A Handbook for the Effective Administration of State and Local Digital Equity Programs

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INTRODUCTION

When it comes to expanding broadband connectivity, policy makers face two major challenges: (1) ensuring that all U.S. residents have access to high-speed fixed broadband connectivity ("availability"), and (2) ensuring that as many U.S. residents as possible subscribe to fixed broadband ("adoption"). In other words, **policy makers are tasked with making sure fixed broadband is both universally available and universally adopted.**

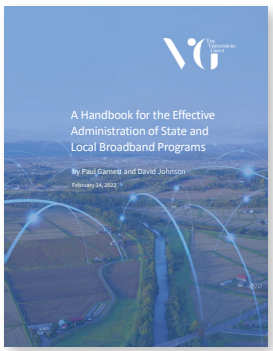
Available evidence shows that the broadband adoption gap is far greater than broadband availability gap. While the broadband availability gap is closing, the adoption gap persists. Approximately 5% of U.S. residents lack access to 25/3 Mbps broadband, and approximately 10% of U.S. residents lack access to 100/20 Mbps broadband. By comparison, approximately 23% of U.S. residents do not subscribe to broadband at home.

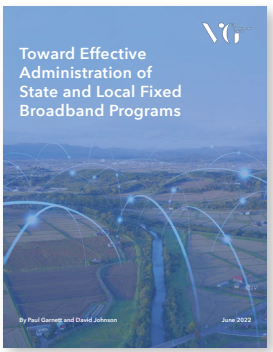
Broadband availability and adoption are lower across the U.S. in locations with higher rates of poverty. Due to a variety of factors, historically, lower-income U.S. residents have subscribed to fixed broadband at lower rates. We also see lower broadband and technology adoption rates among specific groups, including residents of rural areas, communities with low rates of literacy and digital skills, aging individuals, persons with disabilities, and certain minority groups. Importantly, national statistics do not tell the whole story. Broadband availability and adoption gaps impact different groups, communities, and individuals differently and therefore **success demands localized and individualized assessments and interventions.**

Thanks to recent unprecedented funding and support from the federal government, **state, territorial, Tribal, municipal, and local governments have a tremendous opportunity to deliver digital equity** by expanding rates of broadband availability and adoption overall and within historically underrepresented groups. Government at all levels should work with the private sector, community-based non-profits, and community members to close the digital divide once and for all.

In order to meet the twin challenges of closing the broadband availability and adoption gaps, broadband program administrators must find creative ways to stretch available funding. We recommend **leveraging broadband funding principles and following actionable best practices** (see Table 1) to get the most out of every available dollar. Program administrators will need to understand, at a granular level, which locations lack access to broadband, who is not subscribing to home broadband, and why non-adopting communities and individuals remain unconnected. In fact, for maximum success, programmatic interventions will need to be individualized, targeting broadband and technology non-adopters on a one-to-one (or door-to-door) basis. This can be done, and it is being done cost-effectively in communities large and small, urban and rural.

This handbook is focused on effective state and local government administration of digital equity programs. It complements and builds upon two recent reports: ***A Handbook for the Effective Administration of State and Local Broadband Programs*** and ***Toward Effective Administration of State and Local Fixed Broadband Programs***.





HOW TO USE THIS HANDBOOK

This Handbook offers key principles and best practices that state and local governments should follow in structuring their digital equity plans and establishing and supporting digital equity programs. States, territories, and Tribes are currently developing digital equity plans to meet the funding requirements of the Infrastructure Investment and Jobs Act (IIJA).[1] County, municipal, and local governments also are developing more localized digital equity plans, recognizing the importance of home broadband connectivity and online services to social, civic, and economic participation, and leveraging funding provided under available federal and state programs.

This Handbook focuses on the importance of building "digital equity" into broadband availability and adoption programs. Digital equity requires acknowledging that different individuals and groups of individuals will require different skills, resources, and opportunities to successfully participate in an increasingly digital world, and empowering them to do so.

Broadband availability and adoption programs should be **equitable by design**, meaning programs should seek to address underlying social and economic inequalities and should focus, as appropriate, on groups, areas, and characteristics of greatest need: low-income groups; rural areas; communities with low rates of literacy and digital skills; aging individuals; persons with disabilities; and minority groups with low adoption rates.

In this handbook, we review:

- What publicly available data tells us about digital equity in local communities and how they impact various demographics, including income, education levels, race, and age.
- How income can be one of several key factors in determining whether a household has access to fixed residential broadband[2] and, if so, subscribes to such service.
- How the Affordable Connectivity Program (ACP) and similar programs can help eliminate cost and affordability as considerations for low-income households, and why extending the ACP into the future should be a national priority.
- Ways program administrators can use data, visualizations, and survey work to guide targeted programmatic interventions.
- Examples of successful digital equity programs, including those leveraging public-private partnerships involving government, digital navigators, digital skilling programs, and other community-based non-profits, and the private sector.

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Table 1 — *Digital Equity Planning: Actionable Best Practices*

Finally, building upon our broadband programming principles and steps, we describe best practices that state and local governments should follow when developing and implementing digital equity programs (Table 1).

KEY INFRASTRUCTURE INVESTMENT AND JOBS ACT (IIJA) PROGRAMS

The **IIJA's Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity Act (DEA) programs** provide states and territories with the opportunity to close both broadband availability and adoption gaps. Both programs offer funding to support digital equity planning and programming. The National Telecommunications and Information Administration (NTIA), which administers and oversees these programs, strongly encourages states and territories to participate and urges governments to ensure that their respective BEAD and DEA plans are coordinated and complementary.[3] Other laws to support broadband adoption efforts, such as the American Rescue Plan Act (ARPA),[4] also allow state and local governments to use federal funds for this type of digital equity programming.

The $2.75 billion **DEA program** is primarily focused on helping states, territories, and Tribes improve digital equity and inclusion. It funds three grant programs that aim to ensure all people have the skills, technology, and capacity needed to reap the full benefits of our digital economy.

The three grant programs within the DEA program are:

- **State Digital Equity Planning Grant Program:** $60 million in grants for states, territories, and Tribal governments to *develop* State Digital Equity Plans.
- **State Digital Equity Capacity Grant Program:** $1.44 billion to fund an annual grant program for five years for states, territories, and Tribal governments to *implement* their Digital Equity Plans.
- **Digital Equity Competitive Grant Program:** $1.25 billion in competitive grants to be distributed over five years to states, territories, Tribal governments, as well as public sector and non-profit sector entities (e.g., non-profit service providers (other than schools), community anchor institutions, local educational agencies, and entities carrying out workforce development programs) *to advance digital equity and digital inclusion*.[5]

"COVERED POPULATIONS" UNDER THE IIJA

- **Individuals who live in covered households**
- **Aging individuals (60 years old and above)**
- **Incarcerated individuals, other than individuals who are incarcerated in a Federal correctional facility**
- **Veterans**

- **Individuals with disabilities**
- **Individuals with a language barrier, including individuals who are English learners and have low levels of literacy**
- **Individuals who are members of a racial or ethnic minority group**
- **Individuals primarily residing in a rural area**

On September 29, 2022, NTIA awarded State Digital Equity Planning Grants to each of the 50 states, the District of Columbia, and Puerto Rico, giving the recipients a one-year deadline to develop their State Digital Equity Plans. The plans must identify barriers to digital equity and strategies for overcoming those barriers, including:

1. The identification of barriers to digital equity faced by "Covered Populations" in the state or territory.
2. Measurable objectives for documenting and promoting among each Covered Population located in that state or territory:
    a. Availability and affordability of fixed and wireless broadband technology;
    b. Online accessibility and inclusivity of public resources and services;
    c. Digital literacy;
    d. Awareness and use of tools to protect individuals' data and online security;
    e. Availability and affordability of consumer devices and technical support for those devices.
3. An assessment of how the measurable objectives identified above will impact and interact with the state's or territory's:
    a. Economic and workforce development goals, plans, and outcomes;
    b. Educational outcomes;
    c. Health outcomes;
    d. Civic and social engagement;
    e. Delivery of other essential services.[6]

The State Digital Equity Planning process must also include extensive collaboration with key stakeholders in the state or territory. Digital Equity Planning is a prerequisite for participation in NTIA's State Digital Equity Capacity Grant Program in order

CASE STUDY

North Carolina Governor Roy Cooper has issued a goal of getting 98% of North Carolina households access to internet speeds of 100/20 Mbps by 2025. To achieve this, the State allocated $1 billion in ARPA funds to increase broadband access, speeds, and digital inclusion.

The first office of its kind in the country, North Carolina's Division of Broadband and Digital Equity serves as a statewide resource for broadband access and digital inclusion.

Its mandate includes understanding community needs, expanding broadband access, enabling North Carolinians to access more affordable broadband, and increasing digital literacy.

It also administers the governor's Digital Equity Grant Program delivering $24 million of ARPA funds dedicated for collaborative digital equity projects. Government entities, municipalities, nonprofits, and community organizations were encouraged to collaborate on digital inclusion projects to address access, affordability, and digital literacy.

Source: **North Carolina Governor Roy Cooper webpage**

to ensure that federal funds under the longer-term grant programs are wisely and effectively used in service of DEA program goals. U.S. territories and possessions, Indian Tribes, Alaska Native entities, and Native Hawaii organizations may also seek grants to develop their own plans or contribute to states and territories' plans.

Separate from the DEA program, the $42.5B **IIJA BEAD program** prioritizes deployment of high-speed broadband networks to unserved areas (those lacking access to 25/3 Mbps broadband), underserved areas (those lacking access to 100/20 Mbps broadband), and anchor institutions (those lacking access to symmetrical 1 Gbps broadband). The program also allows states or territories to use remaining BEAD funding, should there be any, for other purposes, like increasing broadband and device adoption. This prioritization ensures that limited public infrastructure funding is targeted to where it is needed most, could have the greatest impact, and does not overbuild existing broadband networks (i.e., where it fills true service gaps). Publicly-funded overbuilds would require significant ongoing investment for infrastructure, operation, and maintenance of networks, and other expenses that would undermine key goals of BEAD and the DEA such as availability, adoption, and digital literacy.

The BEAD program requires each state to develop a Five-Year Action Plan and an Initial Proposal, each of which must include descriptions of a state or territory participant's plans to advance digital equity and inclusion. The BEAD program gives state (or territory), city, and local governments flexibility to award broadband subgrants for a wide range of activities, including:

- Unserved and underserved service area projects
- Data collection, broadband mapping, and planning
- Installing internet and Wi-Fi infrastructure or providing reduced-cost broadband within multi-family residential buildings
- Broadband adoption programs, including programs to provide affordable internet-capable devices

Separate from the IIJA programs, states also have existing ARPA funds that can be deployed for broadband availability and adoption. A good example of such prioritization from an ARPA program is North Carolina's plan to ensure that 98% of North Carolina households access to internet speeds of 100/20 Mbps by 2025.[7] Under this plan, North Carolina is allocating $1B in ARPA Coronavirus State and Local Fiscal Recovery Funds, including $971 million to expand 100/20 Mbps or better broadband availability in unserved areas and $50 million to create awareness and support digital literacy and skills training to participate in the digital economy.[8]

Under the IIJA, Congress also separately appropriated $14.2 billion for the **Affordable Connectivity Program (ACP)**, which can make connectivity effectively free and/or provide deeply discounted devices for participating households. ACP participants receive a $30 monthly subsidy towards internet access service (up to $75 for eligible households in Tribal areas) and up to $100 for a "connected device" purchase, provided that the "charge to such eligible household is more than $10 but less than $50 for such connected device."[9]

While the ACP story is not yet complete, it will be critical to study the extent to which ACP not only made home broadband more affordable for low-income households, but whether it also materially increased the number of low-income broadband subscribers as compared to pre-pandemic levels.

