Digital Equity Plan

Final – December 15, 2023

State of West Virginia

West Virginia Department of Economic Development

INTERNET FOR ALL **West Virginia**

Introduction

West Virginia is ready to tackle the digital divide. For far too long, many West Virginia communities have lacked affordable, high-speed broadband internet access, a necessity for access to healthcare, education, civic and social engagement, and economic opportunity. West Virginia residents have voiced the urgent need to address this issue. West Virginia's leaders understand that broadband is essential to West Virginia's economic future.

With the highest percentage of covered populations nationwide, and over 35%[1] of its citizens living in unserved or underserved areas as designated by the Bipartisan Infrastructure Investment and Jobs Act (IIJA), digital equity initiatives will be noteworthy in the Mountain State.

In 2021, Congress passed the Digital Equity Act (DEA) as part of the IIJA. The IIJA includes two key state broadband grant programs managed by the National Telecommunications and Information Administration (NTIA):

1. The $42.5 billion Broadband Equity, Access, and Deployment (BEAD) program, and
2. The $2.75 billion Digital Equity Act (DE) programs, including:
    a. $60 million for a State Planning Program,
    b. $1.44 billion for a State Capacity Program, and
    c. $1.25 billion for a Competitive Grant Program.[2]

The BEAD and Digital Equity programs are strategically linked in the IIJA because without equitable access, too many Americans are left behind and unable to leverage the power of the internet. The State of West Virginia is resolute in its commitment to both increasing broadband deployment and closing the digital divide that disconnects its residents.

West Virginia's leaders have been clear in emphasizing the importance of connectivity and digital equity. For example, in May 2022 when Governor Justice designated the West Virginia Department of Economic Development, Office of Broadband (WVDED), as the lead applicant for NTIA programs, he said:

> "As Governor of the State of West Virginia, I have made broadband a top priority by launching West Virginia's Billion Dollar Broadband Strategy. I am absolutely committed to ensuring that every West Virginian has access to high-speed internet connectivity. The Broadband Equity, Access, and Deployment and Digital Equity programs will help us achieve that goal. We look forward to working with the U.S. Department of Commerce, NTIA, and many stakeholders throughout West Virginia to implement this historic program. I have directed the West Virginia Department of Economic Development and its Office of Broadband to make sure that broadband connectivity is available everywhere throughout our great state. Working together, we will achieve internet connectivity for all West Virginians."

To begin the digital equity planning process, NTIA awarded grants to states and territories to develop State Digital Equity Plans designed to identify barriers to digital equity and implement strategies to overcome

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[1] Calculated using National Broadband Availability Data provided by the Federal Communications Commission, available at https://broadband477map.fcc.gov/#/data-download.
[2] Note: Funding amounts are for the national total, not just West Virginia

these barriers. **West Virginia's Digital Equity Planning Grant application was submitted on July 1, 2022, in advance of the July 12, 2022, deadline. West Virginia's Digital Equity Planning Grant was approved by NTIA on September 30, 2022.** Digital Equity Plans must be submitted within one year of receiving Digital Equity Planning Grant funds. States that do not complete a Digital Equity Plan cannot obtain BEAD funding or Digital Equity funding. The Digital Equity Plan constitutes a required companion piece of the Five-Year Action Plan for BEAD funding.

Throughout the research, collaboration, and drafting process, WVDED has met the Digital Equity Plan requirements outlined in the Notice of Funding Opportunity (NOFO) provided by NTIA. To quickly find where each NTIA guidance requirement is addressed in this document, see the Annex A.8 Crosswalk with Guidance Document.

Under the BEAD and Digital Equity programs, NTIA awarded initial planning funds to the WVDED as follows:

Program	Amount	Date of Award	Due Date
BEAD Planning Grant	$5,000,000	Nov. 14, 2022	Aug. 11, 2023
Digital Equity Planning Grant	$728,065	Sept. 30, 2022	Oct. 2023
Additional Fund Allocation	$4,574.58	Sept. 25, 2023	Extended to Nov. 13, 2023

In addition to the requirements established by NTIA, West Virginia's Digital Equity Planning Grant deliverables will include:
1. a printed Digital Equity Plan, with an electronic version hosted on the Internet for All WV website;[3]
2. an open access, interactive online dashboard and downloadable map displaying the data collected to inform the measurable objectives, and
3. a digital equity asset inventory and community resource library.

The NTIA places strong emphasis on public engagement and collaboration throughout digital equity planning. WVDED supports and encourages locally driven strategies that will empower West Virginia residents to effectively engage in an economy driven by broadband connectivity.

Acknowledgements

This undertaking would not have been possible without the hard work of dedicated community leaders throughout West Virginia. The WVDED wishes to thank the Digital Equity Steering Committee, the Core Planning Team, the West Virginia Broadband Enhancement Council, West Virginia's Regional Planning and Development Councils, the Marshall University Center for Business and Economic Research, West Virginia University-StartUp West Virginia, and the organizations that provide West Virginians with valuable support and services. Most importantly, the WVDED also thanks the many West Virginians who took the time to add their voices to the digital equity conversation.

1. Executive Summary

More than 35% of West Virginians do not have access to high-speed internet,[4] and many of those with access often cannot afford the price of a connection, do not have an internet-enabled device, and/or lack the skills to effectively use the internet to fully participate in our society, democracy, and economy.

Given these challenges, the State of West Virginia is unwavering in its commitment to achieving its vision for Digital Equity:

West Virginia Vision for Digital Equity

Ensure that all West Virginians have the resources they need to participate in the digital world and achieve the numerous benefits of digital equity

Through passage of the Infrastructure Investment and Jobs Act (IIJA) in 2021, new Federal broadband investments will propel West Virginia forward in connecting all of its residents. Together, the Broadband Equity, Access and Deployment (BEAD) Grant and the Digital Equity Grant Programs will bring quality broadband service to underserved residents and empower everyone to access essential services, civic and cultural participation, employment, and lifelong learning.

Since 2018, West Virginia has successfully utilized other federal funding sources to complete community and regional broadband planning, setting the stage for greater understanding of the opportunities presented by the BEAD and Digital Equity programs. With this experience, West Virginia's communities are well positioned to achieve the benefits of broadband connectivity.

The following Digital Equity Plan includes details on:

1. Vision & Goals
2. Assets and Needs
3. Collaboration & Stakeholder Engagement Strategy, and
4. Implementation Plan.

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[4] Calculated using National Broadband Availability Data provided by the Federal Communications Commission, available at https://broadband477map.fcc.gov/#/data-download.

1.1 Vision and Goals

In shaping the Digital Equity Plan, WVDED actively solicited input from stakeholders, citizens, and state government leaders to define the State's vision and goals.

Goal 1: Realize Affordable Connectivity	**Objective 1.1**: Increase enrollment in the Affordable Connectivity Program (ACP)	**Objective 1.2**: Complete broadband deployment as a part of the BEAD Five-Year Action Plan to increase the number of available internet service providers and increase competition
Goal 2: Secure Device Access and Affordability	**Objective 2.1**: Create a sustainable program to provide device distribution, lending, and recycling	**Objective 2.2**: Ensure citizens receive technical assistance for their newly acquired devices
Goal 3: Elevate Digital Skills and Accessibility of Public Services	**Objective 3.1**: Make digital literacy training in cybersecurity, privacy, telehealth, and more, available to all West Virginians, including all covered populations[5]	**Objective: 3.2**: Ensure websites and online services hosted by state agencies are accessible for all West Virginians

Achieving digital equity is an iterative and collaborative process, and the specific key performance indicators for these objectives are discussed in Section 2.1. Indeed, digital equity must be constantly developed, reinforced, assessed, and incorporated into multiple facets of society. WVDED expects this plan and these goals to evolve and change over the course of the Digital Equity Program as new data becomes available and circumstances change.

1.2 Digital Equity Assets and Needs

Although West Virginia already has many programs that address digital equity gaps, more are needed. WVDED performed an asset inventory of these programs with respect to the eight covered populations set forth in the NOFO. More information is found in Section 3 of this Plan. For the purposes of this document, covered households means a household, the income of which for the most recently completed year is not more than 150% of an amount equal to the poverty level, as determined by using criteria of poverty established by the Bureau of the Census.[6]

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[5] Note: Elevating digital skills will bolster WV's workforce across sectors. Specific broadband industry workforce needs are discussed further in the BEAD Plan.
[6] NTIA, "Notice of Funding Opportunity, State Digital Equity Planning Grant Program" May 2022, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/DE%20PLANNING%20GRANT%20NOFO.pdf.

