



# PLANNING FOR DIGITAL INCLUSION IN TEXAS



The University of Texas at Austin  
**Civil Rights Clinic**  
*School of Law*



TEXAS  
**BLACK CAUCUS  
FOUNDATION**

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## **Planning for Digital Inclusion in Texas**

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# Summary and Recommendations

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For all Texans, broadband is a necessity. From students doing homework to adults looking for jobs, working, shopping, banking, and making family medical appointments, Texans need affordable and reliable high-speed internet.

The Governor's Broadband Development Council and Texas legislators have focused on rural communities where broadband infrastructure deployment has lagged. State agencies and telecom companies are collaborating on efforts to expand rural broadband infrastructure.

Equally important is a focus on other under-served populations who also have far lower rates of broadband adoption compared with the general public. Low-income households, school-age children, older adults, BIPOC (Black, indigenous, and people of color) households, and people with disabilities are among the Texans who most lack broadband access. As legislators pass a law creating a state broadband office, they should ensure that the office assesses broadband access and adoption for all unserved and under-served populations. This is critical to closing the widely acknowledged "digital divide" and advancing digital equity.

Digital inclusion, or the effort to ensure that all communities can access and afford reliable, high-speed internet and have the technology equipment and know-how to use it, is multi-pronged. It depends not only on infrastructure deployment, but also on efforts relating to broadband affordability, digital literacy skills training, access to appropriate internet-enabled devices, and technical support. State support and local innovations based on local needs and resources are both necessary to close the divide.

The mission and programs of the state broadband office must prioritize digital inclusion to ensure that all Texans benefit from broadband access. As the COVID-19 pandemic has taught us, all Texans need broadband to study, work, connect to health care and essential services, and thrive. The Legislature and the contemplated state broadband office should ensure that digital inclusion measures are part of the core mission of the state's work on broadband expansion.

## Recommendations:

The Texas Legislature and state broadband office should advance digital equity, and remove barriers to broadband access and adoption for all Texans, by working in the following areas:

- 1 Access to Affordable and Reliable Broadband:** Encourage localities to investigate and negotiate low-cost, high-speed, reliable internet services for local communities. The state should apply for and timely use all available federal funding to help subsidize broadband service for low-income households who qualify.
- 2 Access to Internet-Enabled Devices:** Continue allowing local education agencies and local governments to administer programs to provide internet-enabled computers, tablets, and other devices for school-age students and other populations who lack the funds for such devices. The state should apply for and timely use all available federal funding for these efforts.
- 3 Access to Digital Literacy Training:** Encourage libraries, local education agencies, workforce development agencies, and local governments to expand opportunities for digital literacy training, including training aimed at community members for whom English is not their first language, older adults, and adults with lower education levels. The state should apply for and timely use all available federal funding for these efforts.

- 4 **Access to Technical Support:** Encourage libraries, local education agencies, workforce development agencies, and local governments to expand access to quality technical support for individuals and communities who are developing their digital literacy skills. The state should apply for and timely use all available federal funding for these efforts.
- 5 **Improved Data Collection and Analysis:** Coordinate statewide collection of broadband subscription and usage data and verify speeds and services available using multiple data sources to build detailed state broadband maps and design inclusion and expansion efforts. Encourage local governments to conduct periodic needs and assets assessments to determine the adequacy of existing broadband services and infrastructure and make plans addressing digital inclusion.
- 6 **Grants to Local Communities:** Administer grant programs to provide funding to cities, counties, libraries, local education agencies, and other entities to encourage digital inclusion assessments and programs.
- 7 **Public-Private Partnerships to Advance Digital Inclusion:** Encourage localities and state agencies to partner with schools, health institutions, libraries, and local businesses to address broadband gaps and focus on digital inclusion efforts.

# Introduction: High-Speed Internet Is Essential for All Texans

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In Texas and across the U.S., we have become increasingly dependent on high-speed internet, known as broadband, in our personal and professional lives. Businesses, schools and universities, health care providers, local governments, and other institutions with which we regularly interact have increasingly moved operations online! From banking to studying to booking doctor appointments, broadband access has become a necessity for navigating our daily lives.<sup>2</sup>

The COVID-19 pandemic has further accelerated this process of digital dependence.<sup>3</sup> Crucial life-saving endeavors, such as signing up for COVID-19 testing and vaccines, are often online-only. Schools and universities have radically expanded online learning, and many workplaces have moved online. Researchers predict much of this digital migration will outlast the pandemic.

Because broadband is a basic infrastructure need, creating, maintaining, and expanding broadband access are critical for healthy and resilient individuals and communities, as well as a vibrant economic marketplace. Recognizing this, state and local governments are crafting policies both to increase broadband in unserved rural areas, as well as to increase affordability and reliability for all under-served populations. In addition, expanding broadband adoption requires investments in digital literacy training, appropriate devices, and technical support.