FEDERAL ENTITY	PROGRAM	FUNDING AVAILABLE
FCC	Affordable Connectivity Program	$14.2 Billion
	ACP Outreach Programs (National Competitive Outreach Program, Tribal Competitive Outreach Program)	$80 Million
	ACP Pilot Programs (Your Home, Your Internet and Navigator Pilot Program)	$10 Million
	Emergency Connectivity Fund	$7.17 Billion
NTIA	Broadband Equity, Access, and Deployment Program	$42.45 Billion
	Digital Equity Grant Program	$2.75 Billion
	State and Local Implementation Grant Program	$121.5 Million
	Tribal Broadband Connectivity Program	$2 Billion
U.S. TREASURY	ARPA Coronavirus State and Local Fiscal Recovery Funds	$350 Billion
	ARPA Capital Projects Fund	$10 Billion
	Local Assistance and Tribal Consistency Fund	$2 Billion

Table 2 — *Federal Funding Sources*

A connected device is defined by statute as a laptop, desktop computer, or a tablet. Many internet service providers (ISPs) offer a low-cost $30 per month 100 Mbps broadband option, as well as low-cost laptops.[10] These ISPs have effectively eliminated affordability concerns for qualifying and participating households.

The ACP follows the FCC's successful Emergency Broadband Benefit (EBB) program, which provided discounted broadband services to over 9 million U.S. households in a span of only eight months to address the urgent need during the pandemic.

The ACP defines its pool of eligible households as those with income up to 200% of the poverty line (households can also qualify under specified federal programs not tied to income). More than 38% of U.S. households, or 48.6 million, are eligible for the ACP.[11]

Over 15.8 million U.S. households—roughly one-third of those eligible—were enrolled in the ACP as of January 23, 2023.[12] The ACP's other positive impacts are just beginning to be realized. For example, one documented trend since the implementation of the ACP is the shift by low-income households from slower mobile data plans to faster fixed home broadband connections. Approximately two-thirds of EBB subscriptions were initially on mobile data plans, but that percentage has been coming down since launch of the ACP.[13]

Various efforts are underway to promote participation in the ACP. For example, the FCC created two pilot programs—the *Your Home, Your Internet Pilot Program* and the *ACP Navigator Pilot Program*—to increase awareness of and facilitate enrollment in the ACP.[14] Likewise, as part of the BEAD Program, NTIA encourages states and territories to develop strategies to increase ACP enrollment and to require subgrantees to participate in the ACP for eligible users.[15] The ACP is intended to be long-term, but it is likely that ACP funding will run out of funds in the first half of 2024 unless Congress extends it or state and local governments provide supplementary funding.[16]

DEFINING "DIGITAL EQUITY"

According to NTIA, "digital equity" means all people have the information technology capacity they need to participate fully in today's society.[17]

To set the right goals and maximize impact, it is important for state, territorial, Tribal, and local broadband program administrators to recognize the difference between "equality" and "equity."[18] Equality and equity are closely related terms but have important distinctions in their definitions and in practice.

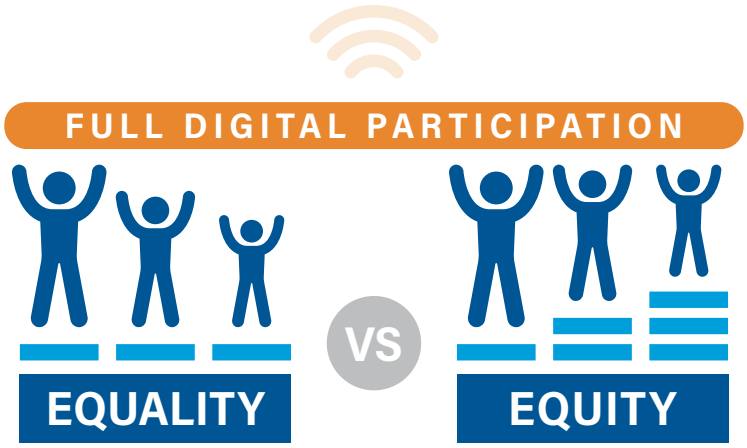


Figure 1 — *Equality vs. Equity*

"Equality," as defined by the Merriam–Webster Dictionary, is the state of being equal,[19] such as in rights and opportunities. If a community has equality, everyone has access to the same rights and opportunities to *attempt* to attain the same outcomes.

"Equity" is more nuanced and incorporates broader notions of justice and fairness. The distinction here is that equity recognizes that different people and communities have different circumstances and needs, and to be *equitable*, different resources and approaches may be necessary to help different people attain the same outcomes.[20] Said simply, some groups and individuals need an extra hand to achieve a shared goal. As such, digital equity requires empowering everyone with the skills, resources, and opportunities they need to successfully participate in an increasingly digital world.

PRICE IS NOT THE KEY BARRIER TO ADOPTION FOR MANY HOUSEHOLDS

In fact, studies have shown that even when broadband services are effectively made free for all qualifying low-income households, such as through the ACP, certain groups continue to experience low rates of adoption. This is explained by a range of factors including lack of access to devices, low digital literacy and digital skill levels, perceived lack of relevance, safety and security concerns, and lack of trust in private and public digital inclusion programs.[22]

To achieve digital equity, certain communities may require more assistance and dedicated resources to overcome barriers, such as access, affordability, and skilling.[21] While all people within a community or neighborhood might have access to high-speed broadband, some segments of the community might have lower rates of adoption. Certain factors such as income, education level, race, and age continue to correlate with broadband and device adoption.

Efforts to close the digital divide must account for these underlying social and economic inequities. Equal access will not necessarily result in equitable access.

WHY DIGITAL EQUITY MATTERS

The social and economic benefits of broadband and online services are now widely understood and accepted. Connectivity has become integral to everyday activities as well as our most widely shared social ambitions, such as participating in school, accessing good health care, pursuing a career, connecting with loved ones, or having ready access to government information and services. Many state, territorial, Tribal, municipal, and local governments have already implemented programs intended to increase digital equity among Covered Populations.

In the DEA, Congress recognized that "a broadband connection and digital literacy are increasingly critical to how individuals participate in the society, economy, and civic institutions of the United States and access health care and essential services, obtain education, and build careers." Perhaps more importantly, Congress also recognized that "digital exclusion carries a high societal and economic cost, materially harms the opportunity of an individual with respect to the economic success, educational achievement, positive health outcomes, social inclusion, and civic engagement of that individual, and exacerbates existing wealth and income gaps, especially those experienced by covered populations."[23]

Congress's recognition of the central role that connectivity plays in modern life and its commitment of substantial funds to advance equitable access to this vital tool presents a unique window of opportunity for state, territorial, Tribal, and local governments to set priorities and drive resources to expand broadband access and digital inclusion—particularly for those who have been excluded or only marginally included (e.g., low-income households and individuals).

DIGITAL EQUITY IS BOTH AN ADOPTION AND AVAILABILITY ISSUE

Approximately 5% of U.S. residents lack access to 25/3 Mbps broadband (and are considered "unserved") and approximately 10% of U.S. residents lack access to 100/20 Mbps broadband (and are considered "underserved"), while approximately 23% of U.S. residents report that they do not subscribe to any form of broadband at home. **This shows that the broadband adoption gap is far larger than the broadband availability gap.**

Available data also shows that **income** correlates strongly with whether people have access to broadband, sign up for service, and have a connected device at home.

- Availability and adoption rates are generally lower in **rural** areas than in urban areas.
- Average incomes for **Black/African American, Hispanic/Latino, and Tribal/Native American populations** are lower than for White and Asian populations.
- In addition, we see lower levels of broadband adoption among other demographics, such as **individuals with a high school education or less, individuals with disabilities, and aging individuals.**

By focusing on local data, program administrators can tailor programmatic and funding interventions to where they will have the most impact.

Broadband availability and adoption gaps and their severity also vary significantly by location; therefore, **a localized focus is important to tailor interventions to where they will have the most impact.**

Guided by this data, **policy makers should give considerable weight to programs that focus on promoting availability and adoption.** Policy makers should not and need not wait for all households to have access to broadband before they implement programs to increase broadband adoption—those who have access now should be encouraged to adopt now. Many state, territorial, Tribal, municipal, and local governments already are overseeing complementary programs promoting both greater broadband availability and adoption. Moreover, the IIJA, ARPA, and other federal broadband statutes include provisions recognizing that broadband availability and adoption programs will be implemented side-by-side.

Digital Equity Plans Should Address Low Rates of Broadband Availability

While the overwhelming majority of Americans have access to fixed residential broadband, data show that among the small pockets of the country without access, lower-income communities are less likely to be able to purchase at least 25/3 Mbps home broadband even if they wanted to (Figure 2). The data demonstrate that cable-based networks are ubiquitous throughout the markets they serve, including in communities with high rates of poverty.

