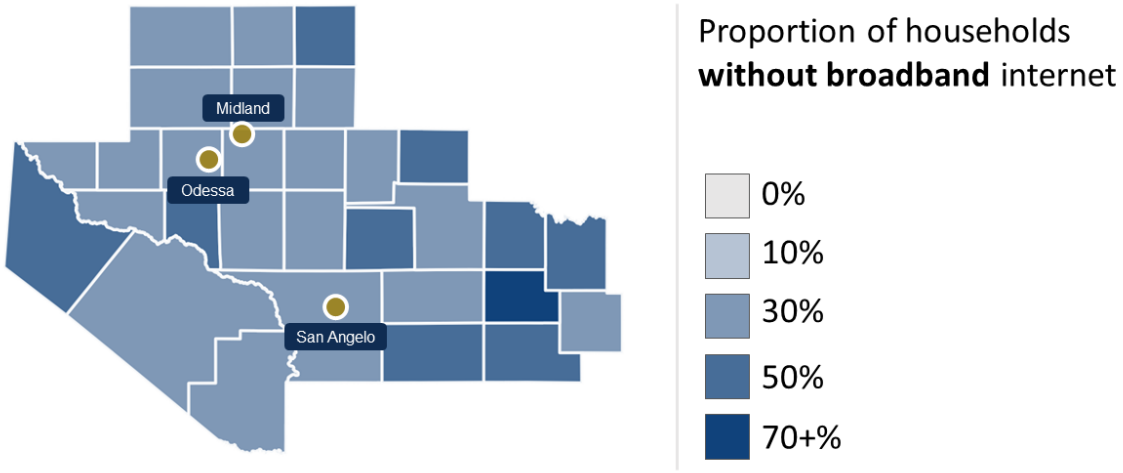
3.a.v.12 West Texas Region

The West Texas Region is in the western part of the state and includes the cities of Midland, Odessa and San Angelo. It is among the least populous regions in the state and the lowest number of eligible households enrolled in ACP. For more demographics see *Table 13*.

Findings:

According to ACS estimates, this region has a higher percentage of households that do not subscribe to broadband as compared to statewide averages. In the Digital Opportunity Survey, respondents reported lower satisfaction with their internet service and some of the slowest internet speeds in the state. A participant in the Mertzon public meeting emphasized that the region needs internet first, then they can approach adoption: "Until we have a better connection, we can't focus on digital literacy. Some barriers include low density, cost … workforce development, map issues and difficulties trenching in the geography."

Figure 22: Households Without Broadband Subscriptions in the West Texas Region[56]



While Digital Opportunity Survey respondents reported better satisfaction with the reliability and adequacy of internet than statewide respondents, participants in the Midland public meeting shared, “Internet is unreliable. People may have internet, but it is not always dependable. Affordability is an issue and so is mapping. There is a need for good, quality data. Low density needs it the most, particularly south of I-20.”

When it comes to implementation, a Midland public meeting participant shared, “You don’t know what you don’t know – need an understanding of what would be provided with increased access.” Similarly, a Mertzon public meeting attendee shared “[We] need to educate people on what the internet can do for them; communities will thrive once there is a better understanding.” Participants suggested that trusted community voices, like school districts and health care providers, may provide good ways to reach people.

A school district in the region shared in the DRMTS some resources that they currently provide to residents: “We help families enroll in ACP. We also provide a list of ISPs for families based on the addresses. We also provide a device for our students and MIFI [hotspot device] if needed.”

[56] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html.

Table 13: Demographics in Texas by Region[57]

Blue highlighting indicates high metrics in a category relative to other regions.

Region	Population	Households	Median Household Income	Aging Individuals	Immigrants	Incarcerated Individuals	Individuals with Disabilities	Individuals with Limited English Proficiency
Alamo	2.9 M	1.0 M	$65,000	19%	11%	1%	14%	5%
Capital	2.4 M	0.9 M	$84,000	17%	15%	0%	10%	4%
Central Texas	1.3 M	0.5 M	$55,000	19%	8%	2%	13%	4%
Gulf Coast	7.3 M	2.5 M	$76,000	17%	23%	1%	10%	9%
High Plains	0.9 M	0.3 M	$56,000	19%	10%	2%	12%	4%
Metroplex	8.1 M	2.9 M	$79,000	17%	18%	0%	10%	6%
Northwest	0.6 M	0.2 M	$52,000	23%	6%	3%	16%	3%
South Texas	2.4 M	0.8 M	$45,000	17%	20%	1%	13%	15%
Southeast Texas	0.8 M	0.3 M	$51,000	23%	7%	2%	17%	3%
Upper East	1.2 M	0.4 M	$52,000	25%	7%	3%	15%	2%
Upper Rio Grande	0.9 M	0.3 M	$49,000	17%	24%	0%	13%	22%
West Texas	0.7 M	0.2 M	$66,000	17%	12%	1%	11%	6%
State of Texas	29.0 M	11.1 M	$72,000	18%	17%	1%	11%	7%

[57] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html

Region	Population	Households	Median Household Income	Low-Income Households	Racial or Ethnic Minorities	Rural Residents	Tribal Communities	Veterans	Eligible Households Enrolled in ACP
Alamo	2.9 M	1.0 M	$65,000	23%	64%	21%	2%	7%	44%
Capital	2.4 M	0.9 M	$84,000	16%	46%	21%	2%	5%	29%
Central Texas	1.3 M	0.5 M	$55,000	26%	44%	24%	2%	8%	31%
Gulf Coast	7.3 M	2.5 M	$76,000	22%	63%	11%	1%	4%	29%
High Plains	0.9 M	0.3 M	$56,000	26%	48%	44%	2%	5%	23%
Metroplex	8.1 M	2.9 M	$79,000	19%	52%	12%	2%	5%	39%
Northwest	0.6 M	0.2 M	$52,000	23%	31%	58%	2%	7%	31%
South Texas	2.4 M	0.8 M	$45,000	37%	87%	24%	1%	3%	73%
Southeast Texas	0.8 M	0.3 M	$51,000	28%	38%	52%	2%	6%	39%
Upper East	1.2 M	0.4 M	$52,000	25%	32%	75%	2%	6%	24%
Upper Rio Grande	0.9 M	0.3 M	$49,000	32%	87%	10%	2%	6%	54%
West Texas	0.7 M	0.2 M	$66,000	21%	58%	34%	1%	5%	20%
State of Texas	29.0 M	11.1 M	$72,000	23%	58%	25%	1%	5%	38%

Table 14: Texas Digital Opportunity Survey Results by Region

Region	In-Person Public Meeting Attendees	Online Survey Responses	Paper Survey Responses	% households that do not subscribe to broadband (ACS)	Report that speed and reliability of internet service at home is inadequate	Download speeds below 25 Mbps	Upload speeds below 3 Mbps
Alamo	9%	16%	Sample size was too low	31%	25%	20%	9%
Capital	14%	11%	Sample size was too low	22%	43%	27%	14%
Central Texas	5%	9%	25%	38%	51%	37%	28%
Gulf Coast	5%	12%	Sample size was too low	27%	40%	26%	16%
High Plains	8%	9%	Sample size was too low	36%	25%	26%	13%
Metroplex	11%	13%	16%	27%	32%	22%	11%
Northwest	4%	5%	5%	42%	43%	41%	25%
South Texas	9%	8%	Sample size was too low	44%	28%	18%	Sample size was too low
Southeast Texas	10%	4%	Sample size was too low	46%	52%	45%	45%
Upper East	9%	5%	Sample size was too low	52%	67%	50%	43%
Upper Rio Grande	8%	3%	51%	35%	32%	Sample size was too low	Sample size was too low
West Texas	8%	6%	0.4%	38%	27%	23%	Sample size was too low
All Responses				31%	36%	28%	17%

Region	In-Person Public Meeting Attendees	Online Survey Responses	Paper Survey Responses	Pay more than $100 for monthly internet	Have heard of ACP	Only use a mobile data plan for internet access at home	Only use a smartphone
Alamo	9%	16%	Sample size was too low	33%	44%	7%	7%
Capital	14%	11%	Sample size was too low	41%	42%	8%	4%
Central Texas	5%	9%	25%	48%	36%	12%	5%
Gulf Coast	5%	12%	Sample size was too low	43%	33%	12%	7%
High Plains	8%	9%	Sample size was too low	38%	18%	6%	6%
Metroplex	11%	13%	16%	38%	44%	9%	9%
Northwest	4%	5%	5%	43%	34%	12%	Sample size was too low
South Texas	9%	8%	Sample size was too low	36%	38%	7%	7%
Southeast Texas	10%	4%	Sample size was too low	58%	40%	18%	Sample size was too low
Upper East	9%	5%	Sample size was too low	60%	38%	23%	10%
Upper Rio Grande	8%	3%	51%	36%	48%	Sample size was too low	Sample size was too low
West Texas	8%	6%	0.4%	43%	39%	Sample size was too low	Sample size was too low
All Responses				41%	40%	10%	7%