## BROADBAND SPEEDS

The Federal Communications Commission (FCC) defines broadband as internet speeds of 25 Mbps (megabits per second) download speed and 3 Mbps upload speed, or 25/3 Mbps.<sup>97</sup> DSL broadband connections can provide 5-35 Mbps download speed and 1-10 Mbps upload speed.<sup>98</sup> Cable broadband connections can provide 10-500 Mbps download speed and 5-50 Mbps upload speed.<sup>99</sup> Fiber broadband connections can provide 250-1000 Mbps download speed and 250-1000 Mbps upload speed.<sup>100</sup>

Some experts argue the FCC's 25/3 Mbps threshold is too low and no longer adequate to meet the needs of a typical household during the COVID-19 pandemic, where many members may be using video applications on many devices at the same time.<sup>101</sup> They recommend 100/100 Mbps to ensure that both upstream and downstream transmission are smooth and uninterrupted.<sup>102</sup>

## SMARTPHONES CANNOT COMPARE TO WIRED HOME BROADBAND

Mobile smartphone access does not and cannot substitute for or eliminate the need for fixed home broadband. One in four low-income Americans is "smartphone-dependent," meaning that they lack fixed broadband service and rely on mobile phones.<sup>103</sup> Using mobile phones for tasks designed for larger screens, such as job applications, carries disadvantages including delays and inaccuracies.<sup>104</sup> In addition, mobile service is typically slower than wired broadband, allows less data usage, involves more interruptions, and ends up being more costly per device. For example, the FCC Lifeline program provides a standard mobile broadband speed of 3G (3 Mbps), with a total usage allowance of 3 gigabytes, while FCC service standard for fixed broadband uses a speed of 20/3 Mbps, with a total usage allowance of 1024 gigabytes.<sup>105</sup>

# Broadband Planning in Texas Is Moving Forward

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State law tasks the Governor's Broadband Development Council with researching broadband development in "unserved" areas of the state and producing an annual report.<sup>4</sup> State law defines an "unserved area" as "a census block without access to broadband capable of providing: (A) a download speed of at least 25 megabits per second; and (B) an upload speed of at least three megabits per second."<sup>5</sup> The Council may also research other matters agreed upon by a majority of the members.<sup>6</sup>

In its 2020 inaugural report, the Council acknowledged that broadband is a necessity, one that is critical for economic growth and success and job creation.<sup>7</sup> The COVID-19 pandemic has further revealed the universal need for broadband, and broadband expansion will be critical to economic recovery.<sup>8</sup> In addition to noting the barriers to rural broadband infrastructure, the report also noted that statewide coordination—through a state broadband office with dedicated staff—will enable better statewide promotion and collaboration to expand broadband access.<sup>9</sup> Finally, the report noted that many Texans have been slow to adopt broadband because "it is too expensive, and others do not have access to a computer, or they lack digital literacy."<sup>10</sup>

In 2021, the Texas Legislature is expected to create a state broadband office, charged with making a statewide broadband plan and overseeing broadband expansion across the state. As explained below, broadband expansion planning should include digital inclusion efforts.

## The State's Broadband Plans Should Prioritize Digital Inclusion

Access to broadband is unevenly available across communities. In Texas, as in other states, rural communities lack broadband availability, often because internet service providers have not deployed broadband infrastructure in these communities due to cost.<sup>11</sup> Similarly, low-income households—in rural, suburban, and urban communities—show low levels of broadband adoption, primarily because of cost and affordability.<sup>12</sup> In addition, lack of access to digital literacy training, technical support, and costly devices poses additional barriers to broadband adoption for low-income households.<sup>13</sup> Studies have found that such barriers also impact older adults and persons with disabilities.

Digital equity is "a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy."<sup>14</sup> Experts recognize that digital equity allows individuals to participate in education, employment, health, banking, and other essential services.

Digital inclusion refers to the efforts needed to ensure that all individuals and communities, including the most disadvantaged, have access to and use of information and communications technology.<sup>15</sup> This includes access to reliable, affordable high-speed internet, appropriate internet-enabled devices, digital literacy training, technical support, and applications and online content designed to encourage participation.<sup>16</sup>

Digital inclusion is a critical part of any effort to expand broadband access. In education, digital inclusion efforts significantly increase student success at the K-12 and college levels and create pathways for learning and job preparedness. In workforce participation, digital inclusion efforts increase adults' readiness for a wide range of jobs and workplaces that require digital skills.<sup>17</sup> A digitally trained workforce

in turn enables business and economic growth. In health care, digital inclusion efforts increase access to in-person and telehealth opportunities for management of illnesses and chronic conditions. In every realm, digital inclusion efforts result in positive outcomes and market efficiencies.

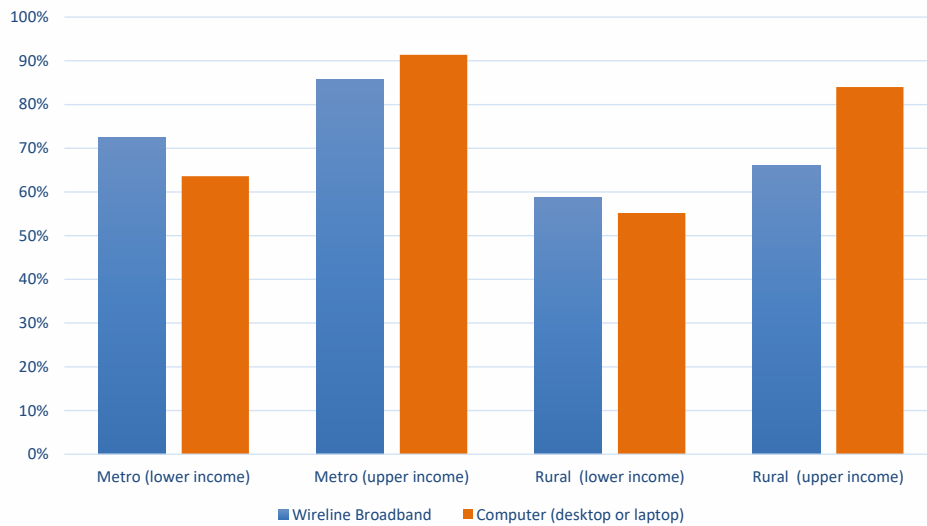
# Digital Inclusion Benefits Multiple Populations Who Lag in Broadband Access