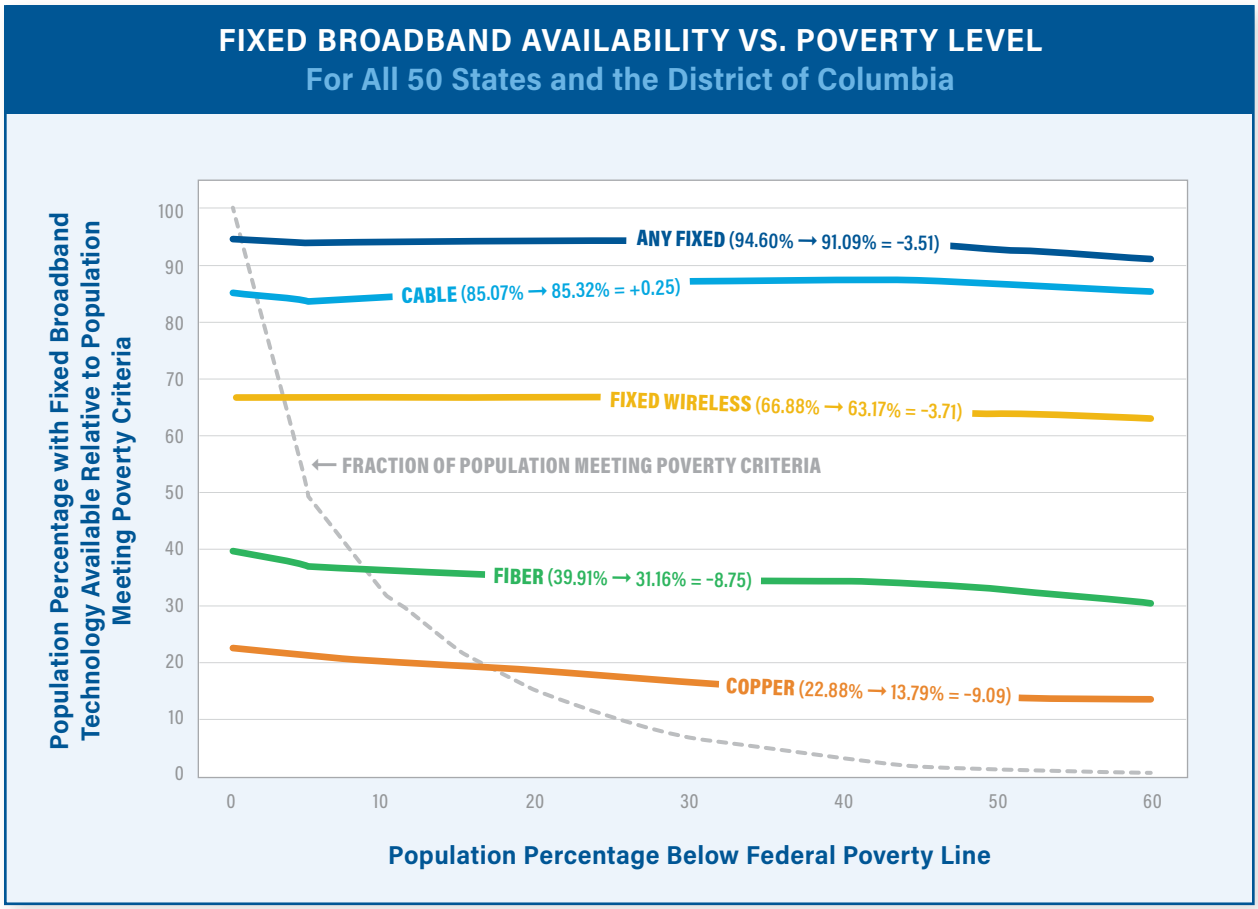


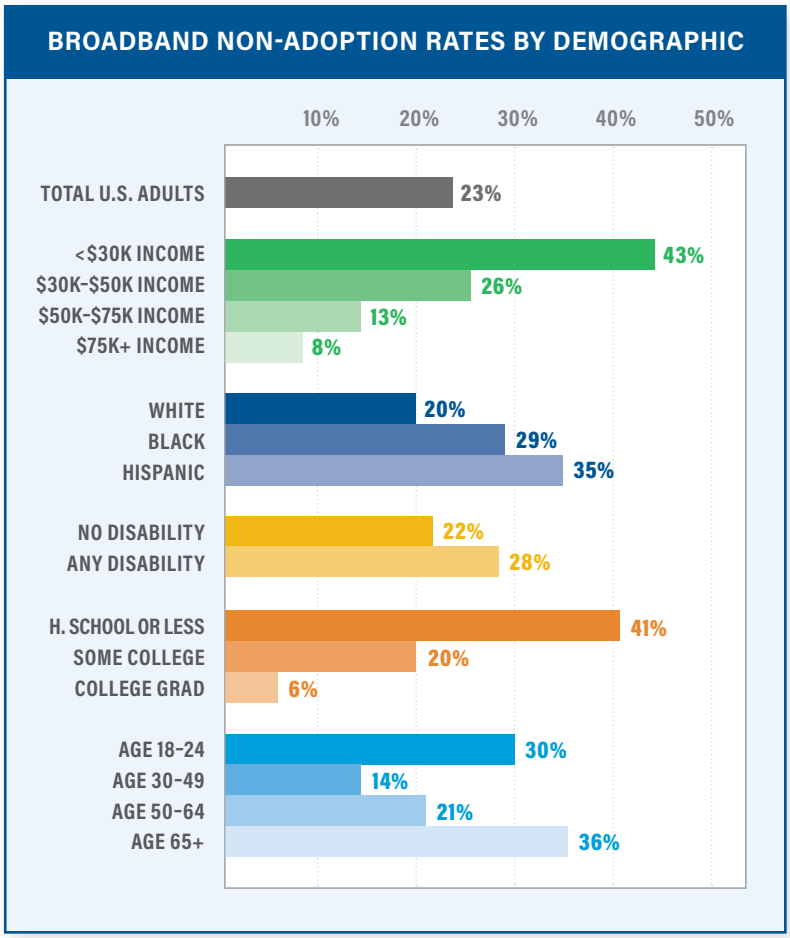
Figure 2 — *Fixed Broadband Availability (FCC BDC June 2021) vs. Poverty Level (ACS 2021 5-Year Average) for Different Broadband Technologies (Poverty Level and Availability Reported at Census Block Group Level)*

Digital Equity Programs Must Address Persistently Low Rates of Broadband Adoption

Broadband non-adoption appears strongly correlated with certain demographic variables: income, age, disability, education level, literacy, rurality, and some ethnic distinctions.

According to Pew Research Center (Figure 3), about four in 10 adults with incomes below $30,000 do not have home broadband services (43%) or a desktop or laptop computer (41%). A majority of Americans with lower incomes do not own tablets. By comparison, each of these technologies is nearly ubiquitous among adults in households earning $100,000 or more a year.[24] In addition, Black/African American and Hispanic/Latino adults in the United States remain less likely than White adults to say they own a traditional computer or have high-speed internet at home. However there are no significant differences by race or ethnicity when it comes to other devices, such as smartphones and tablets.[25]

Household income appears to be the most significant determinant of whether a U.S. household adopts fixed broadband (Figure 4). Broadband adoption declines with poverty rates in a linear fashion, especially in urban counties. Note, the size of the data points (or bubbles) is proportional to the population in the county, and a linear trendline for fixed household broadband subscriptions versus poverty level was created for both urban and rural counties.



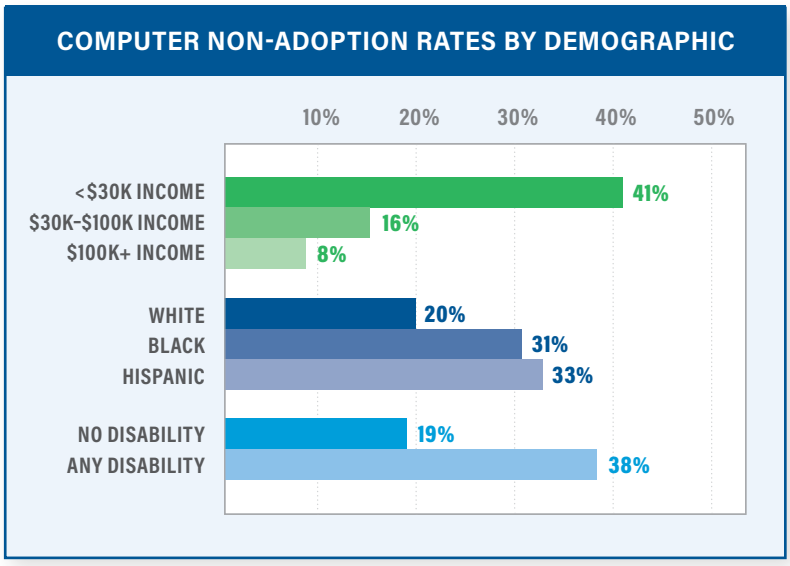


Figure 3 — *Non-Adoption Rates by Demographic (Source: Pew Research Center, Quarter 1, 2021)*

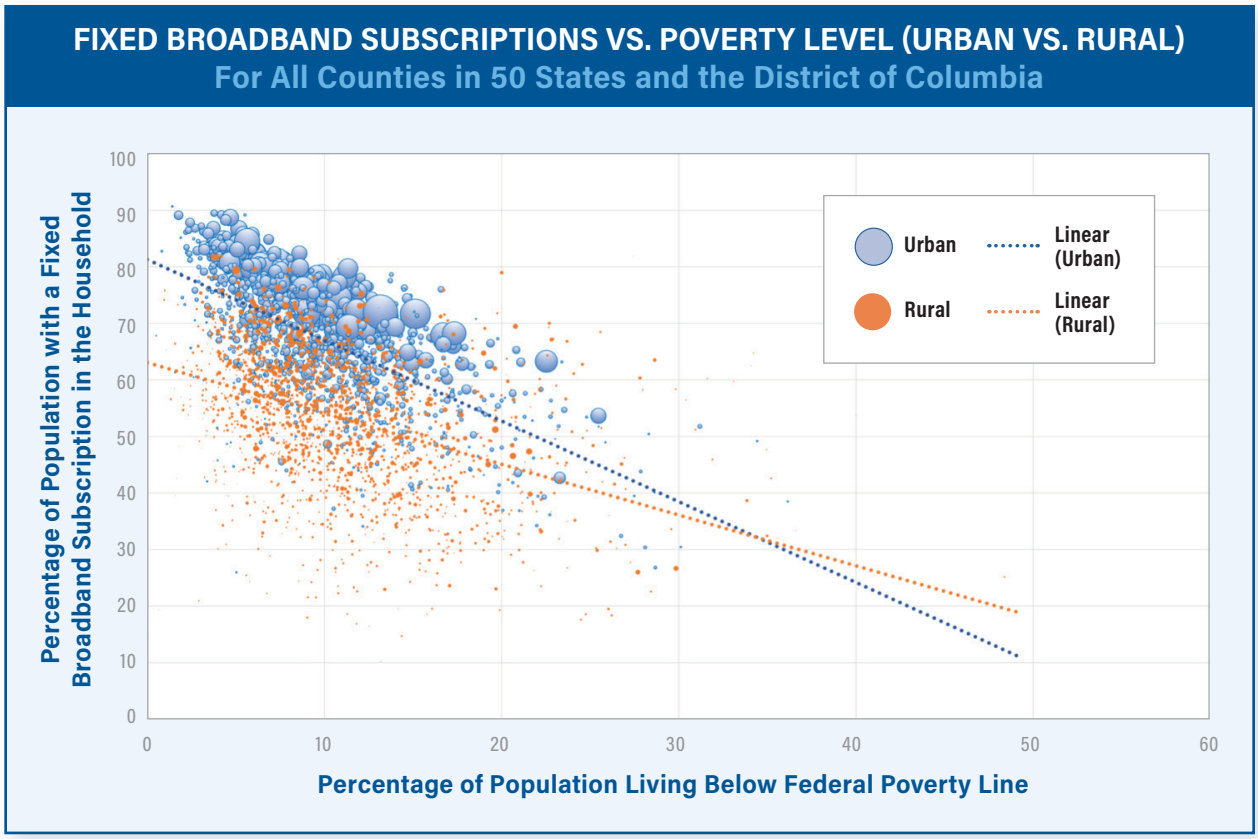


Figure 4 — *Fixed Household Broadband Subscriptions vs. Poverty Level Grouped Into Urban and Rural Counties (ACS 2021 5-Year Average)*

The percentage of the population living below the federal poverty line and the percentage of the population subscribing to fixed broadband was sourced from the 2021 American Community Survey (5-Year Average). At the time of this data collection, many ISPs already offered low-cost plans, but the EBB and ACP subsidy programs did not yet exist. Going forward, it will be critical to see whether the ACP reduces the correlation between household income and broadband subscriptions. Continued low-cost plan offerings from most or all ISPs, the ongoing level of ACP participation, and whether Congress makes the ACP permanent could all impact these measurements.

Differences in subscription rates among counties with similar rates of poverty might be attributable to differences in broadband availability, as well as localized variability in adoption rates within communities. Wider disparities among rural counties might be a reflection of widely varying subsidization and business models.

This correlation between income and adoption appears even stronger for computer (desktop or laptop) availability in a household (Figure 5).

We see a similar impact of poverty rates on broadband adoption across plurality White, Black/African American, Hispanic/Latino, and Tribal/Native American communities (Figure 6). Higher rates of poverty translate to lower levels of home broadband subscription.