Aging Individuals	Aging individuals access digital literacy training, online safety courses, and public computer labs through West Virginia's senior centers and libraries. The Older Adults Technology Services (OATS) also provides curated resources and programs such as Senior Planet.
Racial and Ethnic Minorities	Racial and ethnic minorities in West Virginia interested in digital equity resources benefit from the Grow with Google Program, which partners with local institutions to provide free digital skills workshops, resources, and Google Career Certificates in tech-related fields. Additionally, West Virginia State University's Historically Black Colleges and Universities (HBCU) Career Readiness Program offers Black students digital skills training to excel in their careers. Note that there are no federally recognized Native American Tribes in West Virginia.
Rural Residents	Rural residents are also supported by the Grow with Google initiative that collaborates with key community institutions, including libraries, such as the Mary H. Weir Public Library, chambers of commerce, and universities to provide professional training. The Mary H. Weir Public Library also collaborates with local colleges and Goodwill to provide technical software and hardware support.
Incarcerated Individuals	Both the West Virginia Schools of Diversion & Transition and Workforce West Virginia's Digital Inclusion Program offer digital skills training to incarcerated individuals. These programs also help support successful reintegration, which assists in reducing recidivism rates.
Veterans	West Virginia Veterans Upward Bound and Tech for Troops help veterans transition into civilian roles by providing digital skills classes, certification programs, and equipment donations.
Individuals with Disabilities	Individuals with disabilities can access assistive technology, training, and device loans through the West Virginia Division of Rehabilitation Services and the WVU Center for Excellence in Disabilities. These programs empower disabled individuals to live and work independently. The West Virginia Schools for the Deaf and Blind focus on programs that encourage students to, "achieve, challenge, and thrive."
Individuals with Language Barriers	The West Virginia Department of Education offer comprehensive digital equity services to individuals with language barriers. These include English learning courses, literacy programs, and digital skills training, helping to boost literacy and digital competence among adult English Language Learners and low-literacy adults. County and local-level programs, such as Summers County Adult Education, also provide similar resources.
Individuals Who Live in Covered Households	The Affordable Connectivity Program (ACP), managed by the Federal Communications Commission (FCC), offers eligible West Virginia households up to $30/month for internet and $100 for a computer from select providers. West Virginia is boosting ACP sign-ups by collaborating with higher education institutions, hosting promotional events, and using FCC maps to target areas with coverage gaps. Local internet service providers also promote ACP, with some offering discounted packages.

All Covered Populations

The State of West Virginia offers several digital equity assets and resources to all West Virginians. These include extensive digital literacy and skills training programs offered through state education institutions, public computing programs available at community centers, libraries, and senior centers, and low-cost device acquisition and maintenance programs in collaboration with internet service providers and federal entities. Additionally, the state recycles technology through the secondlaunchWV program, refurbishing and donating unused equipment from state agencies to early childhood programs and K-12 schools.[7]

The ACP is also available to many eligible members of all covered populations.

To assist with the above goals and coordinate the digital equity planning process, WVDED created a Core Planning Team and a Digital Equity Steering Committee. For a list of Digital Equity Steering Committee members and rules, refer to Appendix A.4 Digital Equity Steering Committee Details. The Core Planning Team gathered community insights through public listening sessions and a statewide survey. Initial results point to common issues across target populations in West Virginia such as high-speed internet affordability, access to low-cost internet-enabled devices, availability of technical support, and digital literacy skills. These insights provided guidance for the goals outlined above.

WVDED partnered with the State's 11 Regional Planning and Development Councils (RPDCs) to conduct listening sessions in each of West Virginia's 55 counties. Several themes emerged from the listening sessions. These results are summarized on the following pages and additional details are provided in Appendix A.5 Detailed List of Assets by Covered Population.[8] Appendix A.7 Barriers Assessment Summary Table provides a breakdown of the most reported barriers by the top three covered populations most likely to report them throughout this research.

Summary of Listening Session Findings

Access and Adoption

Poor internet quality and reliability are major barriers to internet access and usage in West Virginia.

During **9 out 10** listening sessions in Region 1, residents reported poor internet quality as a top barrier.

High cost for broadband internet and a lack of competition among Internet Service Providers prevent many West Virginians from adopting internet services.

The majority of listening sessions held in Region 7 reported that the high cost of services presented a major barrier for access and adoption to participants

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[7] secondlaunchWV, West Virginia Department of Education, https://wvde.us/infrastructure-and-network-operations/second-launch/

[8] The data detailed herein comes from the RPDC listening sessions. Each statistic is more clearly cited in the appropriate appendix; see Appendix A.6 Detailed Covered Population Needs Assessment.

Devices and Accessibility

Public resources, including State and federal websites, pose challenges for individuals with disabilities and those with low literacy levels or English learning needs.

Half of the listening sessions held in Region 10 cited physical disabilities as a barrier for effective internet usage.

Lack of knowledge and lack of access to internet-capable devices are major barriers to access for some West Virginians.

More than half of listening sessions with formerly incarcerated individuals and Region 10 residents reported lack of subject matter knowledge as a top barrier for getting online.

Telehealth and Emergency Services

Internet connectivity issues prevented participants from accessing telehealth and contacting emergency services.

Half of the sessions with previously incarcerated individuals reported that limited internet prevented them from accessing online medical or government services.

Many participants, regardless of demographic, have gone without methods of communication for long periods of time, including without access to emergency services—a dangerous situation.

Residents who participated in a session hosted by Region 7 stated that they have gone up to **three weeks** without any way to communicate with the outside world or the ability to call 9-1-1.

Education and Economic Opportunities

Lack of internet access significantly affects learning and economic opportunities in West Virginia.

Residents at **half** of the Region 9 listening sessions reported that lack of internet access significantly prevented their region's ability to create economic opportunity.

The digital divide has created hardships for families, students, and businesses, especially during the COVID-19 pandemic.

One county estimates that **50%** of the children in their county were left behind because of the lack of access to the internet during COVID-19, according to one resident.

Civic and Social Engagement
Lack of affordable, reliable internet connectivity limit social engagement opportunities, particularly for aging individuals.
Slow internet speeds and data caps restrict usage of online resources for entertainment or informational purposes.
Some residents reported that it can take **30 minutes** for a website to load, **one hour** to download a file, or as much as **a full day** to send a photo.

1.3 Collaboration and Stakeholder Engagement

The State of West Virginia believes that bridging the digital divide is a collaborative effort between partners in the public and private sectors. As such, WVDED has sought to engage with stakeholders throughout every step of the process, benefiting from their knowledge, input, and resources. This includes stakeholders at the federal, state, and local level. As WVDED executes its Digital Equity Plan, it will continue partnering with these entities whenever possible. Figure 1 details some of the entities with which the WVDED will continue the implementation of its Digital Equity Plan.

West Virginia's Regional Planning and Development Councils, nonprofit organizations, and key stakeholders provide an essential connection to each area of the State. Working together, the planning teams will ensure that all West Virginians are represented in the digital equity and BEAD planning process. The WVDED values and continues to seek further collaboration. These partnerships are briefly described below:

1. **Federal Partnerships**: West Virginia has worked closely with NTIA and its Federal Program Officer throughout the Digital Equity planning process to ensure compliance with all federal requirements.
2. **West Virginia Broadband Enhancement Council**: The West Virginia Broadband Enhancement Council represents constituencies throughout West Virginia and acts in an advisory capacity to the WVDED. In addition, the monthly public meetings of the Council provide a venue for regular updates on the Digital Equity planning process as well as an opportunity for public engagement.
3. **West Virginia Public Institutions**: WVDED has solidified partnerships with key state agencies, including but not limited to, the Office of the Governor, West Virginia Higher Education Policy Commission, West Virginia Department of Transportation, West Virginia Department of Education, Marshall University, West Virginia University (WVU), and many more. This partnership ensures alignment of priorities, collaboration, and resource sharing.
4. **Private Sector**: Discussion of broadband access and digital equity would not be complete without consultation with internet service providers. WVDED has established working relationships with providers through its administration of other state and federal grant programs. The WVDED has established participation in the Affordable Connectivity Program (ACP) as a requirement for funding awards. In addition, these private sector partners participate in the West Virginia Broadband Workforce Council to ensure industry insights in the state's plans.
5. **Nonprofits**: Throughout the development of the Digital Equity Plan, WVDED engaged with nonprofits such as AARP, Generation West Virginia, a variety of community institutions, and more.

These organizations understand the needs of their constituents and members, providing valuable insight to WVDED.

Figure 1: Examples of WVDED Stakeholders and Collaborative Partners

WVDED values and continues to seek further collaboration

Federal Partnerships
Chip Spann coordinates between the State and NTIA. Offers insights based on learnings from NTIA and other states

Broadband Enhancement Council
Represents diverse group of stakeholders in the State, and participates in other groups/partnerships, such as Workforce Dev. Council. Offers feedback and areas for further collaboration

West Virginia Public Institutions
Includes the Governor's Office, Department of Education, West Virginia Higher Education Policy Commission, Department of Transportation, various higher ed. institutions, etc. Ensures alignment on priorities, knowledge sharing, and sharing resources

Private Sector
Especially involved in the Workforce Dev. Council. ISPs will be key partners in building out infrastructure.

Nonprofits
Includes entities such as AARP, community institutions, Generation West Virginia, RPDCs, and more.

As a part of its collaboration efforts, WVDED:

1 Formed the Core Planning Team and Digital Equity Steering Committee to develop a Digital Equity Plan

2 Hosted an Internet for All West Virginia Kickoff Conference to raise awareness of the Digital Equity Act and BEAD Programs

3 Conducted outreach to community organizations and state agencies

4 Developed a marketing and communications plan

5 Created an Internet for All West Virginia website dedicated to the Digital Equity and BEAD Programs

6 Collected input from West Virginians through online and paper surveys

7 Identified key topics and recommendations for plan implementation

8 Organized a 30-day public comment period for the Digital Equity Plan

9 Identified potential partners for implementation of the Digital Equity Plan

2. Introduction & Vision for Digital Equity

Far too many communities in West Virginia lack access to, or cannot afford, high-speed broadband internet service. Those with service often do not have access and/or cannot afford internet-enabled devices or do not have the digital skills to benefit fully from it. This divide worsens existing social inequalities and prevents West Virginians from accessing healthcare, essential services, and social, educational, and economic opportunities.