## Rural Households Lag in Broadband Access Due to Infrastructure Gaps

In Texas, a far larger percentage of rural households lack access to broadband infrastructure, as compared with urban and suburban households.<sup>18</sup> This problem often stems from the costs and other challenges of laying broadband infrastructure in remote areas or on difficult terrain.<sup>19</sup> The Federal Communications Commission (FCC) has led the charge on building network infrastructure in rural areas to increase broadband access.<sup>20</sup> For example, in 2020, the FCC devoted over \$16 billion to its Rural Digital Opportunity Fund.<sup>21</sup> In Texas, federal funds, state initiatives, and local efforts have proven important in expanding broadband infrastructure to unserved rural households.<sup>22</sup> State data from 2019 shows lower broadband and computer adoption in rural areas:

**FIGURE 1: REGION BY INCOME: BROADBAND AND COMPUTER ADOPTION IN TEXAS <sup>1</sup>**

2019 American Community Survey data for Texas



## Broadband Expansion Efforts Should Be Comprehensive and Statewide

Successful efforts at digital inclusion require an assessment of all the groups and communities that lack reliable broadband access, including densely populated metropolitan areas. For example, data from the 2018 American Community Survey, conducted by the U.S. Census Bureau, shows that the U.S. has “more than three times as many urban as rural households living without home broadband of any kind.”<sup>23</sup> A study by the National Digital Inclusion Association estimates that urban counties with unconnected residents account for one-third of all Americans living without broadband, while rural



counties with unconnected residents account for less than 8% of the same.<sup>24</sup> According to an analysis of 2018 American Community Survey data, the number of households without broadband in urban areas (15 million) is three times the number of households without broadband in rural areas (5 million).<sup>25</sup> Although a higher percentage of rural households (21%) across the U.S. lack broadband compared to the percentage of households in non-rural areas (15%),<sup>26</sup> the raw number of urban households lacking access is far higher. Texas data from 2019 shows a high number of lower income metro households without broadband or computer access:

**FIGURE 2: ADOPTION OF BROADBAND AND DIGITAL DEVICES IN TEXAS<sup>2</sup>**

2019 American Community Survey data for Texas

	Computer (desktop or laptop)	Wireline Broadband	Tablet Computer	Smartphone	Households
Metro, lower income	63.60%	72.4%	46.4%	72.8%	199,169
Metro, upper income	91.40%	85.7%	75.5%	91.8%	233,866
Rural, lower income	55.20%	58.8%	38.5%	63.8%	36,858
Rural, upper income	84.00%	66.1%	66.6%	87.3%	27,922
All Texas					
State of Texas	77.20%	78.3%	60.6%	81.8%	497,815

## Low-Income Households Across the State Have Lower Broadband Adoption Due to Cost and Other Barriers

Affordability is a key reason that many households do not adopt broadband, even if they live in metropolitan areas where high-speed internet is generally available.<sup>27</sup> One study estimates that 80% of households that lack broadband subscriptions have a broadband network with adequate service available in their area.<sup>28</sup> Cost, however, is a critical barrier. For example, households with incomes under \$35,000 make up 28% of all U.S. households, but make up 60% of households without broadband subscriptions.<sup>29</sup> Texas data shows far lower broadband and adoption rates as household income drops:

**FIGURE 3: BROADBAND AND COMPUTER ADOPTION BY INCOME IN TEXAS<sup>3</sup>**

2019 American Community Survey data for Texas

	Less than \$25K	Between \$25K and \$50K	Between \$50K and \$75K	Between \$75K and \$125K	Greater than \$125K
<b>Metro</b>					
Wireline Broadband	67.5%	73.5%	79.4%	83.9%	89.5%
Computer	50.8%	68.9%	81.9%	89.9%	96.1%
<b>Rural</b>					
Wireline Broadband	54.4%	60.0%	63.6%	65.8%	68.1%
Computer	42.2%	61.8%	74.8%	83.5%	90.0%
<b>All Texas</b>					
<b>State of Texas</b>					
Wireline Broadband	65.6%	71.6%	77.4%	81.8%	87.8%
Computer	49.4%	67.8%	81.0%	89.2%	95.6%

Household income significantly impacts broadband adoption regardless of geography. While earlier studies surmised that low-income households might decline broadband out of a perceived lack of need, recent studies show that concerns about cost predominate.<sup>30</sup> Broadband plans can be quite costly, with hidden fees, equipment fees, rate hikes after the expiration of promotions, and overage fees for exceeding data caps.<sup>31</sup> In addition, research shows that low-income households may live in areas with access to lower-speed internet service. High cost combined with unreliable and interrupted internet service result in low broadband adoption.

The Texas Legislature should ensure that state broadband plans and programs include an assessment of broadband affordability for low-income and moderate-income households, and accordingly set policy goals and devise digital inclusion programs.