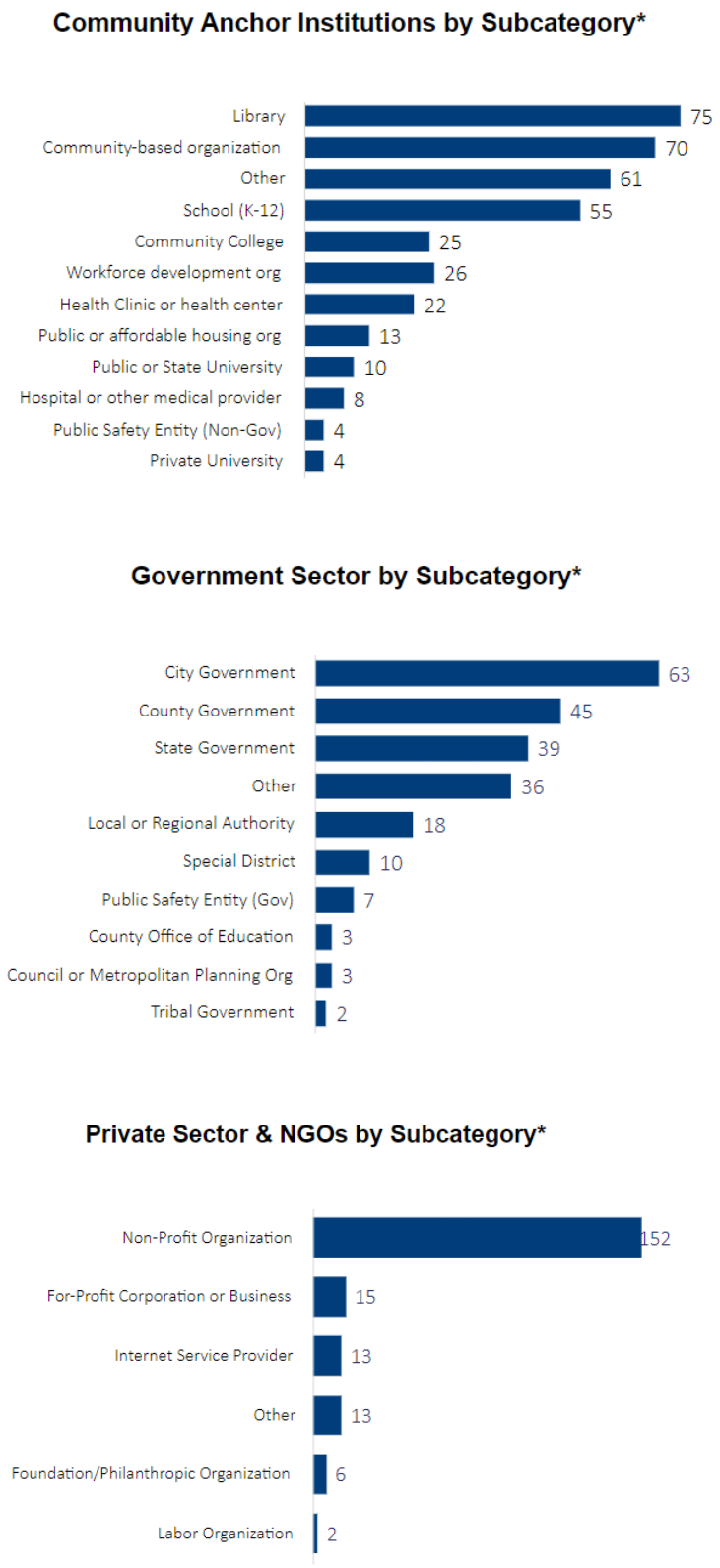
3.b Asset Inventory

3.b.i Description

The BDO launched a statewide promotion of the DRMTS to gather input from organizations about existing digital opportunity programs throughout Texas and develop a comprehensive understanding of how organizations are supporting broadband accessibility, affordability and adoption. The DRMTS identified current digital opportunity programs and services as well as resource gaps across the state. In total, the DRMTS received 368 valid responses from organizations based in 118 counties. This section provides an overview of those responses. For more information see *Appendix E: Detailed Asset Inventory.*

To read more about BDO public engagements and methodology, see *Chapter 4: Collaboration and Stakeholder Engagement.*

Figure 23: DRMTS Responses by Type of Organization

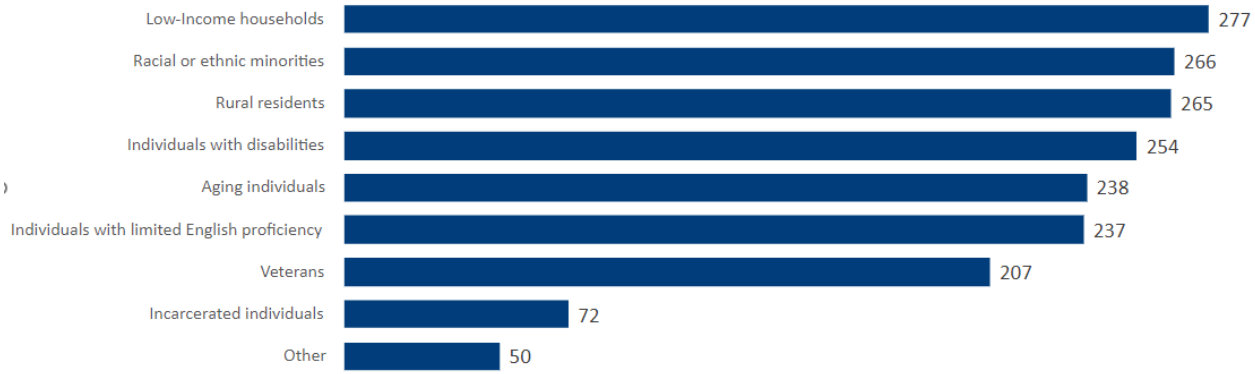


3.b.ii Covered Populations Served

All surveyed organizations serve at least one covered population. More than 230 respondents report that they serve six of the eight identified covered populations. For the purposes of this asset inventory, when a report is created on DRMTS respondents, the BDO considers the sample as serving all covered populations. Among respondents, low-income households are the most served covered population, with approximately four times the number of organizations offering services to this specific demographic than to incarcerated individuals.

The following chart shows a breakdown of the Covered Populations served by existing digital opportunity programs.

Figure 24: Covered Populations Served by Existing Digital Opportunity Programs



3.b.iii Existing Digital Opportunity Plans

The BDO gathered a list of digital opportunity plans from counties, municipalities, and other entities. Found in *Appendix A: Local Digital Opportunity Plan Tracker*, the list demonstrates that many government, CAIs and private entities are quite far along in thinking through the impact of digital opportunity in their communities and potential solutions to addressing broadband access, affordability and adoption. For example, Austin, Dallas and San Antonio have

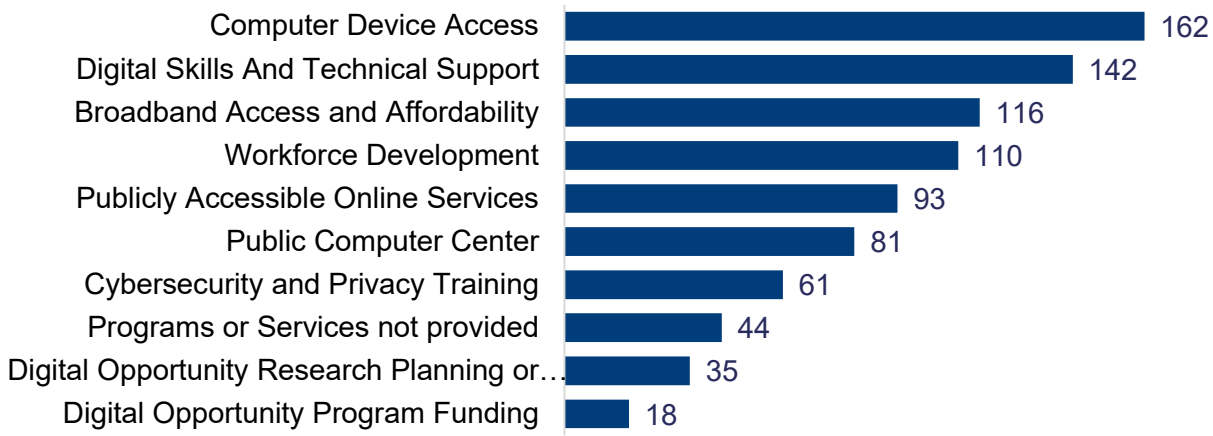
plans for digital inclusion. All three include inventories of existing efforts and plans for advancing digital inclusion in their cities.

While some localities have developed digital opportunity plans, more communities have plans for broadband infrastructure. The implementation strategies in *Chapter 5: Implementation* consider how to support and advance these existing plans, while providing capacity for organizations and localities that may not yet have plans in place.

3.b.iv Existing Digital Opportunity Programs

The organizations surveyed provide a broad array of digital opportunity programs, with most programs focused on device access, followed by digital literacy and technical support, broadband access and affordability.

Figure 25: DRMTS Responses by Program Offerings



More than 110 libraries, government organizations and nonprofits surveyed say they provide free wireless local area networks (WLAN) or Wi-Fi services for public use. Libraries comprise more than half of these organizations and offer connectivity onsite at their facilities and via mobile hotspots. This is essential for

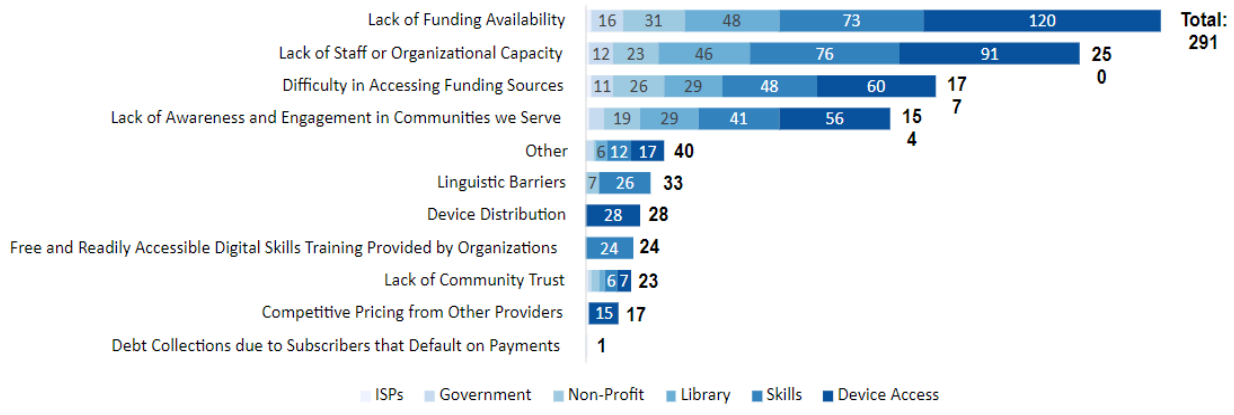
rural residents who lack access to available broadband infrastructure and rely on these organizations for connectivity.