97% of West Virginians are considered members of covered populations, the highest percentage of any state in the nation.[9] West Virginia faces a **significant challenge** in expanding internet coverage, speed, and availability. 35% of broadband serviceable locations (BSLs)[10] in West Virginia are either unserved, meaning individuals have access to broadband speeds below 25/3 Mbps, or underserved, meaning individuals have access to speed above 25/3 Mbps but below 100/20 Mbps.[11] At the same time, the cost of broadband is unaffordable for many.

In 2021, the U.S. Congress passed the DEA as a part of the bipartisan IIJA, aiming to promote the achievement of digital equity and support digital inclusion activities. The Act supports three main grant programs, all of which are administered by NTIA:

1. State Digital Equity Planning Grant, which enables states and territories to develop State Digital Equity Plans or similar plans.
2. The State Digital Equity Capacity Grant Program, which will award $1.44 billion over five fiscal years to states, territories, and tribal entities for the purpose of implementing their State Digital Equity Plans (or similar plan).
3. The Digital Equity Competitive Grant Program, which makes available $1.25 billion in grant awards over five fiscal years for private sector, public sector, and not-for-profit entities to advance digital equity and engage in digital inclusion activities.[12]

West Virginia received funds to begin Digital Equity Planning in late 2022. In response, West Virginia began outreach and data collection efforts by launching the "Internet for All West Virginia" website. This website offers users a background on the BEAD and Digital Equity programs, a link to the West Virginia Digital Access and Equity Survey that is discussed in Section 3.2, and dates, times, and locations of community listening sessions held by West Virginia's Regional Planning and Economic Development Councils, as discussed in Section 4.2.4.

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[9] United States Census Bureau, Digital Equity Act of 2021, "Total Covered Populations under Digital Equity Act of 2021," https://www.census.gov/programs-surveys/community-resilience-estimates/partnerships/ntia/digital-equity.html, last accessed July 7, 2023.

[10] BSLs are defined by NTIA as a business or residential location in the United States at which fixed broadband Internet access service is, or can be, installed.

[11] Calculated using National Broadband Availability Data provided by the Federal Communications Commission, available at https://broadband477map.fcc.gov/#/data-download.

[12] National Telecommunications and Information Administration, "Digital Equity Act: State Capacity Grant Program, Planning Grants, and Competitive Grant" https://broadbandusa.ntia.doc.gov/sites/default/files/2022-06/DE-FAQs.pdf

West Virginia's Digital Equity Plan is a five-year, action-oriented roadmap for the WVDED—in collaboration with statewide partners—to ensure that every West Virginian can participate in today's increasingly digitally connected society.
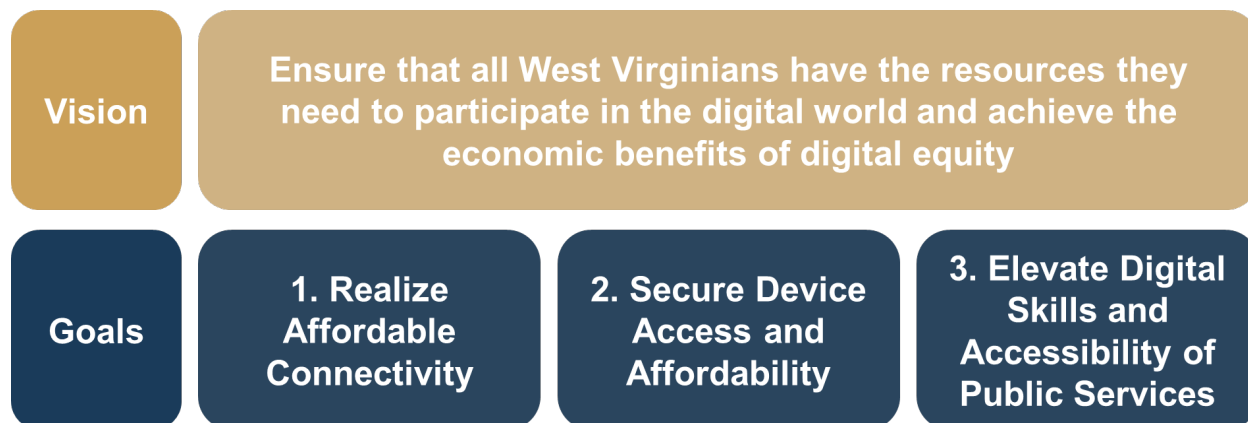
WVDED will convene, facilitate, and champion digital equity and inclusion efforts in the State. Collectively, the strategies outlined in this plan – which were developed with significant input from West Virginia residents and communities – will promote the achievement of digital equity, support digital inclusion activities, and build capacity for efforts to increase broadband adoption, particularly among the State's eight covered populations.

West Virginia's Digital Equity Plan is designed to be a living document. As such, the information collected through this plan is based on a set of early, preliminary findings that will continue to be refined and updated throughout the implementation of the plan.

2.1 Vision, Goals, and Baseline Data

WVDED collaborated with stakeholders, citizens, and state government leaders to develop a holistic vision for digital equity in West Virginia. In parallel, and because of the needs assessment, WVDED developed a set of three goals and six objectives that can lead the State to achieving its vision.

Figure 2: West Virginia's Digital Equity Vision and Goals

Vision	Ensure that all West Virginians have the resources they need to participate in the digital world and achieve the economic benefits of digital equity		
Goals	1. Realize Affordable Connectivity	2. Secure Device Access and Affordability	3. Elevate Digital Skills and Accessibility of Public Services

Achieving digital equity is an iterative process, and to accomplish these goals, the State developed the following high-level, key performance indicators (KPIs) to measure and track the success of each strategy. WVDED acknowledges that one size does not fit all; the strategies presented below and in Section 5 of this plan take measures to ensure the needs of covered populations are individually addressed.

For some of the KPIs, the baseline figures are established on an aggregate level because of either a lack of available data delineating between each covered population or because advances in the aggregate meet the needs of all covered populations. For the former case, WVDED will perform the necessary surveys and analyses to establish baseline figures and subsequent monitoring of the KPIs after approval of the Digital Equity Plan by NTIA.

Realize Affordable Connectivity

Affordability is a major issue for all covered populations because of a host of systemic and geographic issues. For instance, in listening sessions, all covered populations reported some experience with internet service providers that charged what users felt were exorbitant prices. These participants often pointed to lack of competition as one of the main catalysts, stemming from limited economic viability of deploying broadband in low population density areas with infrastructure-challenging terrain, such as mountains.

Furthermore, according to a statewide survey conducted by WVDED, 70% of West Virginians are unaware of programs designed to help them afford internet service, such as the ACP; see section 4.2.7 for details. All these factors compound to make up West Virginia's overarching affordability barrier and contribute to infrastructure deployment gaps as well.

The covered populations who reported affordability challenges the most were incarcerated individuals, individuals with disabilities, and households making less than 150% the poverty line—herein referred to as covered households—as expanded on in Section 3.3.4. To serve these people and remove the above barriers, WVDED establishes Realizing Affordable Connectivity as the first major goal.

Objective 1.1: Increase enrollment in the ACP, contingent on the continued funding for the program.

Covered Populations Served:

1. Covered households
2. Veterans
3. Individuals with disabilities
4. Aging individuals over 60 years of age
5. The remaining populations when qualifying for ACP

KPI

The ACP data does not delineate between the different covered populations at the state level. However, there is alignment between the ACP and the Digital Equity Program as ACP's eligibility criteria has much overlap with the Digital Equity Program's covered populations. Because the ACP already serves many covered populations, WVDED is establishing an overall KPI for this goal to increase enrollment in ACP, contingent on continued funding for the program. WVDED will determine prioritized areas for ACP-related outreach to each of the covered populations by leveraging existing partnerships with organizations serving covered populations, census data, and internally developed metrics (see Section 5.1.2). Approximately 368,000 West Virginian households are eligible for ACP.

> Baseline: 103,000 out of 368,000 households, approximately 28.0% of ACP-eligible households are served by ACP.[13]

> Near-term target: Increase enrollment by approximately 50% to reach 150,000 households, prioritizing outreach to areas with many households of each covered population under the Digital Equity Program.

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[13] Universal Service Administrative Co. ACP Enrollment and Claims Tracker: https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker.

Long-term target: Increase enrollment to reach a total of 68% of eligible households covered, or 250,000 households, prioritizing outreach to areas with many households of each covered population under the Digital Equity Program.

Objective 1.2: A central goal of West Virginia's BEAD planning is to provide universal broadband to all West Virginians. As such, the goals to complete broadband deployment as a part of the BEAD Five-Year Action Plan to service hard-to-reach areas, provide high quality broadband service to people in need, increase the number of available internet service providers, and increase competition among internet service providers for the benefit of consumers will benefit West Virginia's covered populations in an equitable manner and remove their infrastructure deployment gaps.

Covered Populations Served:

All 8 covered populations are served by this objective.

KPI

Accomplish broadband infrastructure deployment goals included in the Five-Year Action Plan.

② Secure Device Access and Affordability

The digital divide in West Virginia extends beyond broadband service into the field of device ownership. Using data from the U.S. Census Bureau and the American Community Survey, the number of West Virginians without a computer can be estimated between 12% to 14.4% from 2019 to the present. This can be caused by barriers such as rural isolation from device distributors, lack of technical knowledge, and perceived high costs of devices. Goal 2 Secure Device Access and Affordability lays out the methods by which WVDED will remove these barriers.