### FCC BROADBAND PROGRAMS FOR LOW-INCOME HOUSEHOLDS

State broadband offices can facilitate enrollment in the FCC's Lifeline and EBB programs. The FCC's Lifeline program provides a discounted rate of \$9.25 per month, or \$34.25 per month for tribal households, for mobile broadband service to eligible low-income consumers.<sup>106</sup> However, the program is primarily focused on mobile, not wired home broadband, and only allows one discount per household, meaning a household with wireless service and wired service would not receive a discount for both.<sup>107</sup> During the pandemic, as part of the Consolidated Appropriations Act, Congress created the short-term Emergency Broadband Benefit (EBB) program, which will be administered by the FCC.<sup>108</sup> Eligible households can receive subsidies of up to \$50 per month for internet (or up to \$75 for tribal households) and up to \$100 for a one-time purchase of a device, i.e., laptop or tablet.<sup>109</sup>

## School-Age Children Often Lack Broadband Access, Typically Because of Cost

School-age students need high-speed internet at home to complete their homework, conduct research for school assignments, and prepare for college and job readiness.<sup>32</sup> Studies have shown, for example, that 6 out of 10 eighth graders use the internet at home every day to complete their homework.<sup>33</sup>

As of 2015, a Pew Research Center survey found that 15% of American school-age students did not have a high-speed connection at home, and that number increased to 35% for students in low-income households.<sup>34</sup> A 2018 Pew survey of teens aged 13 to 17 found that the "homework gap" is particularly pronounced for Black students.<sup>35</sup> About 25% of Black teens were unable to complete their homework because of lack of reliable Internet access, while 17% of Latinx teens and 13% of White teens faced the same problem.<sup>36</sup> Studies during the Covid-19 pandemic revealed persistent gaps for school-age children in low-income households, disproportionately affecting Black and Latinx children.<sup>37</sup> These gaps compromise students' ability to achieve educational outcomes.

The Texas Legislature should ensure that state broadband plans and programs include data collection and assessments focusing on school-age children, along with geography and other demographics, and accordingly set policy goals and devise digital inclusion programs. In Texas, children in low-income households are more likely to lack broadband and devices:

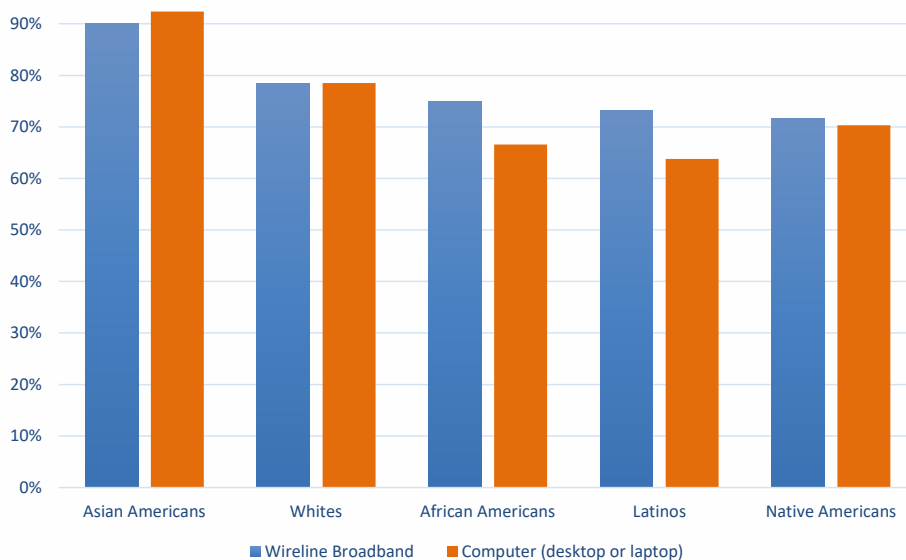
**FIGURE 4: DIGITAL ADOPTION BY HOUSEHOLDS WITH CHILDREN UNDER 18 IN TEXAS<sup>4</sup>**  
 2019 American Community Survey data for Texas

	Households with children under 18	Low-income households with children under 18	African American households with children under 18	Hispanic households with children under 18
Wireline Broadband	79.3%	69.0%	77.0%	73.5%
Desktop or Laptop	81.9%	66.0%	75.6%	70.1%
Tablet	73.1%	59.1%	65.6%	64.1%
Tablet or Laptop	88.8%	77.8%	84.2%	81.0%
Smartphone	92.1%	86.9%	88.4%	89.0%

## Black, Latinx, Indigenous, and Other People of Color Households Have Lower Rates of Broadband Adoption, Likely Due to Cost

The 2018 American Community Survey also showed racial and ethnic disparities in broadband adoption. While approximately 10% of all White, non-Hispanic households lacked a broadband subscription, almost 18% of Black households and 14% of Latinx households lacked home broadband.<sup>38</sup> Studies show these lower rates of adoption are likely due to cost, as well as limited availability of reliable, high-speed internet based on urban or rural geography. Lack of accurate information on available high-speed subscriptions also acts as a barrier. In Texas, Black, Latinx, and Native American communities show lower rates of broadband and computer adoption:

**FIGURE 5: BROADBAND AND COMPUTER ADOPTION BY RACE AND ETHNICITY IN TEXAS<sup>5</sup>**  
 2019 American Community Survey data for Texas



The Texas Legislature should ensure that state broadband plans and programs include data collection and assessment by race and ethnicity, along with geography and other demographics, while setting policy goals and devising digital inclusion programs.