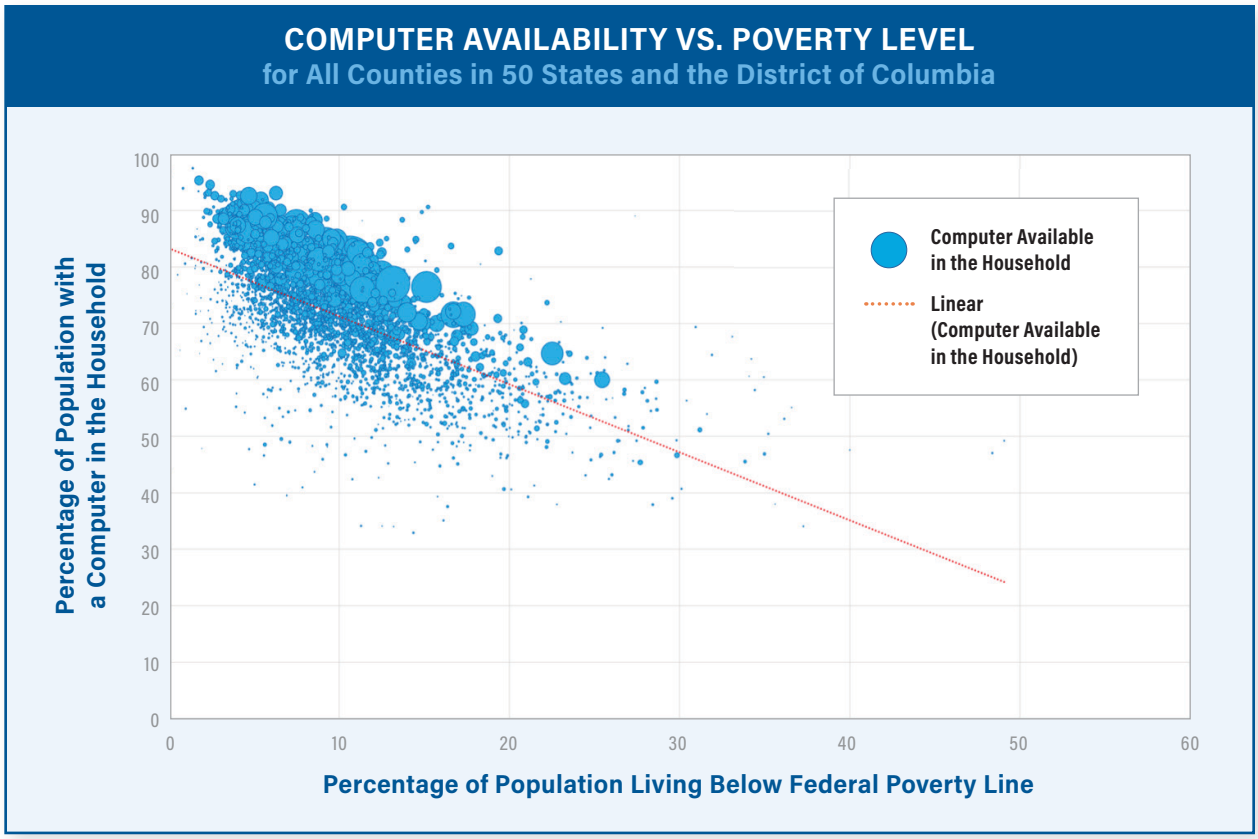


Figure 5 — *Computer Availability in a Household vs. Poverty Level in the United States (ACS 2021 5-Year Average)*

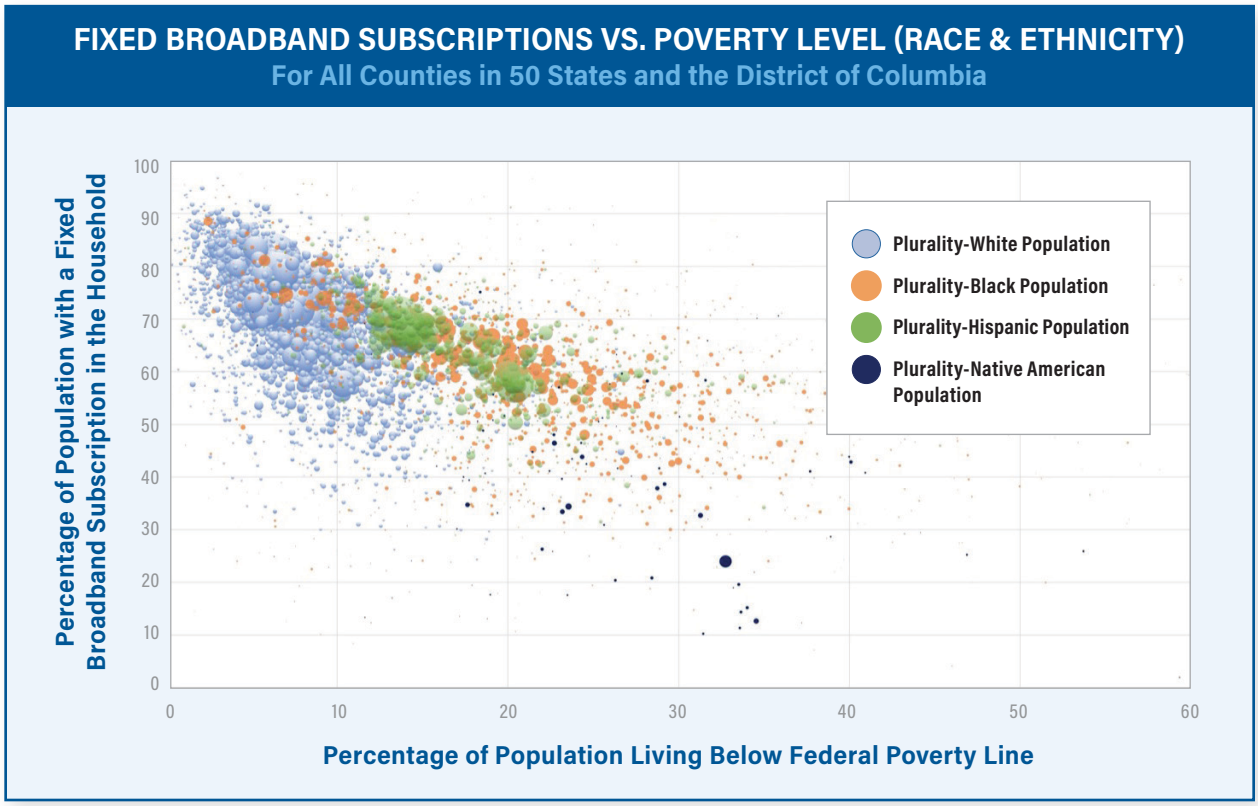


Figure 6 — *Fixed Household Broadband Subscriptions vs. Poverty Level by Race & Ethnicity (ACS 2021 5-Year Average) (Selected Census Block Groups Meeting Race and Ethnicity Criteria Aggregated to County Level)*

Good Broadband Data Can Help Program Administrators Make Sound Localized Policy Interventions

While it is clear that poverty impacts broadband availability and adoption at a national level, the data show that other factors can impact rates of broadband availability and adoption at a local level. For instance, while a community's broadband availability and adoption rates might appear to be good overall, there often will be particular neighborhoods or even individual apartment buildings with lower rates of availability or adoption.

The chart below shows Chicago, Illinois, where the broadband subscription rate is 71% overall, but one can see that subscription rates are much lower in some neighborhoods (census block groups), particularly those with higher rates of poverty (54% subscription levels in census block groups where 25% of households are living below the federal poverty line). In this example, these are also neighborhoods (census block groups) with higher ethnic minority populations.

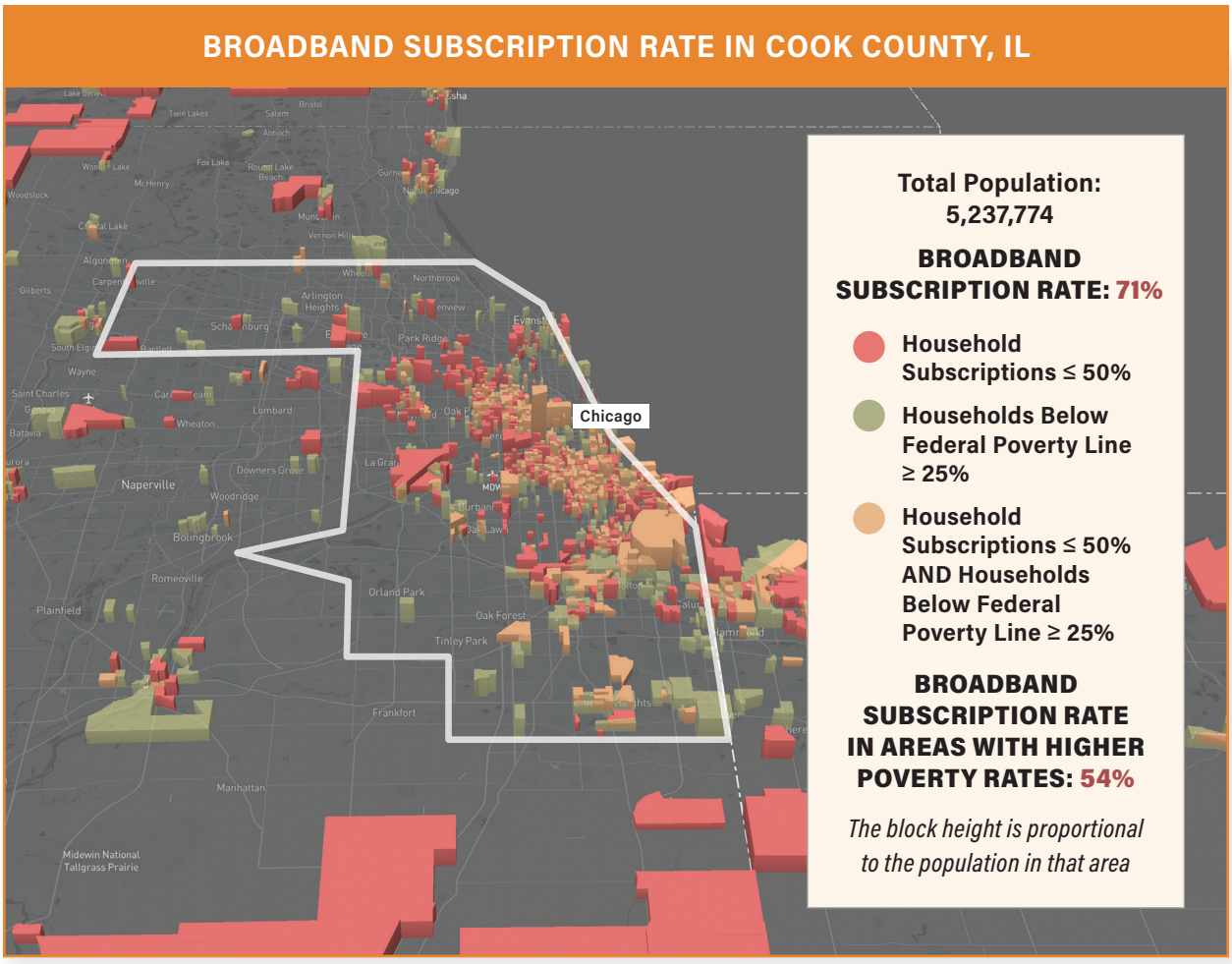
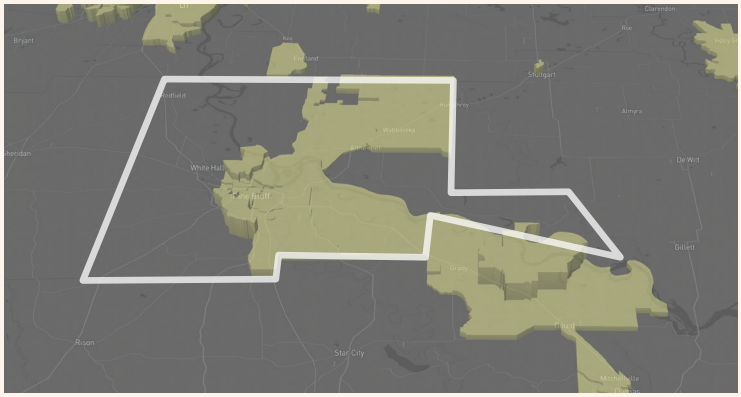


Figure 7 — *Lower Broadband Adoption Rates in Lower-Income Neighborhoods (Census Block Groups) in Chicago, IL (Vernonburg Group Digital Equity Map)*

In another example, we see some disparities in broadband availability and adoption among communities at census block group level with similar demographics and rates of poverty. The chart below (Figure 8) shows two majority Black/African American communities—Jefferson County, Arkansas and Saint John the Baptist County, Louisiana—with similar rates of poverty, but with different rates of broadband availability and adoption.