By providing available, affordable broadband connectivity and devices, West Virginians will be fully equipped with the tools to overcome the digital divide. A few key components remain to bring all West Virginians fully into the digital age: the know-how to take advantage of their new digital opportunities and institutions to support them in their endeavors. See the next goal for how WVDED will cover these remaining gaps.

Objective 2.1: Create a sustainable program to provide device distribution, lending, and recycling.

Covered populations served:

All 8 covered populations are served by this objective.

KPI

Census data has shown device ownership to be a significant gap in West Virginia. By implementing a program to increase the number of individuals in West Virginia who have access to a device that can connect to the internet, West Virginia can move further ahead into the digital age.

To ensure covered populations are equitably represented and served, WVDED will prioritize outreach to communities with large amounts of covered populations, leverage existing partnerships with

organizations serving covered populations, and monitor KPIs for each of the covered populations. Currently available data sets do not delineate between covered populations at a granular enough level to establish immediate baselines for each. As with other KPIs that baseline data cannot presently be established for on a covered population level, WVDED will collect the necessary data to establish a baseline and then monitor the progress of these efforts in subsequent years.

Baseline: 85.6% of the State has access to a computing device at home[14].

Near-term target: Increase baseline by 10%, ensure approximately proportional increases for each covered population.

Long-term target: 95% of West Virginias have access to a computing device that can connect to the internet, devices are easier to procure, and device proliferation among covered populations has been significantly increased.

Objective 2.2: Ensure citizens receive technical assistance for their newly acquired devices.

Covered populations served:

All 8 covered populations are served by this objective.

KPI

Increase the number of Community Anchor Institutions (CAI) that offer digital navigator programs, working with organizations who serve covered populations to equitably represent CAIs that serve each of the covered populations. The baseline is not yet determined, as WVDED has prioritized research into the needs of West Virginians and the benefits of providing technical assistance through these means. Concrete plans have been laid out to establish a clear baseline after NTIA approval. An assessment, largely carried out through extensive outreach to West Virginia CAIs and partnership input, will commence after NTIA approval, in the earliest stages of implementation planning.

Baseline: Overall baseline to be determined based on an assessment of CAIs that offer digital navigator programs. Separate "population CAI" baselines are in development through existing partnerships with organizations serving each of the covered populations.

Near-term target: Increase the baseline figure by 20% and ensure at least approximately proportional increases in each covered population.

Long-term target: Increase the near-term target by 30% and ensure at least approximately proportional increases in each covered population.

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[14] U.S. Census Bureau, "American Community Survey 2021 5-Year Data (2009-2021)", https://www.census.gov/data/developers/data-sets/acs-5year.html.

③ Elevate Digital Skills and Accessibility of Public Services and Economic Opportunity

Many West Virginians cite lack of technical knowledge and challenges using government websites as barriers to technology use and employment of state government services. This lack of technical knowledge is often worsened by other experience-preventing barriers such as lack of available broadband, lack of device ownership, rural isolation, and affordability issues.

Covered populations most likely to be affected by these barriers in WVDED research include incarcerated and previously incarcerated individuals, rural residents, English learners, individuals with disabilities, and covered households. Challenges using public and government websites was the third-most reported barrier overall in RPDC listening sessions; see Section 3.3.1 for more details on the listening sessions. To promote digital skills and accessibility, WVDED establishes Goal 3 Elevate Digital Skills and Accessibility of Public Services and Economic Opportunity.

Objective 3.1: Make digital literacy training in cybersecurity, privacy, telehealth, and more, available to all West Virginians, including all covered populations.

Covered Populations Served:

All 8 covered populations are served by this objective.

KPI

Increase the percentage of individuals in West Virginia with beginner-level digital skills by assessing internet use activities for each demographic via a randomized survey (see Section 4.2.7) and ensure that each covered population is equitably represented.

> <u>Baseline</u>: Overall – 88%
>
> Covered households – 84%
>
> Racial and ethnic minority – 90%
>
> English Learners and Individuals with Low Literacy Level – 87%
>
> Individuals with Disabilities – 86%
>
> Incarcerated Individuals – 88%
>
> Individuals Over 60 Years of Age – 86%
>
> Rural Residents – 88%
>
> Veterans – 90%
>
> <u>Near-term target</u>: Increase the overall baseline figure by 7% and ensure approximately proportional increases in each covered population.

Long-term target: 95% of West Virginias have basic digital skills, can streamline their lives with online services, and can fully take advantage of new opportunities brought about by the BEAD and Digital Equity Programs.

Objective 3.2: Ensure websites and online services hosted by state agencies are accessible for all West Virginians by implementing accessibility standards.

Covered Populations Served:

All 8 covered populations are served by this objective.

KPI

Increase the number of public services in West Virginia that meet the Web Content Accessibility Guidelines (WCAG) and Section 508 Standards. The baseline is not yet determined, as WVDED has prioritized research into the needs of West Virginians and the benefits of web accessibility in the West Virginian context. Concrete plans have been laid out to establish a clear baseline after NTIA approval. An assessment of West Virginia government website compliance under the WCAG and Section 508 Standards will commence after NTIA approval, in the earliest stages of implementation planning.

Baseline: To be determined based on an assessment of all government websites and services.

Near-term target: Ensure that at least 75% of state agency-operated websites are compliant.

Long-term target: Ensure that 100% of state-owned websites are compliant.

2.2 Alignment with Existing Efforts to Improve Outcomes

Through its research, WVDED did not find stand-alone Digital Equity Plans among its municipal or county governments, or regional entities. Also, as previously noted in Section 1.2, there are no federally recognized Native American tribes in West Virginia. While none of the 160 reviewed plans, programs, and initiatives were designed as digital equity plans, many addressed some gaps to digital equity as part of a larger goal, providing resources for digital equity gaps and indicating that West Virginia understands digital equity as an emergent, increasingly important element of comprehensive planning.

West Virginia's Digital Equity Plan offers a unique opportunity for statewide entities that support covered populations to unite under a single vision for achieving digital equity. The five goals and strategies outlined in the previous section were developed to coordinate with state, local, and regional plans, programs, and initiatives related to digital equity. WVDED reviewed 160 plans, programs, and initiatives. Of these, 35 included elements relating to digital equity. Figure 3 illustrates the number of plans that addressed each of the following primary digital equity elements or subjects:

- Digital Equity
- Connectivity
- Workforce Development
- Economic Development
- Community Benefit
- Telehealth
- Other Digital Equity or Broadband-related concepts

For instance, 11 plans discussed the topic of "Connectivity" to some degree.

Figure 3: Number of State, Local, and Regional Plans that Addressed Select Digital Equity Subjects
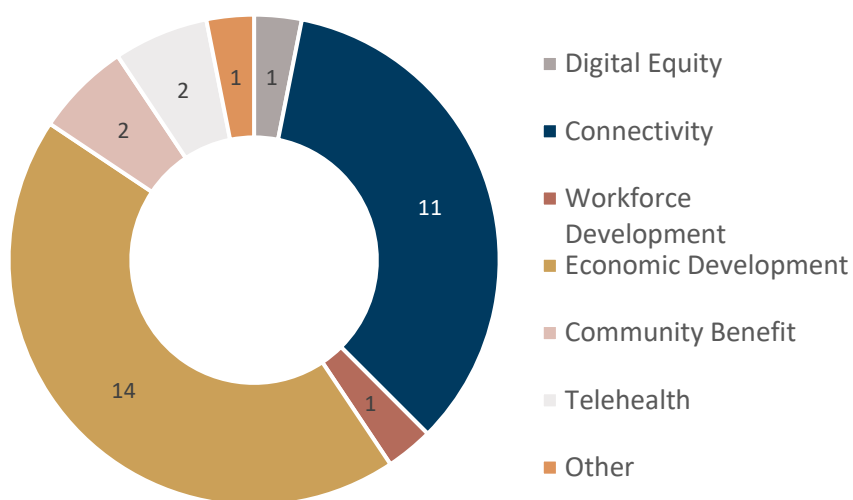
West Virginia's Digital Equity Plan aligns with existing state priorities while stimulating new efforts in economic and workforce development, health, education, civic and social engagement, and other essential services.

The following subsections detail the state, local, and regional priorities that align with West Virginia's Digital Equity Plan:

1. Economic Development
2. Workforce Development
3. Education
4. Healthcare, and
5. Civic and Social Engagement

The remainder of this section provides a summary of the takeaways from reviewing the plans, including key subjects related to digital equity, and high-level interactions with the West Virginia Digital Equity Plan's objectives, followed by information on coordination with relevant entities. For detailed information about the plans and strategies reviewed, please refer to Appendix A.3 Complete List of Relevant Plans & Strategies.

Economic Development

State of West Virginia 2020-2024 Consolidated HUD Plan: The U.S. Department of Housing and Urban Development (HUD) requires the State of West Virginia to produce a five-year strategic plan detailing housing, community needs, and how funds are to be used.

Measurable outcomes:

- Support the development of viable infrastructure systems (such as water, sewer, storm water, and broadband) to improve living conditions and bolster economic development.[15]
- Provide ready access for household connections, in low- and moderate-income households and neighborhoods, which can help expand connectivity to the residents and communities with the greatest need. [16]
- Improve quality of life by enhancing public facilities and eliminating factors that affect environmental quality or public health through activities such as mitigating blighted and abandoned properties, supporting the remediation of brownfield sites, and enhancing parks and recreational facilities.[17]

This HUD Plan promotes economic development, including broadband access, for all West Virginians, including all covered populations. This plan also supports the **delivery of other essential services**, such as utility services, to all West Virginians, including all covered populations. This plan will aid Goal 1 Objective 1.2 by supplementing broadband infrastructure and connectivity availability.