A variety of organizations reported offering workforce development programs focused on digital skills training, career development and job placement programming. These include government and public agencies, such as the TWC, libraries, economic development associations, higher education institutions, school districts and CBOs. These entities provide important digital programs aimed at upskilling and breaking cycles of generational poverty.

A total of 162 organizations surveyed provide computer device access programs, and 142 offer digital skills and technical support programs. Organizations offering these programs reported the highest frequency of encountering barriers such as lack of funding availability, followed by lack of staff or organizational capacity, and cited these as major deterrents to continuing their digital opportunity programming in communities.

3.b.v Barriers Impacting Organizations Offering Digital Opportunity Programs

Figure 26: Barriers to Implementing Digital Opportunity Programs



> "We work with over 36 different language groups. We do have access to translation services but lack funding to translate the resources available into the various languages we serve."
>
> -Community Development Nonprofit in Potter County

Many organizations also expressed challenges implementing programs in areas lacking broadband availability, particularly in rural areas. Other cited barriers include lack of place-based digital navigation and technical support for accessing services, increased program costs with little to no associated increase in funding, and difficulty engaging participation in existing programs due to lack of trust, skepticism or general lack of awareness or interest.

Many of the organizations surveyed reported receiving some form of public or private funding for their programs, with more than 20 percent reporting difficulty accessing funding sources. Some of the factors cited include lack of eligibility for funding programs, high level of need relative to the amount of funding available and complexity of layering in multiple funding sources.

3.b.vi Broadband Adoption

Broadband adoption in Texas is a work in progress and requires a strong commitment from a variety of organizations to continue important broadband affordability, device access and skills training programs at a grassroots level, neighborhood by neighborhood. Access to affordable, reliable broadband is the first step to adoption. The plan is focused on adoption, while federal funding like BEAD is focused on building the infrastructure to

> "There is a lack of trust in internet service providers and pricing that makes some residents reluctant to adopt digital tools."
>
> –Housing Authority in Travis County

connect to the internet. Once Texans can access the internet, adoption means ensuring people have the skills to use the internet on secure personal devices. Organizations need access to funding programs that are simple to apply to and help build upon the existing and effective programs. Without these programs, especially in rural parts of the state, many Texans will remain unaware of the broadband options available to them and continue to be reluctant to adopt digital tools to fully participate in the digital economy.

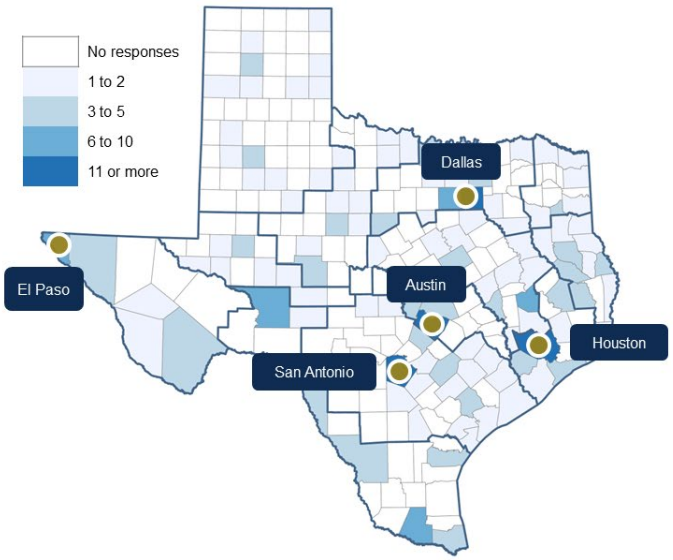
3.b.vii Broadband Affordability

Sixty libraries, nonprofits and government agencies and three ISPs surveyed reported they actively promote or provide enrollment assistance for the ACP, with government agencies and libraries or schools doing the largest share of promotion and enrollment. Libraries, CAIs and nonprofits reported that they conduct ACP awareness campaigns by incorporating this information into their existing programming (for example, during parent-teacher conferences).

3.b.viii Conclusion: Gap Analysis

Organizations in Texas grapple with a multitude of challenges in their efforts to address digital opportunity. The first significant challenge is an uneven distribution of digital opportunity assets in Texas, which is composed of both urban and remote rural regions. Most organizations surveyed in the DRMTS are concentrated primarily in urban population centers that are more favorable to their operations, creating a significant disparity in access to digital resources and services between urban and rural areas.

Figure 27: DRMTS Respondents by County



This concentration has left a noticeable gap in programming and the availability of services in the High Plains, Upper Rio Grande and South Texas regions of the state. Many counties in these areas, which often grapple with economic challenges and lower population density, are underserved in terms of digital inclusion initiatives. This regional imbalance highlights the need for a greater distribution of digital opportunity resources and services throughout the state.

The socioeconomic challenges prevalent in specific areas of Texas also pose significant hurdles for organizations that have limited capacity, staffing and funding. Many areas, particularly rural and economically disadvantaged communities, have higher needs for services and support. For example, the Upper Rio Grande and South Texas regions experience the highest rates of digital disparity, based on **Microsoft's Digital Equity Data Dashboard**, and limited organizational resources, according to the DRMTS. These regions have the highest proportions of low-income households, racial or ethnic minorities, and limited English proficiency households. The regions are among the most underserved by respondent organizations.

Tables 15-16: Demographics of the South Texas and Upper Rio Grande Regions[58]

Demographics	South Texas Region	Upper Rio Grande Region
Population[1]	**2.4 million**	**0.9 million**
Households[1]	**0.8 million**	**0.3 million**
Median household income[1]	**$45,000**	**$49,000**
Aging individuals[2]	**17%**	**17%**
Immigrants[2]	**20%**	**24%**
Incarcerated individuals[2]	**1%**	**0%**
Individuals with disabilities[2]	**13%**	**13%**
Individuals with limited English proficiency[2]	**15% (2nd highest)**	**22% (Highest)**
Low-income households[2]	**37% (Highest)**	**32% (2nd highest)**
Racial or ethnic minorities[2]	**87% (Among the highest)**	**87% (Among the highest)**
Rural residents[2]	**24%**	**10%**
Tribal communities[2]	**1%**	**2%**
Veterans[2]	**3%**	**6%**
Percentage of eligible households enrolled in ACP[3]	**73% (Highest)**	**54% (2nd highest)**

[1]Texas Broadband Plan 2022 [2]American Community Survey, US Census Bureau [3]USAC

According to Digital Opportunity Survey data, 36 percent of survey respondents in the Upper Rio Grande and South Texas pay more than $100 per month for their internet service. In a region where median household income is $50,000 per year, more than $100 per month for internet can be cost prohibitive, driving

[58] U.S. Department of Commerce. (n.d.). American Community survey five-year data (2017-2021). U.S. Census Bureau. https://www.census.gov/data/developers/data-sets/acs-5year.html

down broadband adoption rates. Due to these factors, these regions will require focus by the state and partner organizations such as CAIs, CBOs and nonprofits, to prioritize investments in broadband access, low-cost internet service and device options, as well as digital literacy programs.

One notable organization that is investing in broadband and digital opportunity expansion in South Texas is **Methodist Healthcare Ministries of South Texas, Inc.** (MHM). As essential services move increasingly online – including healthcare, education and workforce development – MHM released a Request for Proposals (RFP) to advance digital equity in the region. The goal for proposals is to increase the capacity of CBOs and CAIs in South Texas to provide critical digital resources, services and support through device access, digital skills and public benefit adoption including deploying digital connectors in the region. As a result, MHM hopes to achieve its goal of increasing broadband adoption for residents and families living in South Texas.

In San Antonio, located in the Alamo Region, organizations collaborate to drive digital opportunity. Within the city, one in six households lack access to a computer and one in four lack access to the internet.[59] Goodwill San Antonio partners with the San Antonio Housing Authority to increase access to technology and empower community members. Goodwill's Technology Access Program provides devices to low-income families and individuals with disabilities. As a Microsoft registered refurbisher, Goodwill San Antonio takes donations of computers and electronic devices and safely and responsibly refurbishes equipment for reuse in the community. In 2020, Goodwill partnered with the San Antonio Chamber of Commerce and garnered 1,900 donations.

Another broad challenge that organizations face relates to enrollment and participation in benefits programs like the ACP. According to surveyed organizations, the Texas residents they serve have low trust in programs offered by ISPs, organizations and the government. The perceived complexity and bureaucracy of programs, past negative experiences, changes in eligibility

[59] Census American Community Survey (ACS), 2021.

criteria and trust issues with program providers have fostered hesitancy among residents. Similarly, while certain residents may be eligible for coverage, they face a range of enrollment barriers including fear, confusion about eligibility rules and language and literacy challenges. According to USAC data on ACP enrollment and the Benton Institute Affordable Connectivity Program enrollment tool for household eligibility, 38 percent of eligible households in Texas are enrolled in ACP. Digital Opportunity Survey data showed that 40 percent are aware of ACP, and individuals with limited English proficiency and low-income households most frequently responded that they are not enrolled in ACP or discounted internet services because they do not know how to apply.