COMPARISON OF BROADBAND ADOPTION



JEFFERSON COUNTY, ARIZONA

Total Population: 67,260

POVERTY LEVEL: 15.09%

African American Population Level >50%

BROADBAND SUBSCRIPTION RATE: 41%

SAINT JOHN THE BAPTIST COUNTY, LOUISIANA

Total Population: 42,477

POVERTY LEVEL: 13.32%

African American Population Level >50%

BROADBAND SUBSCRIPTION RATE: 69%

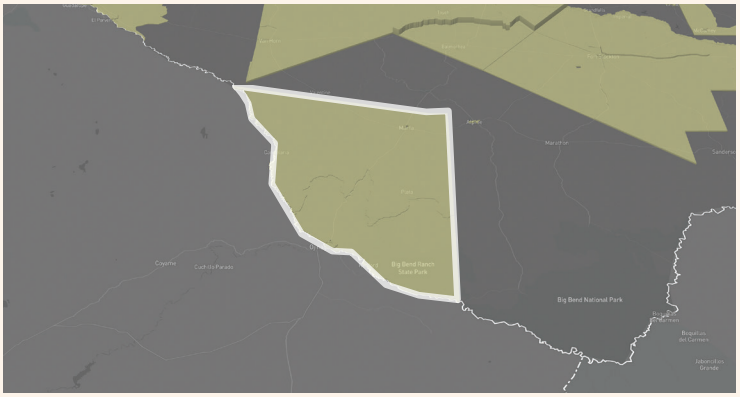
Figure 8 — *Comparison of Broadband Adoption: Jefferson County, AR vs. Saint John the Baptist County, LA (Based on census block groups with majority African-American populations.) (Vernonburg Group Digital Equity Map)*

Similarly, the next chart (Figure 9) shows two majority Hispanic/Latino communities at census block group level—Presidio County, Texas and Dimmit County, Texas—with similar rates of poverty, but with different rates of broadband availability and adoption.

These comparisons show that the most effective programmatic interventions can and often should be localized based on local data. Also, these comparisons suggest the need for officials to better understand why communities with seemingly similar demographics are having different outcomes. Do these communities have unique partnerships and programs in place that have boosted broadband availability and adoption and can

those partnerships and programs be emulated elsewhere? Alternatively, are there unique attributes to these communities that make them pre-disposed to higher or lower broadband and technology adoption? Armed with such information, state, territorial, Tribal, municipal, and local governments will be better positioned to develop programs targeted to assist their underrepresented Covered Populations.

COMPARISON OF BROADBAND ADOPTION



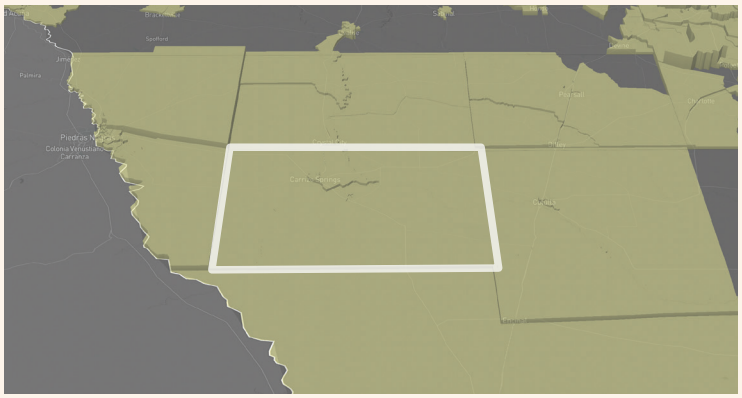
PRESIDIO COUNTY, TX

Total Population: 6,131

POVERTY LEVEL: 36.15%

Hispanic Population Level >50%

BROADBAND SUBSCRIPTION RATE: 33%



DIMMIT COUNTY, TX

Total Population: 8,615

POVERTY LEVEL: 34.42%

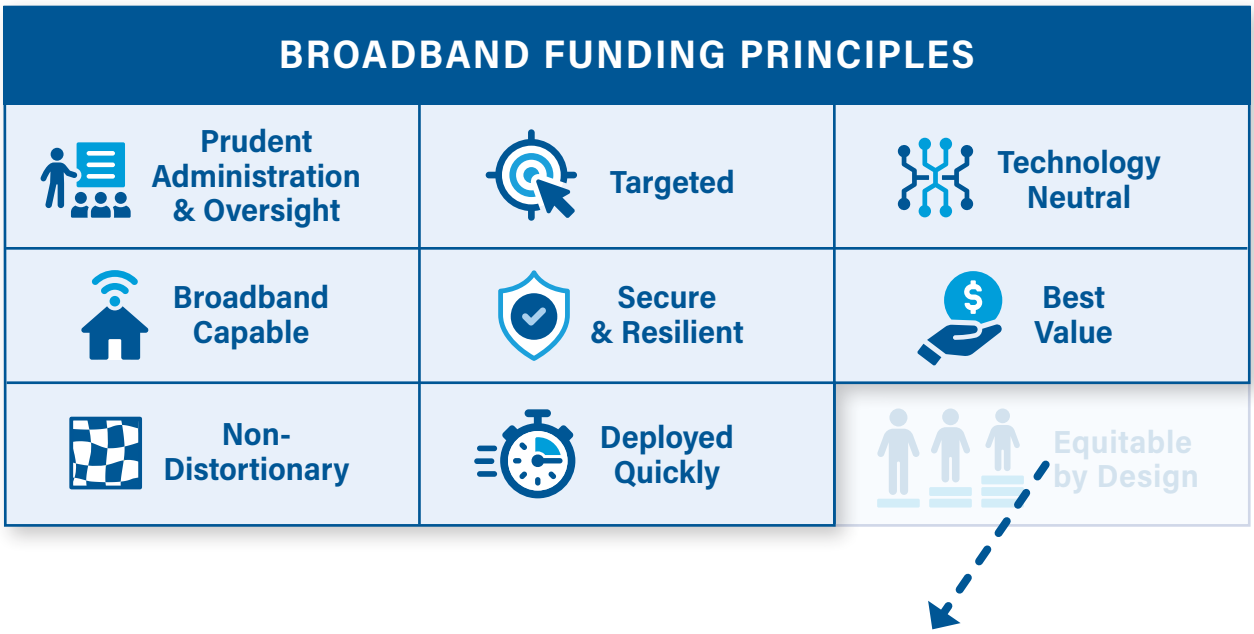
Hispanic Population Level >50%

BROADBAND SUBSCRIPTION RATE: 52%

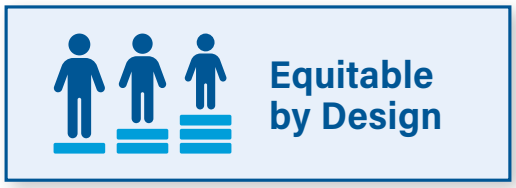
Figure 9 — *Comparison of Broadband Adoption: Presidio County, TX vs. Dimmit County, TX (Based on census block groups with majority Hispanic populations.) (Vernonburg Group Digital Equity Map)*

DIGITAL EQUITY FUNDING PRINCIPLES FOR PROGRAM ADMINISTRATION

This handbook builds upon principles and best practices described in ***A Handbook for the Effective Administration of State and Local Broadband Programs***. Based on the best available broadband deployment and adoption data, we endorsed the goals of making 100/20 Mbps connectivity available to every U.S. household, making it affordable for all consumers, and implementing comprehensive broadband adoption programs. By leveraging all available technologies, these goals are achievable with existing federal, state, and local funding sources. To that end, state (and territory), city, and local governments should adhere to the following broadband funding principles when developing broadband availability and adoption programs:



ACTIONABLE BEST PRACTICES



Focusing on the principle of **equitable by design**, state, territorial, Tribal, city, and local governments should seek to address underlying social and economic inequities and focus, as appropriate, on low-income groups, rural areas, communities with low rates of literacy and digital skills, aging individuals, persons with disabilities, and minority groups with low adoption rates.

Below, we summarize seven steps that state, territorial, Tribal, city, and local governments can take to seize this window of opportunity to drive digital equity for their constituents.

While these steps are presented sequentially, some can occur in parallel and many serve common purposes. For example, steps 2, 6, and 7 contribute to the IIJA requirement for coordination and outreach with stakeholders from Covered Populations to ensure digital equity policies and interventions are effectively designed and implemented to meet their needs.[26]

STEP 1: Explicitly set digital equity as a primary objective of the Broadband Office

Many states, territories, Tribes, and local governments have taken the first step we recommended in the previous broadband program administration handbook: to establish a Broadband Office (or at least a broadband function) accountable for administering broadband access and adoption funding and programs. As these offices define their vision, objectives, plans, and targets under IIJA guidelines,[27] digital equity should be stated explicitly as a core principle to guide their efforts. This action formally establishes digital equity as a tenet for future decision-making. Broadband offices should:

- Ensure there is a resourced process for evaluating and driving accountability towards digital equity.
- Set a vision that all residents should be able to access and afford high-speed broadband services, computers, and digital skilling support in order to fully participate in today's connected society.
- Set an objective to prioritize unserved and underserved, income-insecure communities first for broadband access and adoption programs.
- Set measurable three-year and five-year targets for digital equity, that are grounded in data to ensure they are realistic, building on examples provided in our previous broadband program administration handbook, e.g.:

DECEMBER 31, 2025 TARGETS	DECEMBER 31, 2028 TARGETS
• **60%** of eligible households signed up for the ACP • **70%** of households participating in ACP subscribing to fixed broadband with speeds of at least 100/20 Mbps • **70%** of ACP eligible households owning a laptop, tablet, or personal computer	• **70%** of eligible households signed up for the ACP • **80%** of households participating in ACP subscribing to fixed broadband with speeds of at least 100/20 Mbps • **80%** of ACP eligible households owning a laptop, tablet, or personal computer

Approaches can vary with local needs and priorities. For example, the Wisconsin Public Service Commission Broadband Office set an objective of 75% of households with incomes below 200% of the federal poverty level to have access to a fixed, home internet service costing consumers less than $25 per month by 2025,[28] while North Carolina's year-end 2025 goal is for 80% of households overall, as well as 80% of each Native American, Black/African American, Hispanic/Latino, and White households, to subscribe to broadband internet connections.[29]

Additional guidance and templates are available from NTIA.[30] States and territories can access funding for preparation of BEAD Five-Year Action Plans and DEA Digital Equity Plans, and this funding can be used to hire expert consultants to help prepare these plans consistent with the Actionable Best Practices in this handbook. While states and territories have up to a year to prepare some of these plans, knowledgeable experts can help accelerate completion, which is helpful given the urgent need to close broadband availability and adoption gaps.

STEP 2: Maximize community outreach and inter-governmental coordination

States do not need to start from scratch in developing digital equity plans. Many community stakeholders are already connecting with lower-adopting populations, have established trust, and have insight that should be reflected in digital equity planning. Program administrators should leverage this experience by working with community leaders, community groups, and community members to better understand gaps in broadband availability and adoption, and to understand their greatest pain points and priorities for addressing the gaps. Broadband offices should set up working groups that engage a broad range of qualified community stakeholders that have unique experiences and perspectives they can contribute on broadband availability and adoption. These may include:

- residents
- state and territorial representatives/senators
- county commissioners
- county chief information officers
- K-12 school system leadership
- libraries
- post-secondary education leadership
- hospital and healthcare administrators
- public safety leaders
- workforce development agencies
- leaders of large and small businesses
- church/faith leaders
- community groups
- broadband providers

Other key community stakeholders may include representatives of low-income households, older persons, persons with disabilities, ethnic minorities, immigrant groups, veterans, and homeless residents. Working with grassroots community-based organizations, broadband offices should conduct focus groups and seek additional input from community stakeholders.