## Older Adults Have Lower Rates of Broadband Adoption Due to Cost and Other Barriers

Studies show that broadband adoption drops sharply for individuals over age 65. Nearly 22 million American seniors lack wired broadband access at home.<sup>39</sup> According to American Community Survey data, only 58% of Americans age 65 or older have wireline broadband internet service at home, compared with 73% of all other adults.<sup>40</sup> Among older adults, low educational attainment and income below \$25,000 strongly predict a lack of broadband, with both categories more than 10 times more likely to be offline at home than older adults with higher education or higher incomes.<sup>41</sup> Race also plays a significant role; Black older adults are 2.6 times more likely to be offline, and Latinx older adults are 3.4 times more likely to be offline, compared to older White adults.<sup>42</sup> Gender also plays a role, with women 2.5 times more likely to be offline than men; being single and living alone further exacerbates the connectivity gap.<sup>43</sup> In Texas, older adults have lower rates of digital adoption:

**FIGURE 6: DIGITAL ADOPTION BY AGE IN TEXAS**<sup>6</sup>  
2019 American Community Survey data for Texas

	Age 18 to 64	Age 65 to 74	Age 75 and over
Wireline Broadband	79.3%	75.6%	74.5%
Desktop or Laptop	80.8%	74.3%	58.0%
Tablet	66.5%	52.5%	33.7%
Tablet or Laptop	86.4%	78.9%	62.6%
Smartphone	89.2%	71.9%	47.6%

Cost is a significant barrier to older adults in adopting broadband, across other demographics.<sup>44</sup> Moreover, support services including digital literacy training, technical support, and device modifications may be critical to helping older adults get and stay online.<sup>45</sup>

The Texas Legislature should ensure that state broadband plans and programs include data collection and assessment by age, along with geography and other demographics, and accordingly set policy goals and devise digital inclusion programs.

## People with Disabilities Have Lower Rates of Broadband Adoption Due to Cost and Accessibility Barriers

More than 56 million Americans are living with a disability, and they experience more significant gaps in broadband access than other Americans.<sup>46</sup> Compared with Americans who do not have a disability,

adults with disabilities are roughly 20% less likely to subscribe to home broadband, as well as own a computer, tablet, or smartphone.<sup>47</sup> Cost is a significant issue for people with disabilities, which includes a large share of older adults. In addition, studies have shown that websites are not accessible to persons with visual impairments and other disabilities.<sup>48</sup> Devices, applications, and content may similarly lack accessibility features.

The Texas Legislature should ensure that state broadband plans and programs include data collection and assessment by disability, along with geography and other demographics, and accordingly set policy goals and devise digital inclusion programs.

## Lessons Learned from Recent Digital Inclusion Efforts in Texas

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In Texas, local efforts have already shown how impactful broadband inclusion efforts can be.

### School-Age Children Benefited from Home Wired Broadband and Devices During the COVID-19 Pandemic

In Texas, the COVID-19 pandemic revealed the extent of digital inequity among school-age students. According to the Texas State Teachers Association, roughly one-third of all school-age children in Texas lack either broadband access or a computer.<sup>49</sup> Disparities in access also exist based on race and ethnicity. Latinx students are less likely than White students to have access to basic internet, computer, broadband, and both broadband and a computer.<sup>50</sup> Black students also have lower rates of access, as do children in Texas living below the poverty line.<sup>51</sup> Even when students have a device at home, it may be a smartphone, which is less conducive to completing homework or doing research.<sup>52</sup> Moreover, students may have to share that one device with other school-age siblings or parents.

Through Operation Connectivity, the Governor's Office and the Texas Education Agency deployed \$200 million in federal CARES Act funds to local education agencies, who used a variety of means to ensure that students learning at home during the COVID-19 pandemic had the digital tools needed to continue their education. The program included the purchase of laptops, tablets, and other devices to ensure that each student had a device at home dedicated to learning, as well as the purchase of over 480,000 hotspots with unlimited data and \$15 monthly fees.<sup>53</sup> The agencies also conducted a technology assets and needs survey, concluding that "17% of Texas students lack access to high speed internet and 30% lack a dedicated and adequate learning device at home."<sup>54</sup> To address broadband gaps, local education agencies were authorized to consider whether to provide vouchers to parents for paying internet service providers, share information on low-cost internet services, or use other solutions, such as deploying Wi-Fi hotspot buses.<sup>55</sup> Finally, education agencies also developed support services such as help-desks, inventory management and refresh, and digital literacy for students, families, and teachers.<sup>56</sup>

Operation Connectivity showed that multimodal solutions—encompassing devices, access to broadband service, and technical supports—are necessary for meeting the technology needs of K-12 students. The Legislature and the state broadband office should ensure that these vital programs continue with appropriate scope after the pandemic.

## Local Governments Pursuing Digital Inclusion Are Filling Critical Broadband Gaps Based on Local Needs and Resources

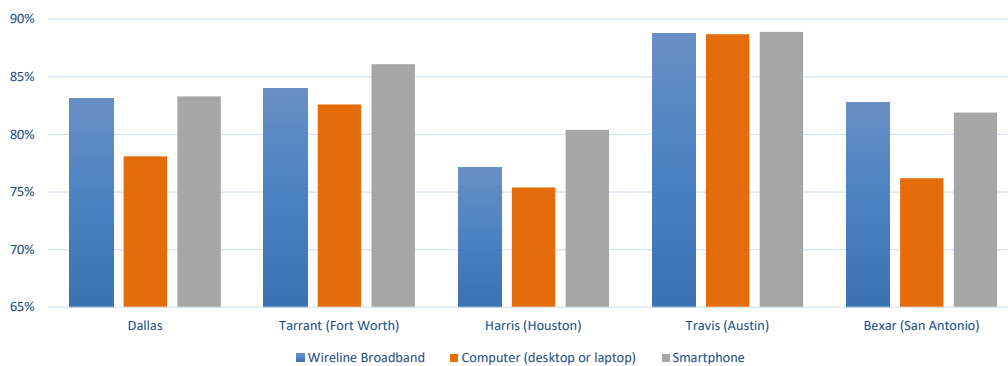
Local governments around Texas are working on broadband expansion and inclusion strategies. Many entities begin, as experts suggest, with a needs and assets assessment to determine what internet services and resources exist in the local community, and what gaps need to be filled, focusing not only on infrastructure but cost and digital literacy as well.<sup>57</sup>