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[15] West Virginia Development Office, West Virginia Housing Development Fund, "State of West Virginia 2020-2024 Consolidated Plan," https://www.wvhdf.com/wp-content/uploads/2020/08/2020-2024-ConsolidatedPlan-and-FY-2020-Annual-Action-Plan.pdf, page 3
[16] Id., page 152
[17]Id., page 2

[West Virginia FY 2022 Appalachian Regional Commission (ARC) Development Plan](#): The State of West Virginia submits a four-year State Development Plan to the Appalachian Regional Commission, which provides an overview of WV's economy, needs and opportunities in the state, and the governor's goals for the West Virginia ARC program.

Measurable outcomes:

- Increase access and adoption of broadband.[18]
- Increase access of broadband for individuals by creating or enhancing existing community computer and digital learning centers.[19]
- Support e-commerce initiatives that educate businesses about the benefits of broadband.[20]
- Deliver training to increase use of technology by businesses and residents, and support technology education to increase the adoption of broadband by businesses and residents.[21]
- Expand and strengthen community systems (education, healthcare, housing, childcare, and others) that help Appalachians obtain a job, stay on the job, and advance along a financially sustaining career pathway.[22]

This ARC Plan promotes economic development, including broadband access, for all West Virginians, including all covered populations. This plan also supports the **delivery of other essential services**, such as utility services, to all West Virginians, including all covered populations. This plan will aid the Goal 1 Objective 1.2 by supplementing broadband infrastructure and connectivity availability. The technology training component of this plans will help raise Goal 3 Objective 3.1 from the baseline by increasing digital literacy and the proliferation of digital skills.

[Regional Planning and Development Councils Comprehensive Economic Development Strategies](#): Each year, each of West Virginia's 11 RPDCs must prepare or update its Comprehensive Economic Development Strategy (CEDS) for submission to its members: ARC, the U.S. Economic Development Administration, WVDED, and the public. The CEDS offers strategic planning, focusing on factors critical for economic advancement in the regions.

Measurable outcomes:

- The RPDC CEDS include goals and objectives related to improving affordable high-speed internet access in underserved communities, supporting public service campaigns promoting enrollment in low-income internet affordability programs, and publishing and promoting wireless Wi-Fi hotspot locations.
- Several RPDCs have developed Broadband Strategic Plans with detailed strategies for developing network infrastructure to close regional broadband gaps and drive broader community and economic development.

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[18] West Virginia Department of Economic Development, "West Virginia FY 2022 Appalachian Development Plan," https://www.arc.gov/wp-content/uploads/2022/02/West-Virginia-ARC-4-YR-Plan-FY-2022.pdf, page 11
[19] Ibid.
[20] Ibid.
[21] Id., page 15
[22] Id., page 23

These RPDC Plans promote economic development, including broadband access, for all West Virginians, including all covered populations. These plans offer alternatives to ACP enrollment, a key factor of Goal 1 Objective 1.1, promoting a diverse field of broadband affordability methods in West Virginia. The broadband availability component of these plans will supplement deployment efforts of Goal 1 Objective 1.2.

A Shared Agenda for Growing West Virginia's Agricultural Economy: The West Virginia Department of Agriculture and the WVU Extension Service partnered to publish a long-term plan for maximizing West Virginia's agricultural economy.

Measurable outcomes:

- "….. with technological improvements and access to new markets, there is a huge opportunity to better support farmers, including by supporting efforts to increase broadband access."[23]
- Strategic actions outlined in the report include becoming involved with various groups advocating for and advising on broadband initiatives and partnering with other organizations for funding opportunities.[24]

This effort promotes economic development primarily for rural residents, which make up 90% of West Virginia's population. This effort also promotes the **delivery of other essential services** for all West Virginians, including all covered populations. By supporting broadband access, this effort will supplement broadband deployment efforts of Goal 1 Objective 1.2.

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[23] West Virginia Department of Agriculture, West Virginia University Extension Service, "A shared agenda for growing West Virginia's Agricultural Economy," http://www.wvagadvisory.org/wp-content/uploads/2020/10/WVAg-Full-Report-Version-03.2020.pdf, page 5

[24] Id., page 59

Workforce Development

West Virginia's Apprenticeships in Motion Program (AIM): The AIM Program promotes and expands registered, nontraditional apprenticeship activity in West Virginia. This collaborative group of partners identifies, standardizes, and develops courses for registered apprenticeship programs.

Measurable outcomes:

- Provides technical education and hands-on training from experienced professionals.
- Offers graduates a National Certification of Completion of Apprenticeship and an associate degree.

This program promotes workforce development for all West Virginians, including all covered populations. This program is aligned with Goal 3 Objective 3.1 and will help to raise the KPI from baseline toward its goal by promoting digital skills.

Education

West Virginia Department of Education 2021 Strategic Plan: Goal 1, Objective 3 of the West Virginia Department of Education's 2021 strategic plan highlights the necessity to address students' broadband-related needs. This will involve providing ways for students without home access to connect to the internet and developing innovative practices for device training.

Measurable outcomes:

- Develop a Statewide Technology Survey to determine students' and school staff members' current home technology access.[25]
- With KidsConnect[26], provide internet access by placing hotspots in outdoor areas near schools and other public areas.
- Assist counties with the E-Rate application process to maximize funds for school connectivity costs.[27]
- Systems training offered to students and educators to ensure readily available resources and accessibility for the West Virginia education system.[28]
- Recycle and upgrade technology from state agencies to donate to schools through the secondlaunch Program.[29]

This plan promotes education for all West Virginians, including all covered populations. This plan will help to fill deployment gaps, supplementing Goal 1 Objective 1.2's activities.

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[25] West Virginia Department of Education, "West Virginia Department of Education 2021 Strategic Plan," https://wvde.us/wp-content/uploads/2022/03/WVBE-StrategicPlan-MARCH2022-Update-Goal1-Obj3-v4.pdf, page 3
[26] Id., page 6
[27] Id., page 6
[28] Id., page 7
[29] Id., page 7

West Virginia's Climb: West Virginia's Climb is a collaborative campaign to equip 60% of West Virginians with a Certificate or Degree by 2030.

Measurable outcomes:

- Access to no- or low-cost course materials from Open Learning West Virginia.
- Savings to date are over half a million dollars, impacting 4000 students.

This program promotes education for all West Virginians, including all covered populations. This program will promote the proliferation of digital skills in West Virginia, accelerating completion of Goal 3 Objective 3.1.

West Virginia Emergency Connectivity Fund: The Federal Communications Commission's (FCC) Emergency Connectivity Fund Program covers 100% of the reasonable costs of laptops, tablets, Wi-Fi hotspots, modems, routers, and broadband connectivity purchases for off-campus use by students, school staff, and library patrons.

Measurable outcomes:

Cover the costs of internet connections and devices for off-campus use by students, school staff, and library patrons. The Emergency connectivity fund supports:

- 93,129 total connections
- 23,750 total devices.[30]

This fund promotes education to all West Virginians, including all covered populations. By supplying West Virginians with devices, the fund will help to supplement device distribution activities under Goal 2 Objective 2.1.

Healthcare

West Virginia Health Information Infrastructure (HIT): Broadband Availability for Health Care Programs in West Virginia: The West Virginia Healthcare Authority published a report on broadband infrastructure for health care programs in West Virginia.

Measurable outcomes:

The report recognizes the value of broadband expansion for:

- remote diagnosis, treatment, monitoring, and consultations with specialists through telemedicine[31]

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[30] Federal Communications Commission, "Emergency Connectivity Fund", "total ECF broadband connections and connected devices by state", https://www.fcc.gov/emergency-connectivity-fund. Accessed July 7, 2023.
[31] West Virginia Healthcare Authority, "West Virginia Health Information Infrastructure (HIT): Broadband Availability for Health Care Programs in West Virginia,"
https://hca.wv.gov/policyandplanning/br/Documents/Broadband_Report_11.pdf, page 1

- health care interventions and treatments in areas lacking advanced diagnostic capabilities and specialty services[32]
- leveling the playing field between urban and rural medical capabilities[33]
- remote access to electronic health records for providers which will improve patient health outcomes[34]

This program promotes healthcare to all West Virginians, including all covered populations. By formally recognizing the value of, expressing support for, and describing future plans related to broadband expansion, the HIT plan will provide new opportunities by deployment activities conducted under Goal 1 Objective 1.2. Specifically, much of HIT's telehealth goals will come to fruition.

Maternal and Child Health Services Title V Block Grant: This report includes information about the components of the Fiscal Year 2020 Application and Fiscal Year 2020 Annual Report Maternal and Child Health Services Title V Block Grant. The Children with Special Health Care Needs (CSHCN) Program Director of Nursing and the WV CSHCN Registered Dietician are developing procedures for a blended model of virtual telehealth and direct clinics. West Virginia's rurality and topography impede the healthcare access of many; telehealth mitigates this major health care inequity.

Measurable outcomes:

- Supporting the medical home's capacity for electronic health information and exchange; and
- Facilitating access to comprehensive home and community-based supports. [35]

This program promotes healthcare to all West Virginians, including all covered populations. Activities conducted under Goal 1 Objective 1.2 will provide these services enhanced telehealth capabilities.