To mitigate participation challenges in benefits programs like ACP or discounted internet services, organizations will need to undertake several key strategies. Advocating for more user-friendly application procedures, in-person enrollment support and language accessibility, especially in culturally diverse areas like the South Texas and Upper Rio Grande regions, can further enhance program accessibility. Moreover, addressing privacy and security concerns by explaining data protection measures, forming partnerships with community organizations and offering continued support will be crucial in increasing enrollment and sustaining participation. Additional measures to ensure that those in need can confidently access the benefits they require include public awareness campaigns and coaching residents on how to adopt digital tools.

Chapter 5: Implementation explores how to address these gaps.

4. Collaboration and Stakeholder Engagement

4.a Strategy for Collaboration and Stakeholder Engagement

Collaboration and stakeholder engagement are uniquely challenging in Texas, the second-largest U.S. state by area and population. At 30 million people, Texas continues to grow rapidly, with several of the nation's fastest-growing counties. Texas is also increasingly diverse. Individuals belonging to covered populations live across the state's 254 counties, in some of the country's largest cities, and in vast rural and remote areas that may be composed of deserts, prairies, swamps or woodlands. The BDO is leading a strategy for collaboration and stakeholder engagement that confronts these challenges and capitalizes on one of the state's premier assets: its diversity.

Through the engagement strategy described in this chapter, thousands of Texans, including individuals from all covered populations and the diverse organizations that serve them, have shared their experiences and informed this plan.

Table 17: Summary of Public Engagement Impact

Digital Opportunity Survey responses received	13,296 total responses 11,385 valid responses 9,440 valid online responses 1,945 valid paper responses
Organizations represented in Digital Resources Mapping Tool Survey	368 valid responses
Members of Statewide Working Group, Task Forces, Regional Working Groups	555
Participants in Regional Public Meetings	1,274

The BDO designed the process to build upon, coordinate and accelerate longstanding and emerging digital opportunity work serving covered populations across Texas. The engagement model recognizes and benefits from the perspective and expertise of digital opportunity practitioners from across sectors – including various agencies, organizations and individuals.

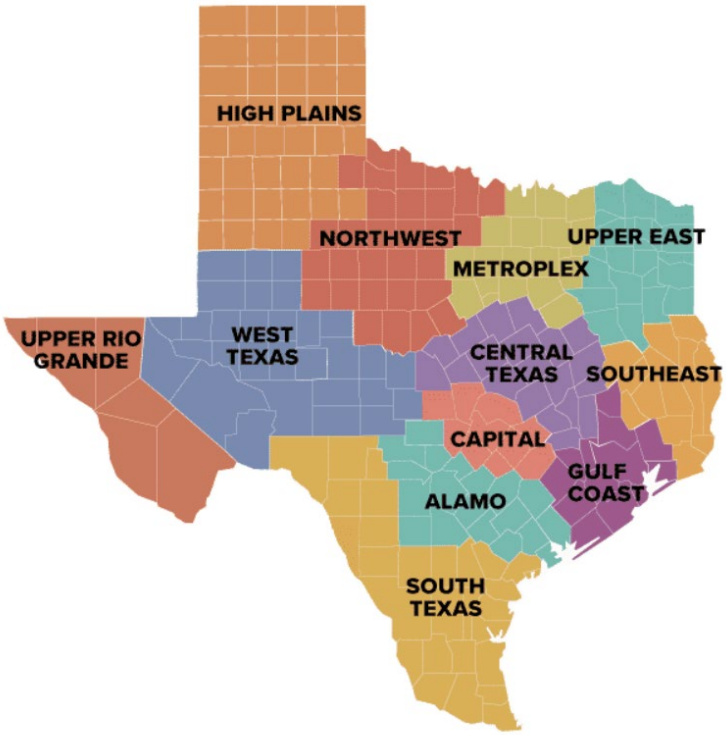
One example of the interagency coordination central to the engagement model is the participation of the regional COGs in the digital opportunity planning process. COGs are political subdivisions of the state that coordinate programs and services to address unique needs within regions. COG representatives from each of the 12 economic regions of Texas actively participated in the planning process, including serving on the SWG and priority area task forces, chairing Regional Working Groups (RWGs), and hosting public meetings in their regions.

CAIs, government and public organizations and private sector and non-governmental organizations alike advance digital opportunity throughout Texas by providing access to free or low-cost connectivity or devices, assistance with affordability programs, and/or digital skills training resources. As shown in the Asset Inventory, umbrella organizations, networks and associations such as the Texas Digital Equity Network, TSLAC, the Texas Association of Community Colleges (TACC), United Ways of Texas, multiple community-based

organizations, faith-based groups and many others serve to coordinate this work across the state. These organizations, and the individuals and programs they represent, make up the state's robust digital opportunity ecosystem. Through the stakeholder engagement model, the BDO sought guidance and insights from this network of subject matter experts, while noting that the BDO itself is part of this digital opportunity ecosystem. The BDO's BOOT program has begun to address the broadband availability side of digital opportunity. Initiatives under the BEAD program will continue to address the infrastructure issues behind the digital divide.

While these statewide agencies and regional and local organizations play a key role in the Texas digital opportunity ecosystem, the state's unique size, diversity and geography call for a regional approach to any digital opportunity work. The engagement model adopted the Comptroller's 12 Economic Regions as a geographic framework for organizing this work regionally. As described below, the RWGs and public meetings helped to identify the unique assets and barriers in each region, as well as the local practitioners and community members who best understand the lived experience of regional residents.

Figure 28: Economic Regions of the State of Texas



A Note on Engaging Covered Populations:

The engagement model was designed for maximum participation with individuals from covered populations and the organizations that serve or represent them.

The BDO ensured participation from organizations and individuals representing covered populations in each set of working groups and task forces. In the RWGs, the BDO worked with regional co-chairs to ensure engagement from organizations serving covered populations, including food banks, libraries, senior centers, school districts, public housing authorities, civil rights organizations and other entities. The BDO created outreach and educational materials in multiple languages to enable working group and task force representatives to promote community participation in the planning process.

These additional outreach efforts ensured covered populations were aware of and participated in stakeholder engagement activities:

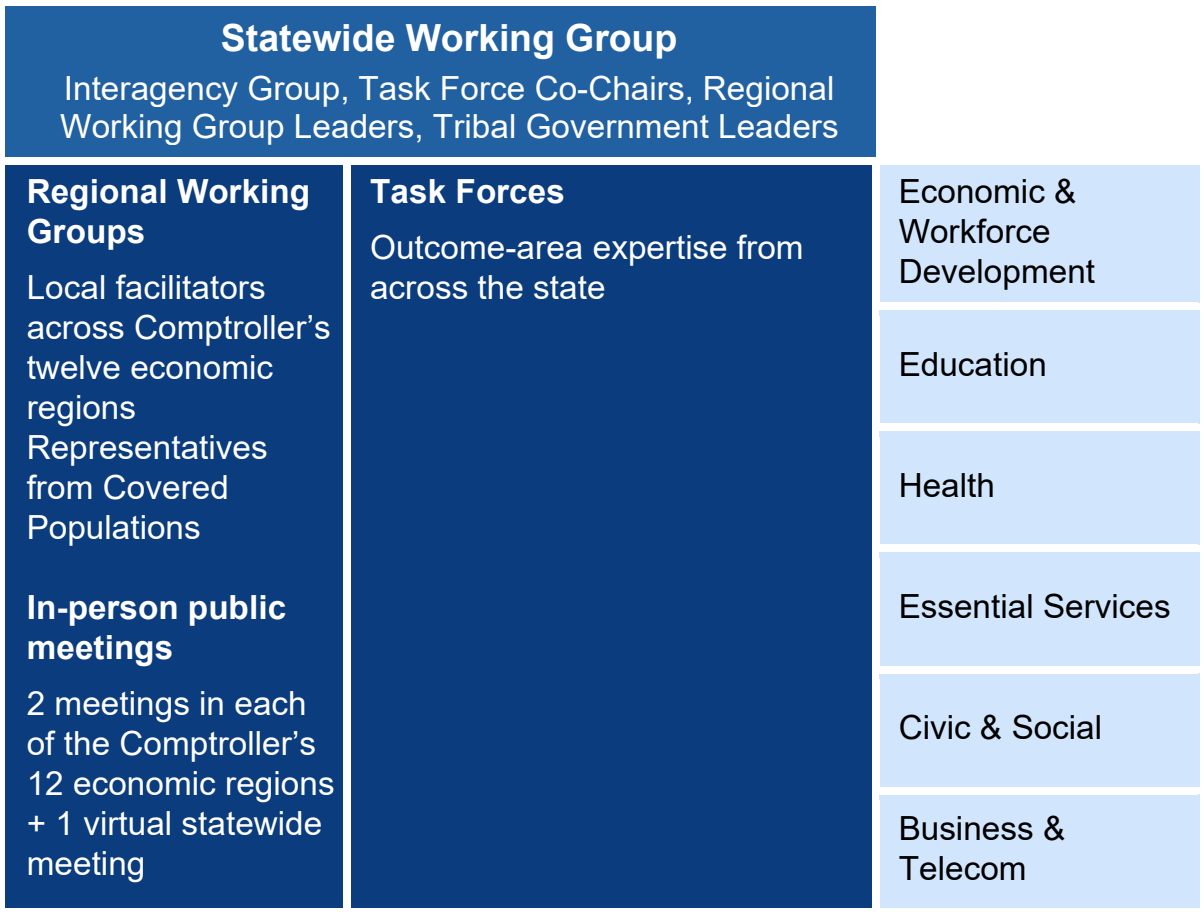
- Public meetings hosted in spaces accessible to covered populations, including American Legion, public library, senior center, local school, community center and in rural area facilities.
- American Sign Language and Spanish-language interpreters available for in-person public meetings by request.
- Direct engagement with COGs, many of which operate Area agencies on aging, Area Disability Resource Centers, 211 Information and Referral Centers.
- Partnership with Texas A&M AgriLife Extension Service, for outreach via County Agricultural Agents based in 250/254 Texas counties.
- Presentations at stakeholder coalition meetings, including 10-County Central Texas Broadband meeting, Borderplex Connect board meeting, Texas Digital Equity Network meeting and the Texas Library Association Annual Conference.
- Direct emails and phone calls to local organizations serving covered populations about the Digital Opportunity Survey, DRMTS and public meetings.
- Regional Working Group members distributing online survey links and paper surveys at local workforce offices, food banks, community events, libraries and schools.
- Regional and statewide press releases and media efforts in local papers and news stations to promote public meetings and surveys.
- English and Spanish outreach toolkits for community-based organizations and other entities serving covered populations to share the Digital Opportunity Survey and public meeting opportunities.