In Brownsville, which was ranked as the second least connected city in the U.S., city leaders convened a summit with the Federal Reserve Bank of Dallas to examine how to expand digital infrastructure and adoption to meet the challenges of a digital economy.<sup>58</sup> In 2020, city leaders partnered with a university and other local institutions to study internet assets and needs and develop a plan for broadband expansion and digital inclusion.<sup>59</sup> Brownsville is home to almost a half-million residents, almost 90% of whom identify as Latinx or Hispanic; its poverty rate is 28%, and it has very low broadband adoption rates compared with other U.S. cities.<sup>60</sup> Local leaders recognized that increasing broadband adoption and use will help improve economic conditions for residents by opening up educational, work, and health opportunities.<sup>61</sup> In addition to a citywide plan that includes digital inclusion, local health departments are partnering with *promotoras*, or community health workers, to help people navigate online portals for health care appointments.<sup>62</sup> By increasing digital literacy and exploring barriers to broadband access, Brownsville hopes to create an enhanced and inclusive digital environment.

In San Antonio, one in four residents lack equipment, skills, or internet connectivity, and local leaders are creating a roadmap for long-term solutions, including a digital inclusion strategy.<sup>63</sup> The City commissioned a study that concluded that disparities in broadband correlate with race/ethnicity and income, as well as education level, homeownership, and employment.<sup>64</sup> In addition to examining broadband access by age, income, and race/ethnicity, the study also looked at device access and use, and digital literacy skills.<sup>65</sup> It concluded that community members value internet access and would like to take advantage of technology and connectivity, but cost and digital literacy challenges remain.<sup>66</sup> The City will next develop a plan to ensure equitable distribution of online access.

**FIGURE 7: ADOPTION OF BROADBAND AND COMPUTER ACROSS TEXAS METROPOLITAN AREAS<sup>7</sup>**

2019 American Community Survey data for Texas



The Legislature and the state broadband office should encourage other cities and local governments across Texas to develop digital inclusion strategies to address cost, digital literacy, product development, and infrastructure.

## Local Public-Private Partnerships Are Helping Address Broadband Inequities

In 2018, Dr. Brian Whitacre, a professor and researcher specializing in research on broadband access and use, performed an assessment of AT&T broadband services in Dallas County, Texas.<sup>67</sup> Using census data and FCC data reported by AT&T to map internet service availability across the County, he concluded that AT&T had “withheld fiber-enhanced broadband improvements from most Dallas neighborhoods with high poverty rates, relegating them to Internet access services which are vastly inferior to the services enjoyed by their counterparts nearby in the higher-income Dallas suburbs.”<sup>68</sup>



Dr. Whitacre found that AT&T offered four tiers of internet service with increasing cost, speed, and reliability, and that the company had withheld both types of its faster internet services “from a disproportionate number of census blocks with individual poverty rates above 35% in Dallas County.”<sup>69</sup> AT&T’s failure to provide latest-generation internet infrastructure meant that high-poverty census blocks had significantly slower internet than middle-income neighborhoods and suburbs.<sup>70</sup> Low-income customers experienced uneven, limited internet cases with extremely slow speeds.<sup>71</sup> The company defended its practices based on budget and customer demand.<sup>72</sup>

In recent years, a public-private partnership has emerged in Dallas to address the digital divide. The Internet for All Coalition, made up of school districts, businesses, community organizations, and the City of Dallas, has come together to ensure high-speed internet for all Dallas households.<sup>73</sup> Its first milestone was “to get every K-16 student connected to high-speed broadband in their homes by January 2021.”<sup>74</sup> The coalition’s website lists a variety of resources on obtaining devices, free and low-cost internet services, information on telehealth services, resources for online banking, and other critical information on community resources to increase connectivity for low-income households.<sup>75</sup>

## Broadband Inclusion Increases Telehealth Opportunities for Texans

Telehealth is “the use of electronic information and telecommunication technologies to support and provide long-distance clinical health care and monitoring.”<sup>76</sup> During the pandemic, expanded use of telehealth technologies has allowed populations to access care they previously could not. For example, rural patients no longer need to drive long distances for appointments with specialized practitioners in urban areas. But without broadband access, digital literacy training, and technical support, these individuals cannot take advantage of the opportunities telehealth provides. Patients must be able to use digital tools and applications to manage their health conditions effectively.<sup>77</sup> In January 2021, recognizing the health benefits from broadband access, Methodist Healthcare Ministries of South Texas, Inc., provided a \$75,000 grant to the City of Brownsville to help efforts to boost internet connectivity for the area, which is home to many low-income residents.<sup>78</sup>

# Lessons Learned from Digital Inclusion Efforts in Other States

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Texas legislators and policymakers can glean important lessons from other states pursuing broadband access and digital inclusion efforts.

## State Broadband Offices Support Local Innovation

Local innovations in broadband are critical because the specifics of the digital divide are different in each community.<sup>79</sup> Local efforts can address affordability, infrastructure, lack of devices, lack of digital skills, and other needs.<sup>80</sup> In recognition of this, states are supporting localities with small but impactful digital inclusion programs.