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[32] Ibid.
[33] Ibid.
[34] Id., page 12
[35] West Virginia Office of Maternal, Child, and Family Health, "Maternal and Child Health Services Title V Block Grant," http://www.wvdhhr.org/mcfh/files/MCFH_Block_Grant_2022.pdf, page 165

West Virginia Library Commission Annual Report 2022: The Commission's mission is to enhance the capacity of public, academic, and school libraries to deliver resources, programs, and services that support learning for West Virginians. The report describes the goals and programs currently underway.

Measurable outcomes:

- Ensures library staff, state employees, and all citizens have access to reliable information in various formats.[36]
- Annual Summer Learning Programs offering both in-person and online options for additional learning opportunities.[37]
- West Virginia libraries provide residents access to employment, education, and other essential internet-based services and resources to foster ongoing success across the community.[38]

The Library Commission serves all West Virginians, including all covered populations. By offering education opportunities, The Library Commission is aiding the proliferation of digital skills, which will accelerate completion of Goal 3 Objective 3.1.

West Virginia University, Reed College of Media NewStart: WVU's NewStart program seeks to "recruit, train, and support the next generation of community newspaper owners across the county." The program offers a fellowship that matches people interested in owning local publications with sellers. Through the program, buyers are trained in how to manage, operate, and grow the business. This program can contribute to digital equity since accessing local newspapers online is an effective way for individuals to engage with their community using digital skills.

NewStart promotes civic and social engagement for all West Virginians, including all covered populations.

2.3 Interactions, Incorporations, and Coordination with Existing Efforts

Even if there are no direct digital equity plans at the municipal or regional level, and no tribal populations from which to devise plans, each of the above initiatives is effective in promoting digital equity by its own metric; WVDED commends the efforts of all involved.This section details some of the ways in which the above efforts are made relevant within the sphere of Digital Equity in West Virginia. As engagement with stakeholders and coordination with other organizations plays a major role in this endeavor, Section 4 presents a more comprehensive and detailed look into these activities.

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[36] West Virginia Library Commission, "West Virginia Library Commission Annual Report 2022," https://librarycommission.wv.gov/Who/Documents/2022%20Annual%20Report.pdf, page 3
[37] Ibid.
[38] Id., page 8

The above digital equity-intersecting efforts will not be directly coordinated under the State Digital Equity Plan. They will instead run in parallel to the State Digital Equity Plan, their contributions will be incorporated into the routine measurement of the State Plan's progress, and their administering entities will be kept in close communication when appropriate. WVDED has already involved several of the above administering entities in this Plan's development, such as HUD, the West Virginia Department of Education, and the 11 RPDCs. The Core Planning Team coordinated with these organizations for their strategic guidance and insight on digital equity planning. Whenever possible, WVDED keeps close partnerships with and conducts outreach to entities contributing to digital equity; see Section 4.2 for details.

The State is also engaged in broader regional planning efforts with ARC. In 2021, the United States Economic Development Administration and ARC awarded Regional Optical Communications (ROC) grant funds to create a set of high-level broadband designs and conduct cost analysis for broadband expansion across the State's counties. In anticipation of the BEAD and Digital Equity programs, WVDED strongly supported this grant funding. These high-level designs provided WVDED with an overview of what types of broadband projects would be necessary to provide full coverage to each county and were subsequently used to generate a cost estimate to bring universal broadband to West Virginia. This mapping initiative and its concurrent public outreach strategy are leveraged as part of the State's BEAD and Digital Equity implementation plans. For further information on WVDED's involvement with ARC programs see West Virginia's BEAD Plan.

Technical assistance is another avenue by which WVDED keeps alignment with digital equity contributors. Already, technical assistance has been provided to attendees of the following events, guiding BEAD and digital equity strategies, and maintaining alignment:

1. Small Communities, Big Solutions Conference in November 2022
2. Monthly Workforce Development Council meetings beginning in January 2023
3. Internet For All West Virginia Kickoff Conference in February 2023
4. West Virginia Broadband Summit in July 2023

WVDED is committed to continued technical assistance throughout Digital Equity Plan implementation through public forums and by offering resources such as:

1. Webinars announced via the Internet for All website and other means
2. In-person presentations at community anchor institutions
3. Future broadband summits akin to the July 2023 West Virginia Broadband Summit

By keeping close communication with partners, conducting frequent outreach, and providing opportunities for technical assistance, WVDED will maintain aligned efforts with other digital equity contributors. This strategy is also being employed for coordination with the entities listed in the asset inventory, Section 3.2.

3. Current State of Broadband and Digital Inclusion

West Virginia's Digital Equity Plan provides an inventory of existing digital equity related assets. Assets are identified as current resources, programs, and strategies—both public and private. The WVDED intends to leverage existing resources as it pursues its digital equity mission. The inventory was conducted in parallel with an analysis of broadband infrastructure, as detailed in Section 3 of the BEAD Five-Year Action Plan. Section 3 of the Five-Year Action Plan should be viewed as complementary to this section and read in parallel for further information about broadband deployment.

For this section, digital equity and "digital inclusion" should be considered interchangeable in the same manner that NTIA does in its Digital Equity Plan Guidance document.

This chapter is divided into two subsections. Subsection 3.1 analyzes current broadband affordability and adoption in West Virginia, examining it in the aggregate rather than looking at individual populations. Section 3.2 details the current state of digital equity as it relates to specific populations, as well as the methodology for information collection informing much of Section 3. Section 3.1's analyses of affordability, adoption, digital skills, and accessibility were all informed by the aforementioned "information collection." Additionally, Section 3.2 examines the state of digital equity on a population-by-population basis and notes the impact on West Virginia as a whole.

3.1 Broadband Access, Adoption, and Affordability

Broadband access, adoption, and affordability form the foundation of digital equity. All other facets of digital equity are dependent on these three pillars. This section examines the three pillars' impact on West Virginians.

The data analysis in subsection 3.1 uses state and federal sources, accompanied by interpretations based on modeling the underlying information. For example, the WVDED utilized data from the ACP to create a likely minimum number for statewide affordability estimates. To model adoption estimates, the WVDED relied, in part, on data from the American Community Survey, 2021.

3.1.1 Adoption and Access

Broadband adoption and access are closely related. For the purpose of Digital Equity planning, this section will focus on the barriers to broadband adoption faced by the general population and the covered populations in West Virginia. Access to a broadband connection is detailed thoroughly in the BEAD Five-Year Action Plan, Section 3. Digital Equity Plan Section 3.1.1 Adoption and Access will focus on the conditions of access that prevent or reduce broadband adoption.

Granular data regarding broadband adoption, such as having access to a broadband connection but choosing not to use the service, is not readily available in West Virginia. Therefore, the WVDED has developed some modeling (described in subsequent sections) to detail barriers to broadband access and adoption.

Access to a Broadband Connection (Summary of the Five-Year Plan Section 3)

Approximately 311,953 Broadband Serviceable Locations in the State are considered unserved or underserved.[39] Of these, 146,462 are considered part of a project with an enforceable federal, state, or local commitment and therefore, may not be eligible for BEAD funding.[40] This leaves the remaining 16% of all Broadband Serviceable Locations underserved.

West Virginia ranks 47th out of 52 states and territories in terms of the percentage of population with internet access, highlighted in Figure 4. The State has committed significant effort and resources to bridge the access gap by funding the expansion of broadband infrastructure. (Please refer to the Five-Year Action Plan for additional BEAD-related planning details.)

Figure 4: Calculated Percentage of Households Without Internet Access (by state)
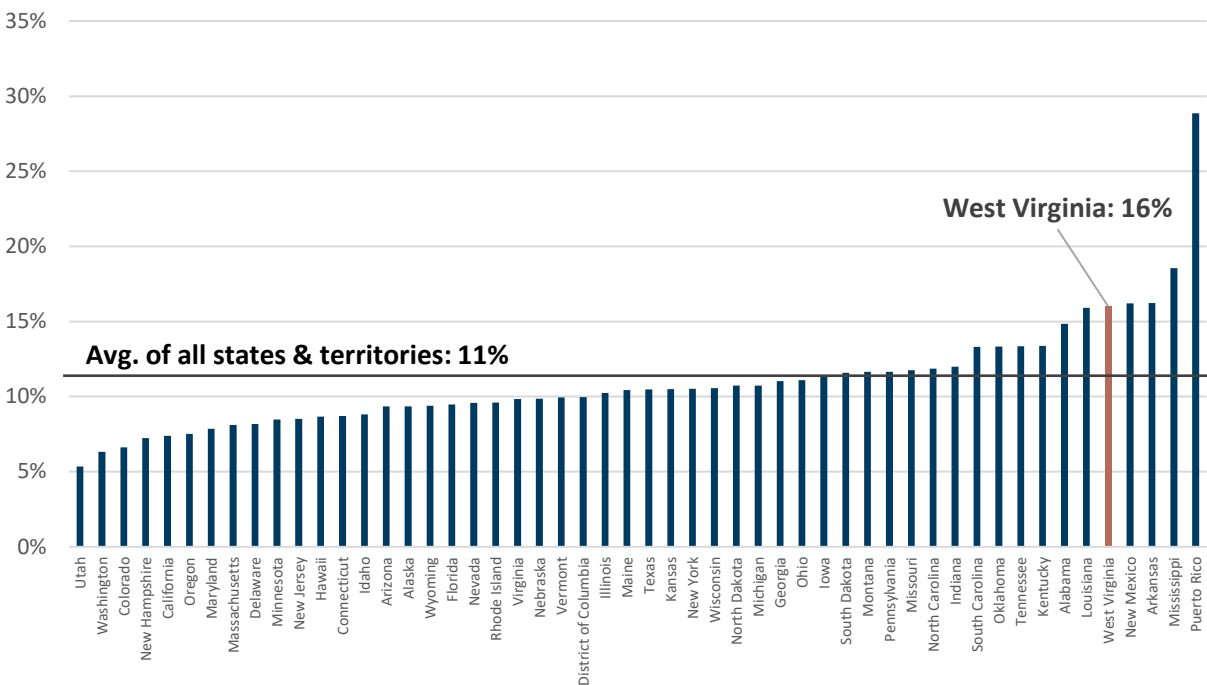
Source: B28002. American Community Survey 2017-21. ACS 5-Year Estimates Detailed Tables