- BDO outreach webpage with contact form enabling direct interaction with Texans interested in participating in the planning process.
- Outreach materials and engagement strategies provided to state agencies serving covered populations, including Texas Health and Human Services, Texas Department of Housing and Community Affairs, TEA, Texas Higher Education Coordinating Board, TSLAC, Texas Veterans Commission and TWC.

The BDO also met individually with an array of organizations and individuals to learn more about the covered populations they serve, digital opportunity barriers they face, and possible strategies for increased access. A full list of organizations and stakeholders is included in *Appendix D: Stakeholder Engagements and Participants*.

4.b Engagement Methodology

Figure 29: Overview of Public Engagement Supporting the Texas Digital Opportunity Plan



Surveys	
Public Survey	Open to all Texas residents and designed to identify household-level experience and barriers to broadband.
Digital Resources Mapping Tool	Collected data from organizations providing programs, services, and tools that enable access to the internet, devices, and digital skills training.

The BDO established a public engagement model to develop the plan that represents all regions and covered populations from across the state. The model enabled extensive public input through online and paper surveys and regional meetings with communities in all 12 regions of the state, and by engaging state agencies, nonprofit entities and industry leaders in meetings of the SWG and priority area task forces.

The state convened several groups to gather information for the plan from April 2023 to August 2023. The public engagement model facilitated the flow of communication, coordination and collaboration between the BDO and its advisory bodies, including the SWG, six priority area task forces and 12 RWGs, representative of covered populations and local and regional stakeholders. This model is responsive to NTIA requirements for a unified vision, including an assessment of how the programs may affect or be affected by other state and local plans and goals across Texas.

4.b.i Statewide Working Group

The SWG was formed to advise the BDO, task forces and RWGs on the digital opportunity planning and public engagement process. The SWG also assisted with gathering data for the Digital Opportunity Plan and promoting the Digital Opportunity Survey and DRMTS. SWG members include representatives from state agencies, task force chairs, RWG leaders and tribal government officials. BDO also sought participation from entities representing and/or serving all covered populations.

Agencies and Organizations Represented on the Statewide Working Group:

- AARP Texas
- Connect Humanity
- Disability Rights Texas
- Guadalupe Valley Electric Cooperative
- Kickapoo Traditional Tribe of Texas
- Operation Connectivity Lead
- Texas 2036
- Texas Association of Business

- Texas Association of Goodwills
- Texas Association of Regional Councils
- Texas Black Caucus Foundation
- Texas Department of Agriculture
- Texas Department of Emergency Management
- Texas Department of Housing and Community Affairs
- Texas Department of Information Resources
- Texas Department of Transportation
- TEA
- HHSC
- Texas Municipal League
- Texas Office of the Governor
- Texas Rural Funders
- TSLAC
- Texas Veterans Commission
- TWC

For the full list of SWG members, go to *Appendix D: Stakeholder Engagements and Participants*.

4.b.ii Outcome Area Task Forces

Task forces convened subject matter experts in the state's key priority areas to identify and address barriers to broadband access, affordability and adoption. They provided recommendations on best practices and strategies that would advance digital opportunity within the framework of each priority area. Each task force consisted of about two dozen total members representing groups and subject matter experts in the given outcome area, as well as organizations serving covered populations.

4.b.ii.1 Business and Telecommunications Task Force

The Business and Telecommunications Task Force examines the best way for Texas to implement the Digital Opportunity Plan. Its members addressed all issues of concern to the telecommunications industry, with a focus on running digital opportunity programs in a manner that achieves high industry participation and enables a rich variety of proposed projects.

Agencies and Organizations Represented on the Business and Telecommunications Task Force:

- AMA Communications
- AMA TechTel
- AT&T
- AW Broadband
- Bluebonnet Fiber
- Cobb Fendley
- Comcast
- Congruex
- Crown Castle
- Electronic Corporate Pages, Inc. (Western Broadband)
- Fiberlight
- Graybar
- HC Wireless, LLC
- Highline
- Internet2 Technology Evaluation Center at Texas A&M
- The Lower Colorado River Authority
- Lit Communities
- Mears Broadband
- MSEC Communications, LLC
- Net Ops Communications, LLC
- Nexstream
- Nextlink Internet
- Rock Solid Internet a Vtx1 Company
- Signalnet Broadband, Inc.
- Space Exploration Technologies
- TekWav
- Texas Area Telecom
- Texas Association of Manufacturers
- Texas Cable Association
- Texas Department of Transportation
- Texas Electric Cooperatives
- Texas Statewide Telephone Cooperative, Inc.
- Texas Telephone Association
- TWC
- Victoria Electric Cooperative/Infinium
- Wireless Internet Service Providers Association (WISPA) – Texas

4.b.ii.2 Civic and Social Task Force

The Civic and Social Task Force represents the concerns and interests of local governments and community-based nonprofits.

Agencies and Organizations Represented on the Civic and Social Task Force:

- Abilene Library Consortium
- Community Tech Network
- Dallas Innovation Alliance
- Disability Rights Texas
- Harris County Public Library
- OneStar Foundation
- Senior Access (Capital Region)
- Texas AARP
- Texas Association of Counties
- Texas Association of Regional Councils
- Texas Demographic Center
- Texas Department of Information Resources
- Texas Library Association
- Texas Municipal League
- Texas Network of Youth Services
- Texas Rural Funders
- TSLAC
- TLL Temple
- United Way Denton Count

4.b.ii.3 Economic and Workforce Development Task Force

The Economic and Workforce Development Task Force considers 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.

Agencies and Organizations Represented on the Economic and Workforce Development Task Force:

- Austin Urban Technology Movement (AUTMHQ)
- Communications Workers of America
- Federal Reserve Bank of Dallas
- Texas Association of Goodwills
- Greater Houston Partnership
- South Dallas Employment Project
- TechNet
- Technology and Policy Information Institute
- Texas A&M AgriLife Extension Service

- Texas Farm Bureau
- Texas Midwest Community Network
- TWC
- The High Ground of Texas
- University of Texas – Rio Grande Valley

4.b.ii.4 Education Task Force

The Education Task Force ensures that digital opportunity programs address the unique needs of educators, students and school communities.

Agencies and Organizations Represented on the Education Task Force:

- Changing Expectations
- Dallas Foundation
- Distance Education Professional Development Center at Texas A&M
- Operation Connectivity
- Paul Quinn College
- Education Service Center (ESC) Region 1
- Texas Association of Community Colleges
- Texas Association of Community Schools
- Texas Association of School Administrators
- TEA
- Texas Higher Education Coordinating Board
- Texas Public Charter Schools Association
- Texas School Alliance
- Texas State Technical College
- Tyler Independent School District
- Windham School District

4.b.ii.5 Essential Services Task Force

The Essential Services Task Force represents the digital opportunity perspectives of public safety and poverty relief organizations, including state and municipal agencies, nonprofit organizations and emergency management entities.

Agencies and Organizations Represented on the Essential Services Task Force:

- Combined Arms
- Commission on State Emergency Communications
- Feeding Texas
- Texans Veterans Commission
- Texas Achieving a Better Life Experience (ABLE)
- Texas Department of Criminal Justice
- Texas Division of Emergency Management
- Texas Department of Housing and Community Affairs
- Texas Technology Access Program at the University of Texas
- United Ways of Texas

4.b.ii.6 Health Task Force

The Health Task Force discusses digital opportunity as a social determinant of health. This includes a particular emphasis on enabling access to telehealth, which many argue promises to improve health outcomes by increasing the competitiveness, productivity and accessibility of health care, as well as serving as critical component of the state's pandemic resilience.

Agencies and Organizations Represented on the Health Task Force:

- Meadows Mental Health Policy Institute
- National Alliance on Mental Illness Texas
- Texas A&M College of Medicine
- Texas Academy of Family Physicians
- Texas Association of Community Health Centers
- Texas Department of State Health Services
- Texas e-Health Alliance (TeHA)
- HHSC
- Texas Organization of Rural and Community Hospitals
- Texas Rural Health Association
- Texas Veterans Commission
- The University of Texas Medical Branch

For the full list of task force participants, go to *Appendix D: Stakeholder Engagements and Participants.*

4.b.iii Regional Working Groups

RWGs function as “boots on the ground” to coordinate events, meetings, listening sessions and roundtables with local communities across Texas’ 12 economic regions, in coordination with the BDO. RWG chairs and co-chairs include representatives from regional COGs, trusted community leaders deeply familiar with the unique conditions in their local area.