As noted above, persistent economic inequity underlies broadband availability and adoption

CASE STUDY

In 2021, the Public Service Commission of Wisconsin, tasked with administering ARPA and other funding for broadband access and digital equity, established the Wisconsin Digital Equity and Inclusion Stakeholder Group to convene stakeholders from across sectors (e.g., companies, nonprofits, community organizations, etc.) to:

- **Grow and strengthen the digital inclusion ecosystem in Wisconsin**
- **Develop and inform Wisconsin's Digital Equity and Inclusion Plan**

Source: **Public Service Commission of Wisconsin website**

gaps. The communities that stand to benefit most from digital inclusion resources are also likely seeking other social services such as affordable housing, health care, food, employment, and education assistance. Therefore, broadband offices should also seek to align, coordinate, and promote public services that can be enriched with access to broadband and devices (e.g., a broadband office could coordinate with social service agencies to ensure that eligible households sign up for the ACP and other broadband adoption programs).

As states, territories, and Tribes develop and implement digital equity plans, they should work in coordination and collaboration with other government stakeholders. This will enable a holistic and localized approach to serving and transforming communities with the greatest need, maximizing impact and efficiency, and minimizing opportunities for fraud or wasted resources.

STEP 3: Use data to identify and prioritize the communities in greatest need

State, city, and local broadband program administrators should let good data guide policy interventions. As states, territories, and Tribes obtain their Digital Equity Planning grants from NTIA, one of the first steps consistent with IIJA will be to conduct a digital equity needs assessment. This should include a comprehensive assessment of the baseline from which the state or territory is working and identification of the barriers to digital equity faced by each of the Covered Populations.

Leveraging data combined with firsthand knowledge of local communities, local governments should identify those in greatest need, considering important factors of income levels, race, disability, and age. State, territorial, Tribal, and local government entities are in a unique and powerful position to increase digital equity and maximize the impact of their policy interventions.

Good tools are available to help decision-makers precisely identify the communities facing the most significant digital divides, including divides related to availability, adoption, and other indicators. These free resources include:

CASE STUDY

In 2021, the State of Maryland created the Maryland Emergency Broadband Benefit, its own $15/month subsidy to enhance the $50/month federal EBB subsidy, so eligible households received a total of $65/month for broadband service. Eligibility screening was streamlined with EBB, not requiring additional effort by Maryland or the ISP to screen for eligibility.

Source: **Maryland Emergency Broadband Benefit announcement**

- Vernonburg Group **Digital Equity Map**: This tool helps users visualize publicly available U.S. broadband data. Simple data visualization sliders can be used to better understand levels of broadband availability and adoption at a local or national level, and across different demographic groupings. This tool helps displays correlations in data to tailor programmatic interventions.[31]

- The Federal Communications Commission's (FCC's) latest (and significantly improved) **National Broadband Map**: Based on data reported by ISPs, this map shows broadband availability down to individual building level and for each building, lists providers, associated technology, and maximum downlink and uplink speeds.[32] This tool also allows consumers to challenge carrier reported availability data in a continuing effort to improve the accuracy, reliability, and timeliness of the map.

STEP 4: Ensure that broadband is available to all households

States' and territories' five-year IIJA BEAD broadband action plans must include provisions ensuring that 100/20 Mbps or better broadband is available to every household. Digital Equity plans should align with these BEAD program five-year action plans, but with a focus on ensuring that groups with lower rates of broadband availability gain access.

As discussed above, lower-income communities across the U.S. generally have lower rates of broadband availability than higher-income communities, but these impacts can differ by location. Digital Equity Program administrators should be guided by data in their communities, and to the extent that broadband availability gaps disproportionately impact low-income households, they might consider creating incentives for those receiving funding to deploy broadband infrastructure to build out broadband-capable infrastructure in lower-income communities prior to building out in higher-income communities. For example, extra funding and/or points could be awarded to broadband network deployment grant applications committing to serve persistent poverty counties, communities with greater economic need, and socially vulnerable communities, as is done today for the United States Department of Agriculture's (USDA's) ReConnect program.[33] Likewise, local data might also strengthen the case for prioritizing deployments in minority and other traditionally disenfranchised communities.

STEP 5: Promote access to affordable broadband services and devices

Under the IIJA, BEAD subgrantees (e.g., ISPs with demonstrated managerial, technical, financial, and operational capabilities) must offer at least one low-cost broadband option to eligible subscribers. The low-cost broadband option is defined by the eligible entity (state or territory) and included in the Final Proposal submitted to NTIA.[34] Low-cost broadband options should be affordable for low-income households and economically viable for subgrantee ISPs. The offering must be developed without requiring the regulation of broadband rates, which the IIJA does not permit the NTIA to do.[35]

For some households, the barriers to applying for eligibility for the ISP's low-cost service offering may be too burdensome (e.g., they may include hard credit checks, income levels, participation in other government assistance programs). To overcome these barriers, and maximize awareness of

and subscription to low-cost broadband options, ISPs—in partnership with state, territorial, and local governments—could establish streamlined eligibility criteria and application processes:

- Using broadband mapping to help identify communities where most households are below the poverty-based eligibility threshold, an ISP could offer low-cost service to anyone with an address in that area without requiring proof of income.
- All public and affordable housing residences should be considered qualified, without additional proof of income.[36]

It is important to note that additional proof of eligibility may be required to participate in the ACP.

State, territorial, Tribal, and local government officials should also encourage their U.S. congressional representatives to extend the ACP. The ACP has proven itself a valued resource, helping connect almost 16 million lower-income U.S. households as of January 9, 2023; however, based on current trends in demand, ACP funding will run out in the first half of 2024.[37] If Congress does not act to extend the ACP, state, territorial, Tribal, and local governments should step in to ensure broadband is affordable for lower-income households by:

- Establishing a state, territorial, Tribal, or local fund to either top-up (i.e., to increase the subsidy amount or expand eligibility) or extend the ACP subsidy when federal funding runs out.
- Referring qualifying as well as non-qualifying households to existing low-cost service offerings.

ACTION ITEM

ACP funding is set to run out by mid-2024. Encourage Congress to extend this successful program.

In addition, state, territorial, Tribal, and local governments should maintain a technology-neutral approach to evaluating broadband projects to ensure affordability and sustainability of network deployment and expansion.

It is also essential to focus on the fact that many households do not adopt broadband because they cannot afford a home computer. The ACP's $100 device discount is a helpful start but may only cover a fraction of the cost of many new or refurbished computers.[38] If a user has a disability and requires a device with certain specifications (e.g., screen size or assistive technology features), the cost will be higher.

To promote affordability and adoption of connected devices capable of supporting education, work, and other productive activities, program administrators can:

- Fund a top-up program offering additional subsidies for eligible devices (which include laptops and desktops, but not smartphones).[39]
- Establish and promote a list of reputable device refurbishers, such as those already approved and participating in ACP.[40]

CASE STUDY

The City of Tacoma, Washington has a **Digital Equity Program** that combines public Wi-Fi internet access, broadband service and device discounts, and a suite of free digital literacy training resources offered through a network of local non-profits. To better inform and target its Digital Equity Program, the City of Tacoma conducted a community technology use survey and held a series of digital equity focus groups with communities with lower rates of broadband and technology adoption, such as lower-income, immigrant, refugee, and homeless communities.

The City of Tacoma's digital literacy program provides residents "access to programs and information on how to use computers and the internet to achieve their goals, whether in workforce readiness, communication, access to information and services, safety and security online, or otherwise." This program also leverages several community-based organizations:

- **The Boys & Girls Clubs of South Puget Sound**, in partnership with Comcast, are hosting WiFi-enabled Lift Zones, giving students a safe place to connect for homework and digital skills courses.
- **The Thrive Tacoma Business Fund** is training Digital Navigators—trusted community members trained to offer unconnected neighbors one-on-one support to overcome the hurdles to connectivity.
- **Goodwill** of the Olympic and Rainier Region's Power Up initiative offers job training programs to grow Tacoma's world-class digital workforce.
- **TeamWrk**, e-gaming innovator Marcel Cunningham's foundation, is teaching teens the basics of digital content creation and other valuable 21st Century skills.

In addition, the Washington State Broadband Office has invested more than $7 million to scale digital navigator programs statewide.

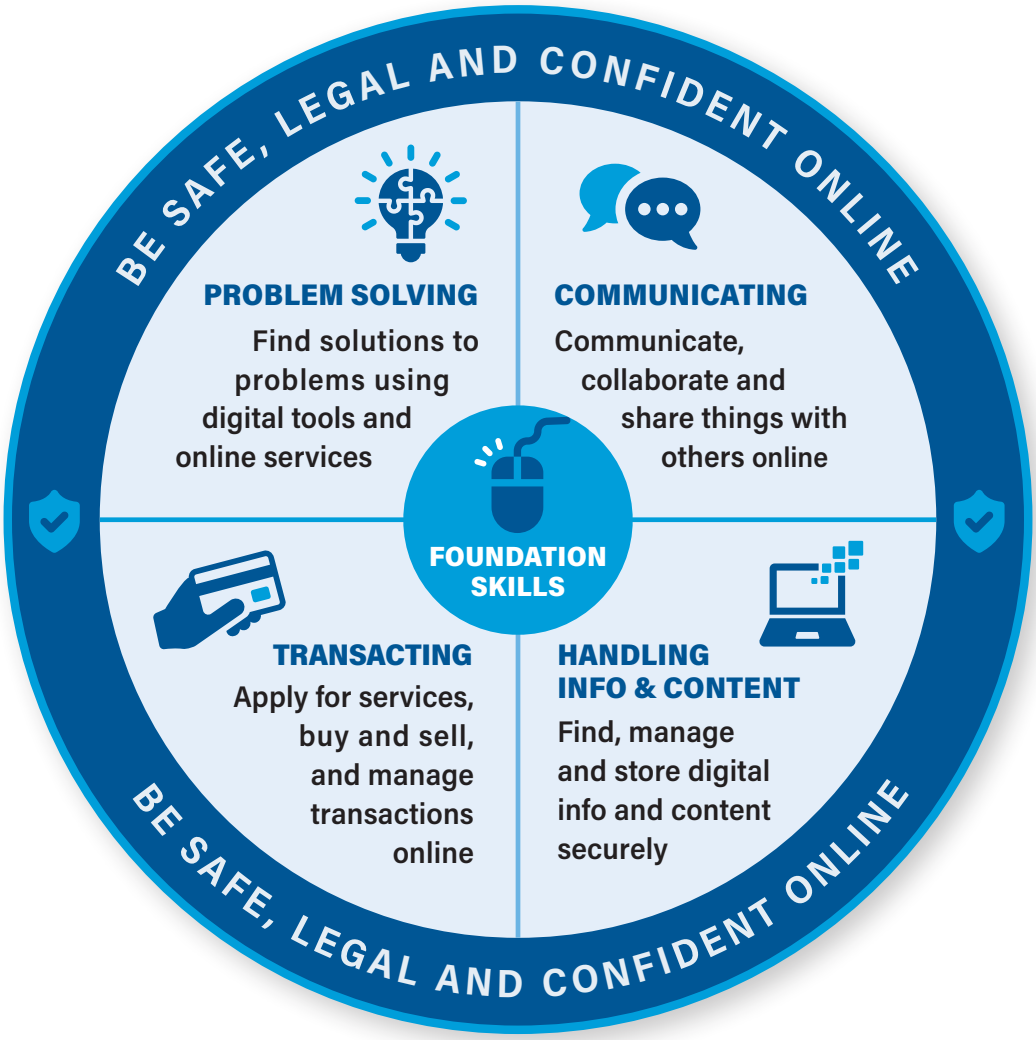


Figure 10 — *Essential Digital Skills Framework* *Source:* UK Government

STEP 6: Promote and establish digital skilling programs

Another potential barrier to broadband adoption in many households is the potential users' lack of digital skills.[41] As part of their digital equity plans, state, territorial, Tribal, and local governments should establish a digital skilling program that promotes essential digital skills of (1) problem-solving, (2) communicating, (3) transacting, (4) handling information and content, and (5) being safe, legal, and confident online—with a focus on training and upskilling people for employment opportunities[42] (Figure 10).