The state of North Carolina, in partnership with North Carolina State University, created a county-level microgrant program for digital inclusion projects.<sup>81</sup> Qualifying organizations include nonprofits, government institutions, educational institutions, and churches. The microgrants are for \$5,000, aimed not at major infrastructure projects, but rather to support smaller initiatives like local digital literacy projects.

Supporting local governments and organizations through small grants will allow the new Texas broadband office to multiply its impact across the state and tailor solutions to local needs.

## States Promote Digital Literacy in Workforce Development Programs

Digital skills are critical to employment and advancement for workers in the modern economy.<sup>82</sup> One-third of all American workers lack digital literacy, which encompasses “both the capacity to use technology and the cognitive skills necessary to navigate it successfully.”<sup>83</sup> Many workers have “fragmented knowledge,” allowing them to navigate digital tasks in their daily lives, typically on cell phones, but they lack digital problem-solving skills needed for higher-paying jobs.<sup>84</sup> Opportunities for digital skills-building are critical for workers with low digital literacy, who tend to have lower educational attainment.<sup>85</sup>

In North Carolina, broadband access will be incorporated into existing workforce development strategies for communities.<sup>86</sup> The state already has a “Certified Work Ready Community” initiative that encourages communities to emphasize their workforce’s ability to meet the needs of potential employers. Once certified, the program partners advertise the communities to potential employers. The state broadband plan calls for adding broadband development to the certification requirements.<sup>87</sup>

### STATE BROADBAND OFFICES

Seven states have established a broadband office by executive order or statute to coordinate broadband planning and expansion.<sup>110</sup> At least 15 other states gave broadband responsibilities to existing agencies or departments and often also created a separate advisory body.<sup>111</sup> The Department of Commerce and the Department of Community Affairs were popular choices for the states that chose this route, but options varied widely.<sup>112</sup> Maine, Wyoming, and many other states require entities in charge of broadband expansion to draft formal plans.<sup>113</sup>



Supporting digital literacy efforts helps ensure that the Texas workforce is equipped to meet current and future employer needs, cementing Texas's reputation for economic progress and growth.

## States Are Reviewing and Verifying Broadband Speeds to Better Understand Broadband Gaps and Design Solutions

The FCC uses a baseline broadband speed of 25 megabits per second (Mbps) download speed and 3 Mbps upload speed, commonly referred to as 25/3 Mbps, as a benchmark for determining broadband access. However, users may experience lower speeds with a specific provider in a specific region or area.<sup>88</sup> In addition, this benchmark may not be enough to support the internet use of an entire household, particularly during the pandemic. States are reviewing and verifying actual broadband speeds in order to better design broadband expansion efforts.

The Florida Office of Broadband has been tasked with creating a strategic plan that includes a process to review and verify public input regarding transmission speeds and availability of broadband internet services.<sup>89</sup> In North Carolina, data about individual broadband and technology access is being collected via an online survey and presented in map view on a dashboard.<sup>90</sup>

In Texas, the new state broadband office should utilize public input to create robust data about actual broadband speeds.

## States Are Collecting and Analyzing Data from Multiple Sources to Improve the Accuracy of Broadband Maps

A significant challenge to digital inclusion efforts is the lack of available information. The FCC guidelines provide a baseline, but the definitions of “unserved” communities and the benchmark speeds do not create a comprehensive picture. In most states, new broadband offices are tasked with creating strategic plans and broadband maps for the state, using data from multiple sources.

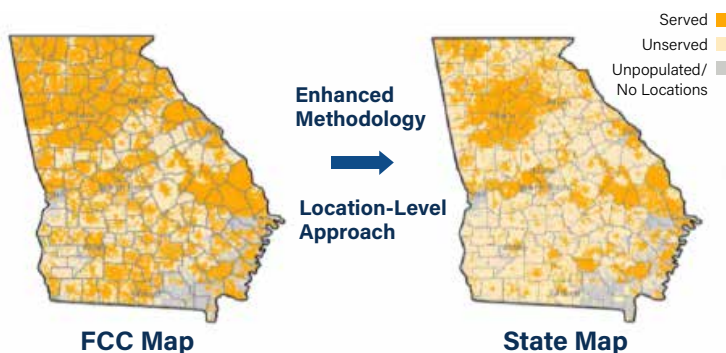
### STATE BROADBAND FUNDING

Colorado, Vermont, and eight other states use their “universal service funds and high-cost support mechanisms” to bolster broadband efforts.<sup>114</sup> Twenty-five states, including Alabama, Kentucky, Virginia, and North Carolina, have created broadband funds to incentivize “companies, nonprofit organizations, and telephone or electric cooperatives to invest in the infrastructure needed.”<sup>115</sup> By funding part of the cost to deploy broadband in unserved and under-served areas, where an ISP (internet service provider) might not otherwise see a business case, the state supports expansion efforts.<sup>116</sup>

One area of concern with maps based on FCC-collected data, which relies on unverified reports by telecommunications providers, is the way “unserved” is defined. The FCC defines an “unserved” area as any census block where not a single person could potentially have access to broadband. If one person in a census block could have internet access, the entire census block is considered served. A more sensitive access map is necessary to serve as a basis for future broadband access implementation. As a result, many states have tasked their broadband offices with developing more detailed maps. Maps showing subscription rates, actual internet speeds, and similar details help bolster efforts at broadband expansion.