Members: Each RWG group consists of roughly 20 representatives from local organizations, whose mix varied according to local priorities, including:

- Aging and disability resource centers
- Area agencies on aging
- Chambers of commerce
- Community-based organizations
- Community and technical colleges
- County judges
- Digital opportunity practitioners
- Faith-based organizations
- Mayors and city council members
- Local government broadband office staff
- Local hospital, clinic or health care providers and staff
- Local library directors
- Local public safety officials
- Minority-serving community organizations
- Regional broadband coalitions
- Regional COGs
- Regional digital opportunity groups
- School district superintendents and school board members
- Texas A&M AgriLife Extension Agent
- Tribal governments

For the full list of RWG participants, go to *Appendix D: Stakeholder Engagements and Participants.*

4.b.iv Tribal Engagements

There are three federally recognized tribes in the state of Texas: the Alabama Coushatta Tribe of Texas, the Kickapoo Tribe of Texas and the Ysleta del Sur Pueblo. In addition to inviting tribal leaders to participate in the stakeholder engagement groups and events, the BDO requested consultation meetings with each of the three tribes to better understand the unique barriers faced by each tribe, their current states of digital opportunity and if/how the state can work collaboratively to advance the digital opportunity goals of each tribe. The BDO was invited to conduct tribal consultations with leaders from the Alabama Coushatta Tribe of Texas and the Kickapoo Tribe of Texas.

For a full list of Stakeholder meeting dates, go to *Appendix D: Stakeholder Engagements and Participants.*

4.b.v In-Person and Virtual Public Meetings

In 2022, shortly after launching the Broadband Development Office, Comptroller Glenn Hegar led a 12-city listening tour, visiting each of the 12 regions and informing the development of the Broadband Plan.

The BDO worked with RWGs to identify two locations in each of the Comptroller's 12 economic regions to ensure widespread public participation. When selecting locations for 2023 engagements, the BDO ensured visits to new locations.

The RWGs, in conjunction with their COGs, promoted the public meetings in their regions. The BDO sent out communications via its mailing and stakeholder lists and engaged in additional outreach with key institutions within each region.

The result was public meetings in 24 cities and two virtual meetings across the 12 economic regions of Texas over seven weeks, from July 2023 to August 2023. During these meetings, the BDO heard from Texans about their

broadband access, affordability and adoption challenges and needs. Participants provided critical insights into regional barriers and priorities and important input toward the development of this plan. BDO held one statewide, virtual public meeting for those who were unable to attend in person, and an additional virtual meeting for residents of the Metroplex Region.

A total of 1,274 participants engaged in the public meetings, representing 127 counties across Texas.

The BDO planned a virtual Spanish language public meeting. However, just one participant registered for the meeting. In order to better engage Spanish speakers, the BDO is working with the TWC. That work is detailed in *4.3 Looking Ahead.*

For a full list of public meeting dates and locations, go to *Appendix D: Stakeholder Engagements and Participants.*

4.c Looking Ahead

The engagement model for the plan ensured widespread participation from stakeholders and communities across Texas, including all covered populations, to ensure an inclusive planning process. The BDO intends to continue engagement with these stakeholders and all covered populations as the plan moves from planning to implementation, through funding; collaboration; opportunities to shape programming and regular engagements to provide updates on the plan; new measurement data; and requests for feedback. *Chapter 5: Implementation* details this ongoing engagement and collaboration.

Additionally, the BDO is working with state partners like the TWC and Texas A&M University (TAMU) to expand outreach efforts and engage more communities in the planning process, including documenting the experiences of harder to reach communities.

TWC is currently conducting focus groups with job seekers, employers and individuals from covered populations to ensure substantial qualitative input on digital opportunity barriers and opportunities from across the state. Their efforts include focus groups for predominantly Spanish speakers. TAMU is currently conducting focus groups and one-on-one interviews in counties with low response rates to the Digital Opportunity Survey and DRMTS, and a proportionally high number of unserved locations. TWC and TAMU are conducting research as part of this planning process that will help identify partnerships for further exploration and key actions BDO could take in the implementation phase. TWC is conducting qualitative and landscape research to produce a Broadband Labor Market Assessment and Report that will ready the state for broadband and digital opportunity investments. TAMU is conducting local needs assessments on broadband assets and research. It will identify opportunities to incorporate broadband into the Texas A&M AgriLife Extension Service annual local needs assessment for rural communities and identify any TAMU programs and assets that may be relevant to broadband. This includes workforce training programs, digital literacy programs, online learning, network infrastructure and anything that is helping the communities they serve get online. The BDO is also considering coordination with TSLAC, Texas Department of Housing and Community Affairs and other agencies or organizations to more rapidly advance digital opportunity.

4.c.i Public Comment Process

To ensure widespread participation in the public comment period, the BDO will engage with the SWG, RWG and task forces to encourage participation and the promotion of the opportunity for public comment via their networks. In addition, BDO will share the opportunity for public comment with its email distribution list, including those that participated in the various public meetings and shared their contact information. BDO will reach out to the state's three federally recognized tribes with the opportunity to review the draft plan and provide comments.

In addition to the activities with TWC to ensure further representation of the experiences of individuals from covered populations in the plan, BDO is partnering with TWC to drive participation in the public comment period. TWC will leverage its statewide networks of job seekers, employers, employment offices and others to ensure widespread awareness of and participation in public comment, especially among individuals from covered populations and the organizations that serve them, including Spanish language outreach.

As BDO transitions from planning to implementation, it will rely on interagency and interorganizational relationships established during this planning process and encourage new relationships to engage even more Texans and covered populations in addressing digital opportunity for all Texas residents.

Image credit: Chris Montgomery via Unsplash

5. Implementation

5.a Introduction

This chapter identifies the strategies and activities that the BDO will implement alongside stakeholders and partner agencies to achieve its overarching goals and measurable objectives. While the goals and measurable objectives encapsulate where the state wants to be, the strategies and activities describe what the BDO will do to get there. The strategies are broad approaches to achieving measurable objectives. They do not correspond to measurable objectives in a 1:1 manner but cut across multiple objectives, as this work is inherently interconnected. Because covered populations and regions face unique barriers, the strategies are intentionally broad, with implementation directions targeting the specific needs of covered populations and regions.

While the DRMTS gathered data on robust existing efforts to support digital opportunity for all covered populations in the state, the BDO found gaps in implementing programs in areas impacted by a lack of broadband availability, low place-based digital and technical support for accessing services, limited funding and challenges getting communities to engage in existing programs. In addition, most organizations are based in urban areas. Non-urban parts of the state need additional resources to serve their populations. Strategies one to three aim to address these gaps.

The implementation strategies are designed to work alongside, advance and in some cases, deploy sequentially with existing statewide and local efforts and federal funding for broadband infrastructure, like BEAD. The needs assessment and asset inventory reveal that once reliable broadband service is available in all communities, Texans will need programs that drive down subscription costs to end users, as well as digital literacy training to enable full and safe use of broadband-enabled technologies. Thus, the BDO developed these strategies to advance adoption of the internet once it becomes available through BEAD and other sources of funding.

Including data collection and measurement as part of the implementation for each strategy enables the BDO to measure progress toward KPIs, in addition to the ongoing measurements presented in *Strategy 4: Maintain a Living Digital Opportunity Plan.*

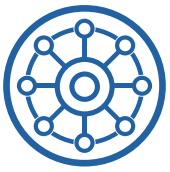
5.b Summary of Strategies

The BDO will advance the following four primary strategies to address these and other barriers identified in this plan and to realize its vision:

Strategy 1: Partner With and Fund Statewide Organizations. The BDO will work with a range of state agencies and other statewide partners already actively involved in advancing digital opportunity across the state, ensuring that work is supportive of realizing the goals of this plan. The BDO will partner and collaboratively plan with agencies such as the TWC and TSLAC, with the goal of enhancing and expanding those agencies' programs through funding available from the state's forthcoming Capacity Grant.

Strategy 2: Fund Local Partners. Broadband adoption, digital literacy, device access and many other aspects of digital opportunity require locally based, culturally appropriate efforts. Leadership should come from the same communities that these efforts aim to serve; trust, safety and confidence are essential components of digital opportunity. The BDO will allocate a portion of its Capacity Grant to create a digital opportunity grant program, comparable to the BOOT program for broadband infrastructure, to fund local initiatives addressing the gaps in digital opportunity for covered populations and underserved regions.

Strategy 3: **Promote Internet Adoption.** The BDO recognizes that building the physical infrastructure to connect unserved and underserved Texans to broadband is only one component of expanding broadband adoption. Therefore, the BDO will support activities to encourage and support Texans to sign up for and use broadband service as it is made available across the state – benefiting Texans, multiple statewide priorities and the telecom industry through an expanded customer base.



Strategy 4: Maintain a Living Digital Opportunity Plan. The BDO envisions this plan as a living document, to be updated through continued research. The BDO has gathered extensive baseline data, established relationships with stakeholders and residents and gained a firm understanding of the current needs and barriers of Texans statewide – regionally and among covered populations. The BDO aims to build upon this foundation and make this plan a sustainable resource to promote digital opportunity statewide by measuring progress while continuing to collect critical data to enable the state and its local partners to advance and iterate impactful programs.