Access to an internet-enabled device

The U.S. Census Bureau's American Community Survey (ACS)[41] provides insight into the types of computing device(s) West Virginians own. For the purpose of this plan, laptops, desktops, smartphones, tablets, and other wireless computing devices will be referred to as a "computer." According to the 2021

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[39] Calculated using National Broadband Availability Data provided by the Federal Communications Commission, available at https://broadband477map.fcc.gov/#/data-download.
[40] Ibid.
[41] U.S. Census Bureau, "American Community Survey 2021 5-Year Data (2009-2021)", https://www.census.gov/data/developers/data-sets/acs-5year.html.

estimates, only 88% of West Virginians own a computer, which leaves 12% without a computer. West Virginia is far behind the rest of the country; the average percentage of a state or territory with access to a computer is 92.4%, and the average without computer access is 7.6%. Figure 5 demonstrates this data.

Figure 5: Calculated Percentage of Households Without a Computer (by state)
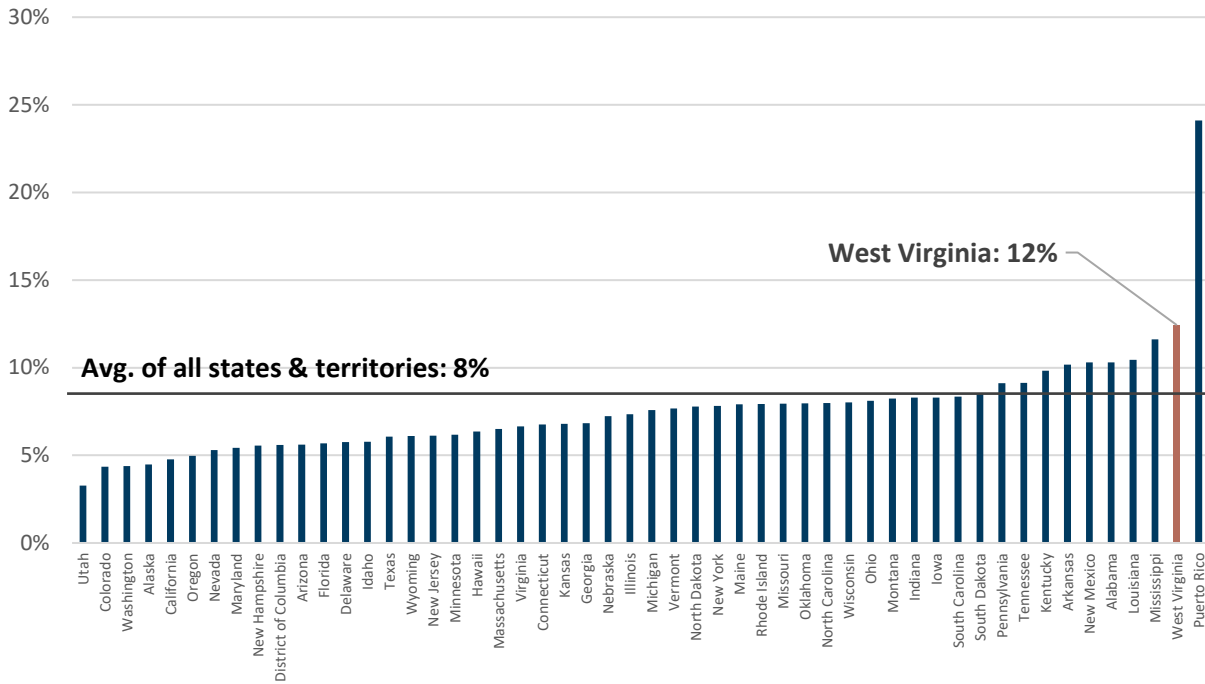
Source: B28003. American Community Survey 2021. ACS 5-Year Estimates Detailed Tables

Access to a computer with an internet connection in West Virginia is 79.5% versus the national average of 86.3%. These and other analyses of computer ownership are detailed in Table 1. Additionally, Table 4 in Appendix A.2 Supplementary Tables provides an expanded set of these figures, including differentiation between types of computing devices.

Table 1: People Who Own a Computer in West Virginia and the United States

Category	United States		West Virginia		Difference in %
	Estimate	%	Estimate	%	
Total:	**124,010,992**		**711,352**		
Has a computer:	115,397,459	93.05	622,923	87.57	-5.48
With dial-up Internet subscription alone	265,164	0.21	2,236	0.31	0.10
With an Internet subscription	106,957,995	86.25	565,270	79.46	-6.79
Without an Internet subscription	8,174,300	6.59	55,417	7.77	1.18
No computer	8,613,533	6.95	88,429	12.43	5.48

Source: B28003. American Community Survey 2021. ACS 5-Year Estimates Detailed Tables

Computer and computing device ownership is not evenly distributed across the State. Based on anecdotal evidence, rural areas typically lack access to a computer more often, as highlighted by Figure 6. The data does not provide details about whether individuals in these areas access computers through other means, such as CAIs.

Figure 6: Households with No Computer or Computing Device in West Virginia by County
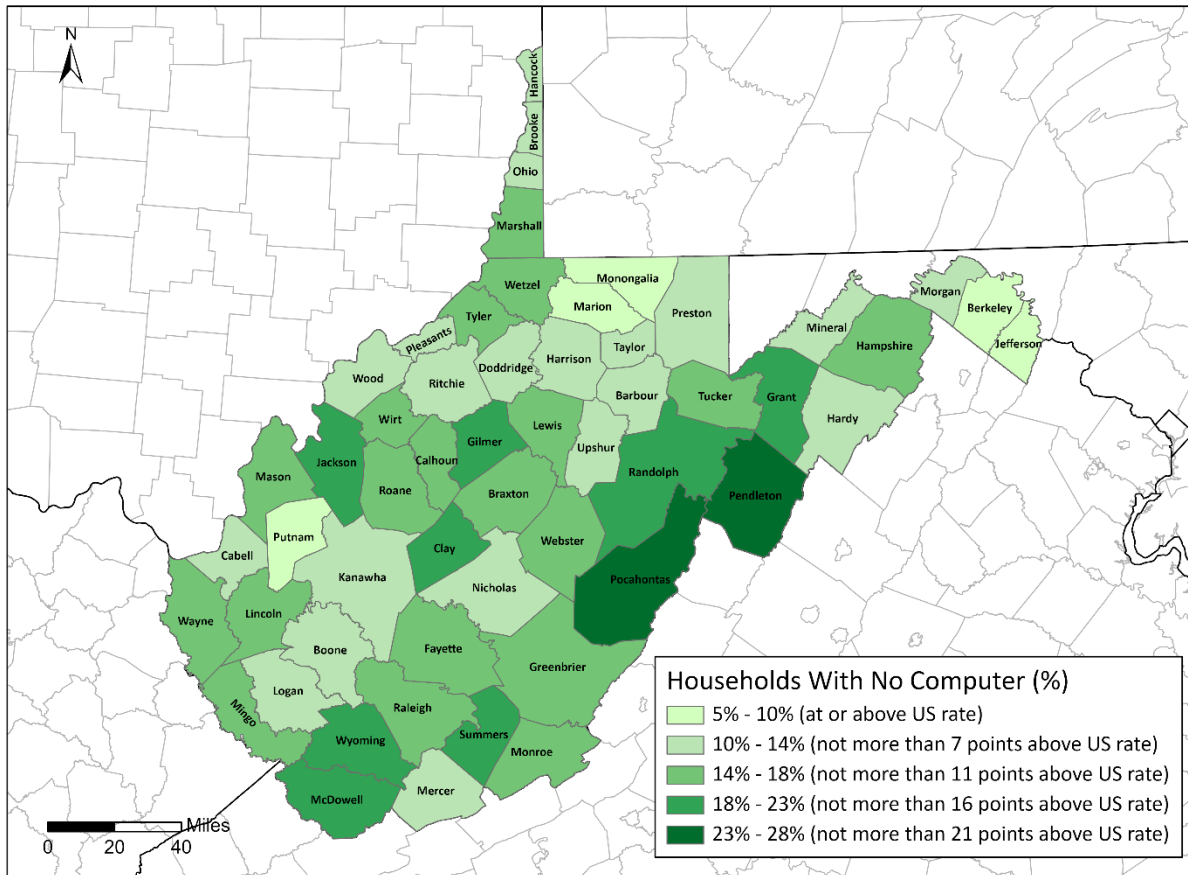
Source: B28003. American Community Survey 2021. ACS 5-Year Estimates Detailed Tables; Map generated by Tilson Technology.