Georgia has implemented an effective mapping strategy. Phase I of the map, which has been completed, was an analysis of census blocks that were identified as “unserved” by the FCC.<sup>91</sup> Phase

II involves analysis of over 3 million specific locations within the unserved census blocks identified in Phase I. A pilot program for Phase II that assessed three counties concluded in March 2019, and the methodology was deemed useful. The data for Phase II is being requested from local governments, property appraisers, e911 coordinators, and power companies. The varied data sources mean that Georgia is on course to have a comprehensive and more accurate broadband access map that does not rely solely on self-reporting from broadband providers.



Comparison of FCC map of served areas with Georgia's map made with updated methodologies.<sup>117</sup>

In Texas, the broadband office should create new broadband maps incorporating data from multiple sources to enhance data specificity and accuracy.

## States Are Setting Statewide Broadband Goals to Drive Efficiency

Virginia has launched a program with the goal of achieving universal broadband access by 2028 called Commonwealth Connect. The plan defines “universal” broadband access as anything above 95% of homes and businesses combined.<sup>92</sup> Commonwealth Connect operates largely by advocating for grant money to be made available to communities. There are two primary sources for community grants.<sup>93</sup> The first, available to any community in the state, is the Virginia Telecommunication Initiative (VATI),

run through the Virginia Department of Housing and Community Development. The other source is the Tobacco Region Revitalization Commission’s Last Mile Broadband Program. These grants are available to specific subregions of Virginia.

### DIGITAL LITERACY AND DIGITAL NAVIGATORS

The National Digital Inclusion Association’s (NDIA) Digital Navigators program is a model for community-based technical support efforts.<sup>118</sup> Digital Navigators are hired to help local community members learn how to use online services that provide access to critical resources such as education, food, health, and childcare.<sup>119</sup> A Digital Navigator is an individual already embedded in the community, possibly working at a library, social service or health provider, or other community-based organization.<sup>120</sup> Digital Navigators can assess a community member’s broadband subscription, device and digital skills needs, and help them find appropriate resources.<sup>121</sup>

Commonwealth Connect has identified factors for the allocation of grants, including ensuring a balance between areas of high population density and more isolated locations.<sup>94</sup> To improve affordability, the program is focused on developing new models that offer enough benefits for service providers to build connections to low-income residents without having to rely on ongoing subsidies from the state.<sup>95</sup> VATI, the primary funding mechanism, is designed to prioritize speed and efficiency. Commonwealth Connect has connected approximately 133,000 homes already and is continuing to expand.<sup>96</sup>

In Texas, the state broadband office should set specific statewide goals for connectivity and explore new models for efficient broadband expansion that includes under-served groups.

# Conclusion and Recommendations: Digital Inclusion Is Critical in Texas

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## Conclusion

Broadband access is critical. Lack of high-speed internet access can reinforce existing barriers to education, workforce development, healthcare, and economic opportunity. Digital inclusion efforts can increase opportunities for healthcare, education, jobs, and economic success. The Legislature and the contemplated state broadband office should ensure that digital inclusion measures are part of the core mission of the state's work on broadband expansion.

## Recommendations:

The Texas Legislature and the state broadband office should advance digital equity, and remove barriers to broadband access and adoption for all Texans, by working in the following areas:

- 1 Access to Affordable and Reliable Broadband:** Encourage localities to investigate and negotiate low-cost, high-speed, reliable internet services for local communities. The state should apply for and timely use all available federal funding to help subsidize broadband service for low-income households who qualify.
- 2 Access to Internet-Enabled Devices:** Continue allowing local education agencies and local governments to administer programs to provide internet-enabled computers, tablets, and other devices for school-age students and other populations who lack the funds for such devices. The state should apply for and timely use all available federal funding for these efforts.
- 3 Access to Digital Literacy Training:** Encourage libraries, local education agencies, workforce development agencies, and local governments to expand opportunities for digital literacy training, including training aimed at community members for whom English is not their first language, older adults, and adults with lower education levels. The state should apply for and timely use all available federal funding for these efforts.
- 4 Access to Technical Support:** Encourage libraries, local education agencies, workforce development agencies, and local governments to expand access to quality technical support for individuals and communities who are developing their digital literacy skills. The state should apply for and timely use all available federal funding for these efforts.
- 5 Improved Data Collection and Analysis:** Coordinate statewide collection of broadband subscription and usage data and verify speeds and services available using multiple data sources to build detailed state broadband maps and design inclusion and expansion efforts. Encourage local governments to conduct periodic needs and assets assessments to determine the adequacy of existing broadband services and infrastructure and make plans addressing digital inclusion.
- 6 Grants to Local Communities:** Administer grant programs to provide funding to cities, counties, libraries, local education agencies, and other entities to encourage digital inclusion assessments and programs.
- 7 Public-Private Partnerships to Advance Digital Inclusion:** Encourage localities and state agencies to partner with schools, health institutions, libraries, and local businesses to address broadband gaps and focus on digital inclusion efforts.

# Authors and Acknowledgments

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## Figure Endnotes

- 1 Professor Sharon Stover, Ph.D., The University of Texas at Austin Technology and Information Policy Institute, *The State of Digital Inclusion in Texas*, April 2021, [https://gov.texas.gov/uploads/files/business/GBDCpacket4\\_15.pdf](https://gov.texas.gov/uploads/files/business/GBDCpacket4_15.pdf) (analyzing U.S. Census Bureau's American Community Survey (ACS) 5-Year Public Use Microdata Area (PUMA) Data (2015- 2019), released in January 2021).
- 2 *Id.*
- 3 *Id.*
- 4 *Id.*
- 5 *Id.*
- 6 *Id.*
- 7 *Id.*



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