Table 18: Summary of Implementation Strategies

Strategy	Activities
Strategy 1: Partner with and fund statewide organizations	1.1: Allocate a portion of the state's capacity grant program to expand existing state programs as detailed in this chapter. 1.2: Provide funding to partners to implement recommended or planned digital opportunity programs. 1.3: Provide funding to partners to develop programs or activities.
Strategy 2: Fund local partners	2.1: Stand up a state-led local digital opportunity fund to directly fund organizations offering digital opportunity resources to covered populations and geographies with the highest needs. 2.2: Expand the state-led local digital opportunity fund criteria to build capacity and staffing of organizations offering services to geographies and covered populations after funding those with the highest needs. 2.3: Consider distributing funding to local organizations and governmental entities that can administer digital opportunity funds.
Strategy 3: Promote internet adoption	3.1: Continue programs utilizing BEAD, BOOT, and other infrastructure funding. 3.2: Develop partnerships to promote internet enrollment. 3.3: Establish a grant readiness training program. 3.4: Develop state-granted programs to promote internet enrollment.
Strategy 4: Maintain a living digital opportunity plan	4.1: Conduct ongoing engagement and collaboration with stakeholders. 4.2 Maintain a statewide asset inventory; conduct ongoing data measurement with grantees and additional research to improve upon baseline data. 4.3: Evaluate progress against KPIs; adjust approach as needed. 4.4: Conduct public and organizational surveys to measure progress. 4.4: Conduct public and organizational surveys to measure progress.

5.c Strategy Details and Timeline

5.c.i Strategy 1: Partner With and Fund Statewide Organizations

Many statewide organizations and state agencies are doing work to advance digital opportunity across the state – in some cases with many years' experience. The BDO plans to partner with these agencies, including the TWC and TSLAC, to achieve the goals of this plan efficiently and effectively.

The list of state agencies and organizations provided here is not comprehensive. The BDO is open to exploring partnerships that advance universal broadband adoption and access to digital skills training.

Examples of statewide agency and organization partnerships could include, but are not limited to:

- Partnering with TSLAC to implement and fund the recommendations outlined in the *Texas Public Libraries: Serving Communities to Enhance Digital Literacy Report*.[60] These recommendations include the following (reprinted verbatim):
    - Initiate new state grant programs to support digital literacy that could focus on one or more of the following areas: sharing best practices; adding capacity for assistance; a facilitated peer-to-peer program between small and large libraries; assistance for small libraries; effective communication between branch managers via networking and professional development; and encouraging innovation through piloting new approaches and sustaining effective programming.
    - Increase outreach and awareness of existing tools and curriculums for teaching digital literacy, such as promoting the TSLAC Digital Literacy Toolkit, evaluating pre-existing digital

[60] Texas State Library and Archives Commission. (2023, March). Texas Public Libraries: Serving Communities to Enhance Digital Literacy.

literacy curriculums and promoting best practices from Texas libraries.

  - Develop new programming or expand activities that focus on older adults and seniors.
  - Identify, procure or develop advanced digital literacy training modules.

- Partnering with the TWC to support a continuum of digital literacy skills, beyond basic skills, especially those required for work by increasing the percentage of Texas workers who have the level of skills training jobs require. The TWC is conducting secondary and qualitative research with individuals belonging to covered populations and/or industry subject matter experts to support findings and collectively help inform a plan for expanding the availability of reliable and affordable broadband, device access, digital skills training and cybersecurity awareness to promote digital opportunity for Texans. The BDO envisions continuing the existing partnership with the TWC to implement the recommendations in its report, which may include additional support for local workforce agencies, labor organizations, CBOs and institutions of higher learning.
- Partnering with TAMU to support outcomes for rural residents. As part of the digital opportunity planning process, the BDO partnered with TAMU to:
  - Identify any TAMU programs and assets relevant to digital opportunity such as workforce training programs, digital literacy programs, online learning, network infrastructure or internet adoption programs;
  - Propose ideas for how BDO and its grantees or program participants may leverage those assets;

- Identify and share data and studies on rural life and impact of broadband on rural health, education, economy and other important community outcomes;
- Conduct studies on rural capital projects and investments; and
- Set baselines for rural indicators and track how deployment and digital opportunity programs may impact outcome areas. The BDO envisions continuing this partnership with TAMU to implement the recommendations in their research that advance digital opportunity outcomes for rural residents.

- Other state agency partnerships could include those that continue, expand and improve upon existing programs supporting digital opportunity. The BDO will evaluate potential partnerships when funds become available and may not necessarily include funding for the programs provided in this section; examples of such partnerships include:
  - The University of Texas Technology Access Program (TTAP), which increases digital access for people with disabilities and those who are aging with Assistive Technology (AT) tools and services.[61]
  - The Texas Department of Criminal Justice Inmate Tablet Program, through which the department delivers information and services to incarcerated populations.[62]
  - TAMU's Digital Access and Resilience in Texas (DART) curriculum, which integrates beginning English language learning with digital literacy skills.

[61] Texas Center for Disability Studies. (n.d.). Texas Technology Access Program. https://ttap.disabilitystudies.utexas.edu/

[62] Texas Department of Criminal Justice. (n.d.). Tablet Program Tablet Program Coming Soon to the Inmate Population Coming Soon to the Inmate Population. Inmate Tablet Program. https://www.tdcj.texas.gov/news/tablet_program.html

Measurable Objectives Addressed: All

KPIs: 1.1, 2.1, 2.2, 3.1, 3.2, 3.3, 4.1 and 5.1

Covered Populations Served: All

State Outcome Areas Addressed: All

Stakeholders: State Agencies, CAIs, CBOs

Timeline: Start Date: September 2024 **End Date:** December 2029

Major Implementation Milestones:

- Establish partnerships with statewide organizations.
- Allocate a portion of the state's capacity grant programs to expand existing programs.
- Data collection on program impact.
- Allocate a portion of the state's capacity grant programs to implement recommended or planned digital opportunity programs.
- Data collection on program impact and continued needs.
- If funds remain, consider providing funding to partners to develop programs or activities.

5.c.ii Strategy 2: Fund Local Partners

Broadband adoption, digital literacy, device access and many other aspects of digital opportunity require locally based, culturally appropriate efforts. Leadership should come from the same communities that these efforts aim to serve; trust, safety, and confidence are essential components of digital opportunity. The BDO will create a digital opportunity grant program, similar to the BOOT program for broadband infrastructure, to fund local initiatives addressing the gaps in digital opportunity for covered populations and regions.

Addressing the gaps identified in *Chapter 3* requires specific focus by the state and partner organizations such as CAIs, CBOs and nonprofits. The success of

grantmaking programs like that of the Methodist Healthcare Ministries discussed in *Chapter 3* illustrates how locally targeted funding can address gaps in digital opportunity.

According to the results of the DRMTS, funding is the primary barrier impacting organizations offering digital opportunity programming and resources. The second barrier is also related to funding: a lack of staff or organizational capacity. For further detail see *Chapter 3, Figure 26: Barriers to Implementing Digital Opportunity Programs*. In creating a fund for local digital opportunity, the BDO aims to reduce the barriers for organizations offering digital opportunity programs and to support the implementation of existing municipal, regional and/or tribal digital opportunity plans.

This fund will also address significant disparities among all covered populations. The grant program may place higher priority on applications that address these disparities:

- Access to devices other than smartphones tied to digital literacy training for unhoused individuals, low-income households and individuals with limited English proficiency.
- Support for individuals with limited English proficiency in digital literacy training and cybersecurity.
- Support for immigrants in awareness of and applying for discounted internet programs.

The BDO has yet to determine final granting criteria, but may consider the following when establishing a fund for local digital opportunity:

- Does the proposal address a discrete regional need or need of covered or underserved populations?
- Does the proposal provide in-person support in addition to online resources?

- Does the proposal address multiple Texas goals, like providing technical support and cybersecurity tools with discounted devices? Or does an organization offer access to a digital navigator when distributing devices and affordable internet?
- Does the proposal consider building capacity and training for smaller or newer organizations?
- Does the proposal support the implementation of an existing local or regional digital opportunity plan?
- Does the proposal advance research into solutions to the digital divide that could improve policy or investment impact?
- Does the proposal include opportunities to engage or partner with workforce agencies, labor organizations, CBOs and institutions of higher learning?

As part of establishing this fund, BDO stakeholders will have an opportunity to shape the program. In addition, the BDO plans to engage the private and philanthropic sectors in opportunities to expand the funding and impact potential of these grant programs.

Measurable Objectives Addressed: All

KPIs: 1.1, 2.1, 2.2, 3.2, 4.1, and 5.1.

Covered Populations Served: All, with certain grants likely to be tailored to specific populations

State Outcome Areas Addressed: All

Stakeholders: CAIs, CBOs, nonprofits, etc.

Timeline: Start Date: January 2025 **End Date:** December 2029

Major Implementation Milestones:

- Establish and deploy a two-year state-led digital opportunity fund to fund direct services.
- Data collection on program impact.
- Assessment and adjustment of program to consider funding capacity building.
- Deploy phase two.
- Data collection on program impact and continued needs.
- If funds remain, consider distributing funding to local organizations and governmental entities that can administer digital opportunity funds.

5.c.iii Strategy 3: Promote Internet Adoption

In addition to building the physical infrastructure to connect unserved and underserved Texans to broadband, the BDO will support activities to encourage and support Texans in signing up for and using internet as it's available across the state – a benefit to Texans, multiple statewide priorities and to the telecom industry that stands to benefit from an expanded customer base.