Anchor institutions such as libraries and many local and national nonprofits are developing and offering digital skilling resources that can be leveraged to ensure households know where to go to acquire the skills they need to take advantage of internet services and engage productively in today's society and economy.

STEP 7: Leverage community-led initiatives and public-private partnerships, such as digital navigator programs, to encourage awareness and adoption

States, territories, Tribes, cities, and local governments should leverage community-based organizations and public-private partnerships to expand availability and adoption of broadband and the use of online services. Such multi-stakeholder partnerships can further accelerate broadband availability and adoption programs. As discussed above, non-adopters choose not to connect for a range of reasons, including lack of access to devices, low digital literacy and skill levels, perceived lack of relevance, safety and security concerns, and lack of trust in private and public digital inclusion program. Because the causes of the adoption gap can be so varied, designing and implementing programs in collaboration with community-based organizations and leaders who know the local community challenges deeply and have earned the community's trust will improve program adoption and impact.

According to a 2021 survey conducted by EveryoneOn, more than 7 in 10 respondents identified public libraries, schools, or community nonprofits as trustworthy entities for learning about discounted internet programs.[43] Local public entities and community organizations are considered among the most trustworthy sources of information. Such collaboration will help ensure the people who could benefit most from such services are both aware of and trust the legitimacy and quality of the services and the service providers.

To develop and grow these programs, states, territories, and Tribes may implement one or more of the following:

- Encourage cooperation between a public and private entity to qualify for funding.
- Apportion duties with private partners, taking on tasks such as coordination with local entities and outreach, while private partners focus on network deployment and administration.
- Encourage public support for non-governmental digital equity programs.
- Establish a digital navigators program, empowering volunteers or cross-trained staff already embedded in local communities to promote digital inclusion resources along with other social services.[44]
- Offer digital equity grants to organizations developing content and applications that are relevant to Covered Populations with low rates of broadband adoption.
- Develop an outreach plan that focuses on populations that have not adopted broadband to ensure those who could benefit most from such services are both aware of and trust the legitimacy, relevancy, and quality of the services.

DIGITAL NAVIGATORS

WHO IS A DIGITAL NAVIGATOR?

Individuals affiliated with trusted community organizations, who are trained to help members of their community access the Internet, use devices, and build digital skills. Often, digital navigators are volunteers or cross-trained staff working for internet service providers, local libraries, community organizations, or other social services. Digital navigators are often community members themselves. They are critical to closing the digital divide and reducing social inequities by helping more people get online. Federal and state funding may be available to support digital navigator initiatives.

WHY ARE THEY VALUABLE?

- Embedded in the community, they go door-to-door to meet people where they are. They understand first-hand the intersectional needs and challenges facing people and can quickly assess individuals' specific needs. They can also serve as useful sources of feedback on the design and effectiveness of digital inclusion resources.
- Knowledgeable of available resources, they can provide one-on-one assistance to match people's needs with relevant programs, benefits, offers, and other resources to meet their needs (e.g., free internet services, low-cost devices, digital literacy educational resources).
- Trusted by the community, they can help people understand how they stand to benefit from digital access and what their options are and help them confidently choose what best meets their needs.

WHAT IMPACT CAN THEY HAVE?

More people are able to productively engage in today's digital society through increased uptake of digital inclusion resources suited to their needs.

EXAMPLES:

- **Chicago Connected** is the largest school broadband adoption program in the U.S. Led by the city, it has connected more than 40,000 households representing 77,000 students through multi-stakeholder partnership and digital navigators.
- Based in Boston, **Tech Goes Home** (TGH) provides computers, internet, and training to families and individuals throughout Massachusetts. So far, 21,000 learners have graduated from TGH programs, and TGH has distributed more than 15,000 new computers.
- **Rural Local Initiatives Support Corporation** (LISC) operates a Digital Connectors program through a network of 32 community organizations across 20 states in the Appalachia region, deep South, upper Midwest, and Navajo Nation.
- **The National Digital Inclusion Alliance** (NDIA) has developed a digital navigator model which provides one-to-one dedicated support via phone, in collaboration with an affiliate network of more than 600 digital inclusion practitioners in 44 states, the District of Columbia, and the U.S. Virgin Islands.

CONCLUSION

This digital equity handbook shows how state, territorial, Tribal, municipal, and local governments can leverage broadband policy principles and seven actionable steps to contribute to, develop, and implement digital equity plans and programs. It also complements and builds upon our previously published broadband program administration handbook. Both handbooks stress the importance of data-driven policy interventions. Available data shows that the broadband adoption gap is greater than the broadband availability gap, yet it seems like many more resources are going to the availability side of the ledger. Both challenges should be approached simultaneously and with considerable vigor.

Data also shows that lower-income communities are adopting broadband services and technologies at lower rates. However, because availability and adoption gaps impact various groups, communities, and individuals differently, localized and individualized quantitative and qualitative assessments and policy interventions are needed.

Unprecedented levels of federal and state funding and a high degree of public attention to the need offer a special opportunity to close the digital divide once and for all. Achieving our shared broadband availability and adoption goals will require concerted and persistent collaboration across all levels of government, the private sector, community-based organizations, and community members.

USEFUL DEFINITIONS

Adoption (Subscription): Broadband is considered adopted when a consumer to whom broadband is available actually subscribes to or purchases broadband service. Consumers will subscribe to or purchase service at a specific speed tier available to them. When describing broadband statistics, the terms "broadband adoption rates" and "broadband subscription rates" are often used interchangeably.

Availability (Access, Deployment): Broadband is considered available if an ISP can provide a location with a broadband connection without an extraordinary commitment of resources. This may be as simple as installing a modem in a residence that connects to a copper, fiber, or coaxial cable, or may require adding a short section of cable or a fixed wireless link to a premises. The terms broadband availability, access to broadband, and broadband deployment are often used interchangeably. An operator's broadband availability rate can be reported at different levels of geography, such as a census block or at an individual location. Speed tiers that are available in a geographic location such as census blocks or to a premises are also often reported. Speed tiers are characterized using a combination of download and upload speeds such as 25/3 Mbps, 100/20 Mbps, or 100/100 Mbps.

Broadband: The FCC defines internet speeds that are at least 25 Mbps down and 3 Mbps up (25/3 Mbps) as broadband. In 2015, the FCC concluded that the 25/3 Mbps broadband definition was justified considering advances in technology, market offerings by broadband providers, and consumer demand. At that time, the FCC reported that, as of 2013, approximately 83% of the U.S. population had access to 25/3 Mbps broadband, but that less than half of the rural U.S. population had such access. While standard broadband definitions are largely a legal and regulatory construct, they are important for regulators and program administrators because they 1) define areas lacking access to desired service levels, 2) help prioritize policy interventions, and 3) set baselines for broadband funding obligations.

Fixed Broadband Connections: These are fixed data transmission lines used to connect homes and businesses and use technologies such as Digital Subscriber Lines (over copper lines), Cable (over coaxial lines), Fiber, and Fixed Wireless Access. Technologies can also be combined such as Hybrid Fiber-Coaxial (HFC) that combines fiber to a headend and cable to subscriber premises.

- **Digital Subscriber Line (DSL):** A family of technologies that are used to transmit digital data over copper telephone lines. DSL services can be delivered simultaneously with wired telephone service on the same telephone line. The current typical speeds available are 8 Mbps to 24 Mbps downstream and 1 Mbps to 3.3 Mbps upstream.

- **Fiber:** Fiber to the home or premises is a type of high-speed broadband technology that uses fiber optic cables to transmit data to a network interface on the exterior of the customer premises. When fiber is delivered to a premises, it is called Fiber-to-the-Premises (FTTP). FTTP is also sometimes called FTTH (Fiber-to-the-Home). The current typical speeds are 50 Mbps to 1 Gbps downstream and upstream.

- **Hybrid Fiber-Coaxial (HFC):** A network technology that combines optical fiber and coaxial cable to deliver broadband services. The fiber optic network extends from the cable operators' master headend, sometimes to a regional headend, and out to a neighborhood hub site, and finally to an optical node which typically serves from 100 to 450 homes. In the optical node, the broadband signal is transformed from an optical signal to a radio frequency (RF) signal for transmission over coaxial cables to subscriber homes. HFC networks provide bi-directional high-speed data service that can simultaneously deliver cable television and broadband service; this is the typical network architecture for most modern cable ISPs. At the time of publication, the current typical speeds available are 50 Mbps to 1.2 Gbps downstream and 5 Mbps to 200 Mbps upstream. Next generation HFC technology being rolled out in the near term is scalable to deliver download speeds up to 10 Gbps, and multi-gigabit upload speeds.

- **Fixed Wireless Access (FWA):** This is a way of providing wireless connectivity through radio links between two fixed points and can provide wireless internet access to homes or businesses without laying fiber and cables to provide last mile connectivity. To deliver service, the ISP will install a wireless device at the customer's premises, which will be wirelessly connected to another wireless device at a tower or another high site location. A variety of fixed wireless technologies have been used such as LTE, Wi-Fi, and Wi-Max, and most recently 5G. The current typical speeds available for FWA are up to 500 Mbps downstream and up to 500 Mbps upstream.

Internet Performance: The experience that a user has when connected to the internet can be measured quantitatively or qualitatively. Quantitative measurements are carried out by users themselves when doing speed tests from their phones or web browsers, or by operators using equipment in their networks. These tests usually measure the downlink performance (speed from an internet service to the user's device) in Mbps, uplink performance (speed from a user to an internet service) in Mbps, and the round-trip delay measured in milliseconds between a user's computer and an internet service (latency). Qualitative measurements are usually done by asking a user to offer a personal rating (e.g., one to five stars) of the quality of an internet service. This is often presented to a user after using a service like Zoom or Skype.

Internet Speeds: This captures the amount of digital information that can move through an internet link in one second. Speeds are provided for the downlink (the link between an internet service and a user's device) and the uplink (the link between a user's device and an internet service). Today, speeds are usually specified in Megabits per seconds (Mbps); however, the speed of internet connections is increasing with each new generation of technology introduced into the market.

Satellite Broadband Connection: Provides broadband access through communication satellites. Communication satellites can be Geostationary Earth Orbit (GEO) satellites or more recent Low Earth Orbit (LEO) satellites. LEO satellites such as the newly launched Starlink and OneWeb satellites provide much higher speed and lower latency links than GEO satellites. Users install a satellite dish at their premises to receive a broadband service from a satellite broadband service provider. The current typical speeds available for LEO satellites are 5 Mbps to 100 Mbps downstream and 1 Mbps to 20 Mbps upstream. The current typical speeds available for GEO satellites are 2 Mbps to 50 Mbps downstream and 0.2 Mbps to 5 Mbps upstream.

AMERICAN RESCUE PLAN ACT

The American Rescue Plan Act (ARP or ARPA) includes nine provisions that provide about $388.1 billion in flexible funding for a variety of digital equity activities.[45] Table 3 below shows the breakdown of the nine provisions.