The BEAD was created to "expand high-speed internet access by funding planning, infrastructure deployment and adoption programs in all 50 states." According to Texas' BEAD Five-Year Action Plan (FYAP), "the state will need to prioritize broadband service deployment first to unserved locations followed by underserved locations and deploy infrastructure buildouts based on efficient use of subsidies and a mixed-use of technologies in areas where fiber deployments may be economically impractical."

In conjunction with the recommendations outlined in the FYAP, the BDO also recommends defining a low-cost option to encourage the development of sustainable broadband service offerings suitable for low-income consumers,

especially those within covered populations and historically marginalized communities, and to prioritize proposals that improve affordability.

As physical infrastructure improves the availability and adequacy of internet across the state, and affordable options become more widely available to end users, the BDO will implement strategies to encourage and support households to sign up for internet services. This could include partnerships with ISPs, digital navigation programs, or other programs to support individuals in signing up for internet service.

For example, Link Health is an organization conducting a pilot program in Houston that supports patients in signing up for ACP in the waiting rooms of their doctors' appointments. Their mission is "to bridge the gap in healthcare services and provide a platform that fosters collaboration, education and empowerment for all Houstonians." They partner with health care clinics to allow their representatives to "directly enroll patients in ACP during their time in waiting rooms." This initiative started in part to ensure more people have access to telehealth services. Through their work in Texas and other states, Link Health has helped more than 2,000 people receive ACP benefits.[63]

> "Lack of knowledge on how to sign up for the internet. The area has a lot of fear and doesn't necessarily know why they need it or don't want to use computers. They prefer face-to-face interaction."
>
> - Kingsville Public Meeting Attendee, South Texas Region

In promoting internet adoption as a strategy, the BDO would like to support Texans in signing up for internet service, ACP and other existing or future subsidy programs. This example is used to capture the strategy of meeting people where they go, providing resources to directly subscribe Texans to home

[63] Link Health Initiative. (n.d.). About Houston Initiative. Link Health. https://link-health.org/about-houston-initiative/

internet service, and enabling them to utilize the internet for public and essential services.

Support could include funding for navigators to enable direct enrollment in internet service, with a focus on reaching individuals in places where they may have the option to use the internet to access public and essential services such as banks, health centers, grocery stores, libraries, municipal facilities, pharmacies, schools, state facilities, workforce centers, etc.

In addition to supporting direct enrollment, the BDO will also partner with state agencies, CBOs and CAIs to promote ACP awareness through joint promotional activities, for example, leveraging Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)/SNAP mailings to include information about ACP enrollment. The BDO will collaborate with CBOs and nonprofits to have digital connectors available to promote ACP at their community events.

Finally, the BDO will consider providing grant readiness training to organizations and local governments that may seek capacity grant funding to promote internet adoption across the state. One such program is currently underway as part of the BDO's digital opportunity planning process. The outcomes and recommendations of this program will be included in the final version of this plan.

This strategy could be implemented alongside strategies one and two.

Measurable Objectives Addressed: Goal 1: All Texans have access to reliable, affordable broadband internet service at home; Goal 5: Increase the percentage of Texans who utilize the internet for public resources and service.

KPIs: 1.1, 1.2, 1.3, and 5.1

Covered Populations Served: All

State Outcome Areas Addressed: All

Stakeholders: Internet Service Providers, CBOs, CAIs

Timeline: Start Date: September 2024 **End Date:** December 2029

Major Implementation Milestones:

- BEAD, BOOT, and other broadband infrastructure programs under development.
- Establish partnerships with ISPs, CBOs, and CAIs to promote internet enrollment.
- Establish partnerships with state agencies and organizations to promote ACP.
- Establish and deploy a grant readiness program.
- Establish and deploy a two-year state-led grant program for direct enrollment in low-cost internet.
- Data collection on both programs' impacts, and assessment and adjustment of the two programs.
- Deploy phase two.
- Data collection on program impacts and continued needs.

5.c.iv Strategy 4: Maintain a Living Digital Opportunity Plan

The BDO envisions this plan as a living document, to be updated through continued research. The work the BDO conducted to generate this plan – including gathering extensive baseline data, establishing relationships with key stakeholders and residents and developing a firm understanding of the needs and barriers of Texans statewide, regionally and among covered populations – is only the beginning. The BDO will continue to measure and improve upon this document to advance digital opportunity in the state, including the continual evaluation of new policies, programs and funding opportunities until the completion of the vision of digital opportunity for all Texans.

A living Digital Opportunity Plan will continue to research, gather, measure and analyze data to evaluate progress against KPIs. Evolving and more robust data-

gathering methods may require the BDO to revisit or revise baseline metrics against which to measure progress.

For example, the BDO is considering how the state could measure the digital skills of its residents. There is no existing dataset that enables the state to assess the levels of digital skills of Texans across programs, populations and geographies. The Digital Opportunity Survey provides a snapshot, utilizing respondent self-assessments. As part of maintaining a living plan, the BDO may consider convening state partners to establish standards and processes for data collection on the range of digital literacy skills among Texas residents.

In the short term, the BDO will collect and measure key data points from grantees or partners funded by Digital Equity Act and BEAD, or other state-administered broadband-related funds. The BDO will also develop a searchable, statewide asset inventory. While the results from the DRMTS included in this plan provide a start, the BDO recognizes the value of promoting the considerable, diverse digital opportunity resources in communities across the state, making them more accessible to both residents and organizations. In fact, the process of developing the state's initial proposal for BEAD identified 25,385 entities meeting the state's definition of CAIs. In the short term, the BDO will better capture and document the digital opportunity resources these CAIs offer, as resources for implementing the vision and goals of this plan.

In the medium term, the BDO will conduct another statewide evaluation, likely via a survey, to measure changes to the baseline data established in this document.

On an ongoing basis, the BDO will continue to regularly engage with the SWG and task forces and convene the RWGs on an as-needed basis. The BDO sees the participants in the SWG and task forces as collaborators and partners in implementing the plan and achieving the vision for digital opportunity in the state. While the groups may not convene under the same structure as outlined in *Chapter 4*, the BDO will regularly engage with the membership of those groups. During regular conversations, the BDO will provide updates on the plan and new

measurement data, and request feedback from members of the groups, which include community-based organizations and representatives of covered populations. The BDO will adjust programming and implementation based on their feedback. In this way, the BDO sees the membership of these groups as an advising body to achieve the vision for digital opportunity in Texas.

The work of a living plan is already underway as part of the planning process. To accompany the publication of the final Digital Opportunity Plan, the BDO will also release a publicly accessible online dashboard enabling further analysis of the data referenced in this document, as well as an interactive online version of this plan.

Measurable Objectives Addressed: All

KPIs: 2.2, 3.1, and 5.1

Covered Populations Served: All

State Outcome Areas Addressed: All

Stakeholders: SWG, all task force members, grantees or beneficiaries of statewide administered funds

Timeline: Start Date: January 2024 **End Date:** January 2030

Major Implementation Milestones:

- Continue to meet with stakeholders in the engagement model and invite them to BDO meetings that discuss digital opportunity.
- Collect additional research to improve upon baseline data.
- Develop a statewide asset inventory.
- Collect data from grantees and partners in implementation and evaluate progress against KPIs. Adjust approach as needed.
- Conduct additional public and organizational surveys to measure progress.

6. Conclusion

6.a Conclusion

The Texas Digital Opportunity Plan is designed to improve quality of life and promote economic growth by enabling fast, reliable and affordable broadband connectivity for all residents and businesses and by promoting universal broadband adoption and access to digital skills training.

The plan presents a set of strategies and funding priorities that address specific digital needs of communities in the areas of affordable broadband access, internet-enabled devices, skills, safety and accessibility of online services. With reliable, robust access to these digital capacity-building supports and resources, all residents will be able to fully participate in the 21st century economy and social and civil society.

The BDO's work in the planning process has been guided by extensive engagement with a statewide working group on digital opportunity, RWGs spanning the state and task force meetings to determine strategic approaches to advancing targeted strategies to reach all Texans.

To build an evidence base shaping these investments, BDO also conducted a Digital Opportunity Survey and public meeting tour collecting information about needs and barriers to full adoption and use of broadband and digital resources for Texans, as well as the DRMTS to gather information about how existing digital opportunity organizations and programs are already supporting broadband accessibility, affordability, adoption and meaningful use.

The plan charts a course to shore up and increase the capacity of existing organizations and institutions already providing critical digital inclusion support to Texas residents. This asset-based approach to closing digital opportunity gaps will allow Texas to invest in working with and funding statewide partners and local organizations that are advancing the state's priorities for economic and workforce development, education, health, civic and social engagement,

accessibility of essential services and affordable access to and adoption of business and residential internet services. Throughout the planning process, and in consultation with diverse groups of stakeholders, the BDO has developed strategies to ensure every Texan has opportunities to safely access the benefits of the digital world. The Texas Digital Opportunity Plan is a first step to ensure that funding available through the Infrastructure and American Jobs Act creates a meaningful and sustainable impact across all of the state's populations and geographies. As grant funding becomes available in 2024, the BDO will continue to work with partners across the state to maintain this plan as a living document to measure, improve and advance digital opportunity in the state.

7. Appendices

Appendix A: Local Digital Opportunity Plan Tracker

Appendix B: Strategies, Objectives and Baselines

Appendix C: Needs Assessment and Asset Inventory Report, Methodology and Limitations

Appendix D: Stakeholder Engagements and Participants

Appendix E: Detailed Asset Inventory

Appendix F: NTIA Requirements Checklist

Appendix G: Online Digital Opportunity Survey

Appendix H: Paper Digital Opportunity Survey

Appendix I: Digital Resources Mapping Tool Survey