ARPA PROVISION	FUNDING & EXPIRATION	PRIMARY RECIPIENTS	PHYSICAL NETWORK BUILD-OUT	DEVICE SUPPORT	BROADBAND SUBSCRIPTION SUPPORT	DIGITAL LITERACY TRAININGS
Elementary and Secondary School Emergency Relief Fund	$122.775 billion through Sept 30, 2023	Local educational agencies		✔	✔	
Institute of Museum and Library Services	$200 million until expended	State library administrative agencies	✔	✔	✔	✔
Economic Adjustment Assistance	$3 billion through Sept 30, 2022	Department of Commerce, states, and communities	✔			
Homeowner Assistance Fund	$9.961 billion through Sept 30, 2025	States, territories, and Tribal governments			✔	
Emergency Connectivity Fund	$7.171 billion through Sept 30, 2030	Schools and libraries	✔	✔	✔	
Coronavirus State Fiscal Recovery Fund	$219.8 billion through 2024	States, territories, and Tribal governments	✔	✔	✔	✔
Coronavirus Local Fiscal Recovery Fund	$130.2 billion through 2024	Metropolitan cities, non-entitlement units of local government, and counties	✔	✔	✔	✔
Coronavirus Capital Projects Fund	$10 billion until expended	States, territories, and Tribal governments	✔	✔		
Local Assistance and Tribal Consistency Fund	$2 billion through Sept 30, 2023	Revenue sharing counties and Tribal governments	✔	✔	✔	✔

Table 3 — *ARPA Funding to Address the Digital Divide* *Source:* Brookings Analysis of ARPA[46]

INFRASTRUCTURE INVESTMENT AND JOBS ACT

On November 15th, 2021, President Biden signed into law the Infrastructure Investment and Jobs Acts (IIJA) that includes $65 billion to improve high-speed internet access and affordability.[47]

The broadband funding in the bill is aimed at building high-speed internet networks, helping low-income families pay for service, and a digital equity program. IIJA provides further funding to three current broadband programs, the EBB program (now called the Affordable Connectivity Program or ACP), ReConnect, and the Tribal Broadband Connectivity Grant Program, as well as fund entirely new broadband programs. Broadband funding from IIJA follows new broadband guidelines that discourage overbuilds while prioritizing unserved and underserved areas with deployed speeds of at least 100/20 Mbps.

IIJA PROVISION	FUNDING & EXPIRATION	PRIMARY RECIPIENTS	PHYSICAL NETWORK BUILD-OUT	DEVICE SUPPORT	BROADBAND SUBSCRIPTION SUPPORT	DIGITAL LITERACY TRAININGS	OTHER
Broadband Equity, Access and Deployment (BEAD) Program	$42.45 billion, until expended	States and territories; subgrants to cooperatives, non-profits, PPPs, private companies, and public or private utilities; local governments	✔	✔	✔	✔	✔
Affordable Connectivity Program	$14.2 billion, until expended	Consumer and Tribal households		✔	✔		
State Digital Equity Planning Grant Program	$60 million	States and territories					✔
State Digital Equity Capacity Grant Program	$1.44 billion, $240 million for 2022 and $300 million each year 2023-2026	States and territories	✔	✔	✔	✔	✔
Digital Equity Competitive Grant Program	$1.25 billion, distributed over 5 years	Political subdivisions; agencies responsible for adult education, literacy, and workforce development; Native American tribes; non-profits; community anchor organizations		✔	✔	✔	✔
ReConnect	$2 billion	States; territories; Tribal governments; corporations; LLCs/ LLPs; cooperatives	✔				
Tribal Broadband Connectivity Program	$2 billion	Tribal governments; organizations, colleges, or universities; Dept of Hawaiian Homelands; Native corporations	✔	✔	✔	✔	✔
Enabling Middle Mile Broadband Infrastructure Program	$1 billion, through Sept 30, 2026	States; Tribal governments; tech companies; public, private, and cooperative utilities; private companies; nonprofits; regional planning counsels; Native entities; economic development authorities	✔				
Private Activity Bonds	$600 million	State and local government projects	✔				

Table 4 — *IIJA Funding to Address the Digital Divide*

BROADBAND AVAILABILITY AND ADOPTION FOR ALL 50 STATES AND THE DISTRICT OF COLUMBIA

STATE	POPULATION IN 2020	LIVING BELOW 100% POVERTY LEVEL	WITHOUT ACCESS TO 25/3 MBPS*	WITHOUT ACCESS TO 100/20 MBPS*	WITHOUT ACCESS TO 100/100 MBPS*	WITH ACCESS TO CABLE*	WITH ACCESS TO FIBER*	WITH ACCESS TO FIXED WIRELESS*	SUBSCRIBED TO FIXED BROADBAND **
Alabama	5,024,279	11.87%	14.60%	19.73%	67.11%	72.93%	33.81%	87.60%	60.91%
Alaska	730,680	7.58%	21.72%	26.46%	68.76%	68.79%	5.97%	46.43%	68.19%
Arizona	7,421,240	9.85%	3.47%	8.42%	34.97%	84.16%	12.05%	93.67%	69.72%
Arkansas	3,030,410	12.17%	16.72%	25.80%	62.87%	63.11%	34.79%	87.33%	56.59%
California	39,368,046	9.21%	1.72%	2.65%	14.48%	91.81%	35.55%	98.70%	76.05%
Colorado	5,807,299	6.38%	3.09%	7.94%	60.79%	85.04%	26.96%	96.12%	77.29%
Connecticut	3,557,006	7.50%	2.41%	3.00%	48.70%	97.93%	52.61%	95.09%	79.39%
Delaware	986,768	8.11%	1.89%	7.21%	46.86%	90.35%	53.46%	96.32%	77.21%
D.C.	712,787	10.10%	3.23%	3.30%	22.19%	92.68%	73.41%	87.32%	72.87%
Florida	21,732,917	9.75%	5.42%	8.27%	62.68%	86.90%	36.38%	91.77%	72.95%
Georgia	10,709,715	10.85%	8.22%	11.17%	61.43%	84.36%	39.55%	91.41%	71.25%
Hawaii	1,407,006	7.00%	14.23%	24.48%	63.76%	57.74%	39.98%	88.69%	79.16%
Idaho	1,826,689	8.14%	4.15%	14.63%	66.97%	77.90%	32.36%	96.25%	69.36%
Illinois	12,587,504	9.10%	2.56%	28.65%	66.35%	92.47%	34.30%	95.80%	73.22%
Indiana	6,754,708	9.40%	6.67%	12.72%	59.21%	80.99%	41.12%	94.43%	67.55%
Iowa	3,163,416	7.60%	3.21%	9.45%	56.78%	72.68%	44.42%	94.53%	67.88%
Kansas	2,913,724	8.22%	3.14%	9.79%	54.78%	78.55%	47.07%	96.71%	71.05%
Kentucky	4,477,217	12.54%	14.30%	18.79%	54.34%	71.99%	46.41%	87.83%	66.56%
Louisiana	4,645,294	14.82%	12.99%	17.76%	68.13%	82.80%	26.43%	91.30%	62.33%
Maine	1,350,136	6.90%	5.70%	16.38%	84.00%	81.22%	17.08%	93.67%	75.04%
Maryland	1,350,136	6.90%	5.70%	16.38%	84.00%	81.22%	17.08%	93.67%	75.04%
Massachusetts	1,350,136	6.90%	5.70%	16.38%	84.00%	81.22%	17.08%	93.67%	75.04%
Michigan	9,966,429	9.87%	6.99%	11.01%	83.94%	85.06%	17.07%	91.64%	69.90%
Minnesota	5,657,155	6.17%	4.26%	7.29%	33.92%	81.48%	30.34%	96.28%	74.98%
Mississippi	2,966,751	14.98%	18.11%	22.81%	40.09%	61.94%	59.69%	85.23%	52.00%
Missouri	6,151,378	8.92%	9.22%	16.34%	63.12%	72.84%	35.83%	94.55%	66.18%

Table 5 — *Broadband Availability and Adoption for All 50 States and the District of Columbia*

STATE	POPULATION IN 2020	LIVING BELOW 100% POVERTY LEVEL	WITHOUT ACCESS TO 25/3 MBPS*	WITHOUT ACCESS TO 100/20 MBPS*	WITHOUT ACCESS TO 100/100 MBPS*	WITH ACCESS TO CABLE*	WITH ACCESS TO FIBER*	WITH ACCESS TO FIXED WIRELESS*	SUBSCRIBED TO FIXED BROADBAND **
Montana	1,080,541	8.11%	15.92%	29.31%	83.60%	59.13%	14.53%	89.89%	66.44%
Nebraska	1,937,499	7.10%	2.21%	7.66%	44.87%	79.33%	54.62%	98.11%	72.69%
Nevada	3,138,794	9.73%	1.53%	2.70%	9.15%	90.13%	20.22%	97.83%	73.01%
New Hampshire	1,366,269	4.89%	4.89%	6.40%	60.77%	90.33%	39.90%	92.80%	81.77%
New Jersey	8,882,344	7.86%	1.74%	1.96%	35.61%	102.02%	68.62%	96.35%	81.94%
New Mexico	2,106,306	14.52%	9.82%	18.75%	80.46%	76.65%	15.18%	94.22%	61.48%
New York	19,337,145	10.70%	3.71%	4.58%	36.04%	95.95%	64.94%	95.99%	77.39%
North Carolina	10,600,602	9.87%	7.53%	13.19%	65.08%	81.15%	33.62%	90.58%	70.54%
North Dakota	765,257	7.14%	11.51%	12.80%	40.85%	65.50%	42.40%	82.20%	74.48%
Ohio	11,693,026	10.12%	5.24%	10.05%	67.62%	87.50%	31.08%	94.47%	72.74%
Oklahoma	3,986,278	11.40%	7.31%	14.79%	63.03%	69.92%	35.23%	90.92%	60.46%
Oregon	4,241,446	7.83%	4.79%	10.20%	58.30%	86.47%	41.43%	95.46%	74.70%
Pennsylvania	12,783,223	8.66%	5.28%	6.39%	51.23%	93.93%	49.51%	93.92%	74.28%
Rhode Island	1,057,125	7.88%	2.84%	2.87%	22.21%	100.30%	81.59%	95.68%	79.11%
South Carolina	5,217,820	10.36%	8.64%	12.58%	66.13%	76.85%	34.33%	89.37%	65.79%
South Dakota	892,688	8.76%	11.25%	17.18%	65.57%	56.99%	31.93%	83.23%	70.52%
Tennessee	6,886,674	10.79%	6.82%	10.12%	49.79%	81.41%	50.31%	91.54%	66.82%
Texas	29,360,186	11.13%	4.50%	8.24%	51.34%	81.69%	46.25%	93.58%	67.77%
Utah	3,249,832	6.14%	2.79%	4.76%	45.60%	87.47%	48.40%	85.51%	78.14%
Vermont	623,347	6.50%	12.35%	20.70%	73.82%	74.61%	29.63%	92.06%	74.55%
Virginia	8,596,191	7.08%	6.82%	8.48%	45.20%	84.93%	53.77%	92.69%	73.37%
Washington	7,693,492	6.99%	4.85%	12.30%	67.96%	88.80%	31.17%	95.03%	78.80%
West Virginia	1,784,784	12.29%	18.46%	26.74%	84.73%	71.25%	14.96%	84.73%	66.23%
Wisconsin	5,832,546	7.35%	5.92%	18.07%	72.88%	76.22%	26.87%	94.47%	71.12%
Wyoming	582,322	6.72%	14.56%	23.46%	71.75%	65.17%	15.27%	88.44%	67.79%

* FCC June 2022 Estimate ** ACS Dec 2021 Estimate

ENDNOTES

1 Infrastructure Investment and Jobs Act (IIJA). (2021, October 10). Retrieved December 20, 2021, from https://www.congress.gov/117/bills/hr3684/BILLS-117hr3684enr.pdf.

2 The FCC Broadband Data Collection (BDC) system provides details on providers and specific technologies, such as fiber and cable, available to individual locations. Broadband data collected with the BDC system is available at https://www.fcc.gov/BroadbandData.

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[35] IIJA sec. 60102(h)(5)(D).

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[39] Congress limited ACP device eligibility to laptops and desktops, but not smartphones. This decision is supported by research showing that mobile-only users, while benefitting from Internet access, have more limited experiences when compared to their computer-owning counterparts. Reliance on a smartphone as the sole access to the internet limits both the range of online activities and the user's digital skills. See DigitUnity. The Importance of Large Screen Device Ownership. November 29, 2021. Retrieved January 25, 2023 from https://digitunity.org/research/device-ownership-matters/.

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