Data on lack of household access to a computer in rural areas paints a similar picture to data on households that lack internet access (Figure 7). For expanded discussion on this data, see Section 3 of West Virginia's BEAD Five-Year Action Plan. It is not clear which specific factors are barriers to adoption. Although, potential factors may include cost of computer ownership, cost of internet access, lack of interest in owning a computer, and/or an absence of digital skills. To better understand all the factors impacting adoption, WVDED facilitated a statewide survey targeting residents. See Section 3.3.2 for more details.[42]

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[42] WVDED has procured service from Thomas P. Miller & Associates (TPMA) to conduct the survey. As of the drafting of this plan, the survey is still under development and being planned for distribution.

Figure 7: Households Without Access to Internet in West Virginia by County
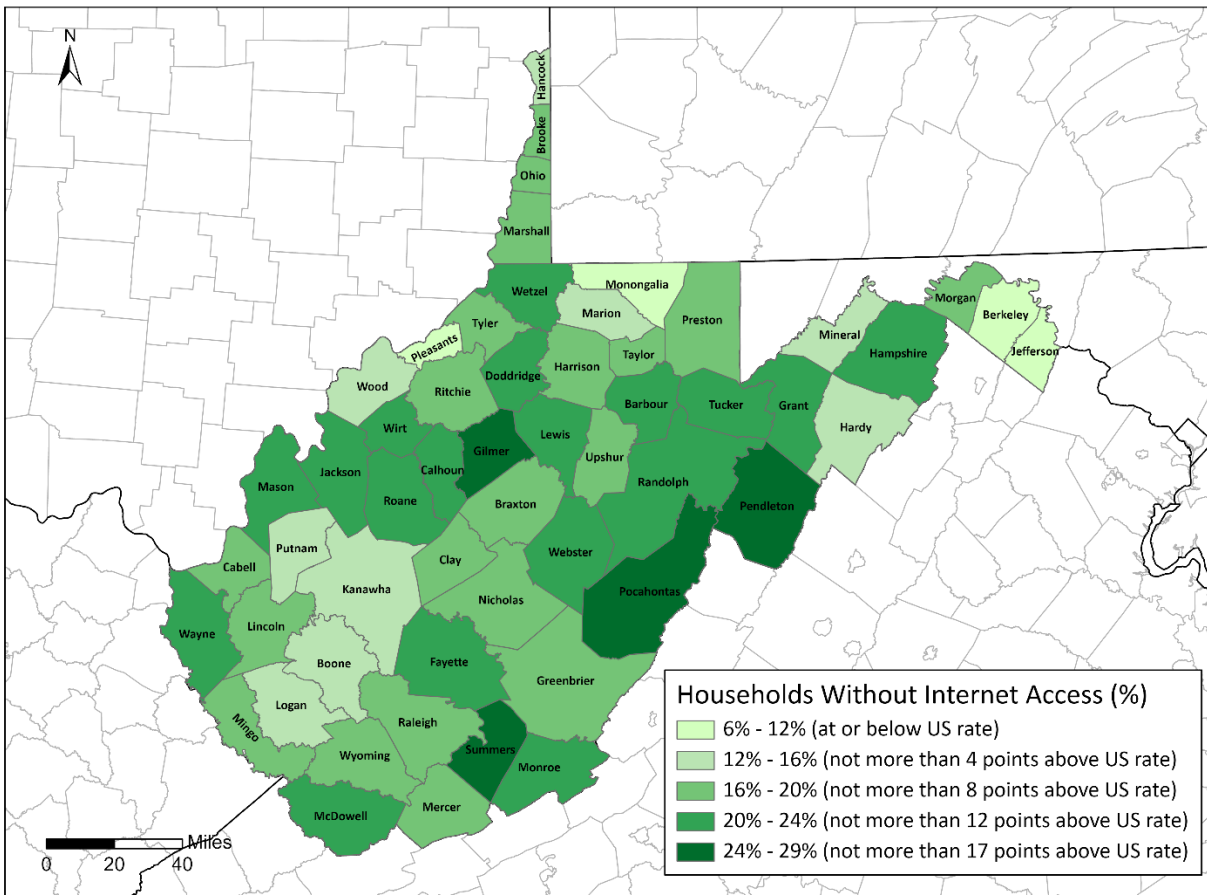
Source: B28003. American Community Survey 2021. ACS 5-Year Estimates Detailed Tables; Map generated by Tilson Technology.

Access and Community Anchor Institutions

Community Anchor Institutions (CAIs) play an important role in providing internet access until service and devices are available and affordable for West Virginians.

In West Virginia, CAIs often serve as internet access points, technology hubs, and training centers. However, not all CAIs are conveniently located. They also may not be equipped with computers, gigabit internet service, or skilled staff to provide training and technical support.

West Virginia's Digital Equity Plan will rely on CAIs for access and skills development. WVDED will work with communities to identify the organizations that meet their needs and evaluate how they fit the CAI categories identified by NTIA: public schools, public or multi-family housing authorities, libraries, medical or healthcare providers, community colleges and other institutions of higher education, the state library agency, and other nonprofit or governmental community support organizations.

3.1.2 Affordability

Despite West Virginia's significant progress in broadband deployment, the cost of high-speed broadband internet service remains a significant barrier to adoption. According to a national survey by The Pew Research Center, 45% of people without home broadband service mention the cost of connection as a barrier to access. 37% of this same demographic similarly mentioned the cost of a computer.[43] This is more pronounced in households earning less than $30,000 annually: 43% report no broadband service.[44] The lack of affordable internet access limits opportunities for education, healthcare, employment, and social connection, worsening the digital divide between the haves and have-nots. West Virginia's affordability gap is particularly pronounced in rural areas, where high deployment costs and limited competition have driven prices beyond affordability for the area's lower-than-average income households.

The Federal Affordable Connectivity Program (ACP) provides subsidy payments for internet subscriptions and internet-enabled devices for eligible, low-income households. The ACP is currently the primary program addressing affordability in West Virginia.

ACP eligibility requirements include:

1. households currently receiving Lifeline benefits
2. households with a child participating in the National School Lunch Program
3. households with a total yearly income less than or equal to 200% of the poverty line – equivalent to a yearly income equal or less than $60,000 for a family of four
4. household with at least one member participates in SNAP, WIC, SSI, or FPHA
5. households with a member currently receiving a Veterans Pension or Federal Pell Grant

The following lists some of the Internet Service Providers that operate in West Virginia, many of which participate in ACP[45]:

Entity	ACP participant?
Armstrong	Yes
Arx Web	No
Blue Devil Cable	No
Breezline	Yes
Charter	Yes
Citynet	Yes
Comcast	Yes
Community Antenna Services (CAS)	No
Frontier	Yes

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[43] Anna Read, "How Can the United States Address Broadband Affordability?," Pew Charitable Trust, https://www.pewtrusts.org/en/research-and-analysis/articles/2022/04/29/how-can-the-united-states-address-broadband-affordability, April 29, 2022

[44] The Pew Charitable Trust, "Broadband Challenges and Opportunities in Affordable Rental Housing," https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2023/04/broadband-challenges-and-opportunities-in-affordable-rental-housing April 2, 2023. Accessed: June 5, 2023

[45] USAC Affordable Connectivity Program, "Companies Near Me," https://www.affordableconnectivity.gov/companies-near-me/ Accessed July 11, 2023

Gigabeam	Yes
Glo Fiber	Yes
Hardy Telecommunications	Yes
HughesNet	Yes
Lynx	No
MCTV	Yes
Micrologic	Yes
Morgan Wireless	No
Optimum (Altice, Suddenlink)	Yes
Point Broadband	No
Prodigi	Yes
Shentel	Yes
SkyPacket	Yes
Spruce Knob Seneca Rocks Telephone	Yes
Starlink	Yes
Telegia	No
T-Mobile	No
USCellular	Yes
Verizon	No
Viasat	No

A lack of available data on household broadband pricing and adoption rates prevents the WVDED from precisely estimating the number of West Virginian households for whom broadband is unaffordable. However, WVDED sought to understand this issue by analyzing two data sets: existing affordability data primarily from the Affordability Connectivity Program (ACP) and information developed from statewide listening sessions organized and hosted by Regional Planning and Development Councils (RPDCs) on behalf of the WVDED (discussed in greater depth in Section 3.2).

To better understand West Virginia's affordability challenges, the WVDED estimated the number of households qualifying for ACP by examining ACP income requirements and state income data. As of May 2023, over 103,000 eligible households are enrolled in the program.[46] WVDED expects to have 250,000 eligible households enrolled in ACP by 2028 (contingent on continued program funding). The 2028 goal represents 68% of the State's eligible households (368,000)[47] or seven percentage points above the national best practice, as defined by EducationSuperHighway, a national non-profit organization working on digital inclusion and ACP Promotion.[48]

Data shows approximately 39% of West Virginia households qualify for ACP. This compares to 36% of qualified households nationwide. The 39% statistic provides a lower bound to the number of West Virginia

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[46] Universal Service Administrative Co. ACP Enrollment and Claims Tracker: https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/.
[47] In January 2023, using a method developed by the Institute for Local Self Reliance, WVDED calculated a lower bound of the number of West Virginian households qualifying for the Affordable Connectivity Plan. This estimation uses the household income qualification for ACP alone.
[48] EducationSuperHighway, Home Page, https://www.educationsuperhighway.org/, Accessed July 10, 2023.

households for whom broadband is unaffordable. Figure 8 provides a county-level estimate of West Virginia households with incomes that qualify them for ACP.

Figure 8: Households Qualifying for ACP Benefits in West Virginia by County
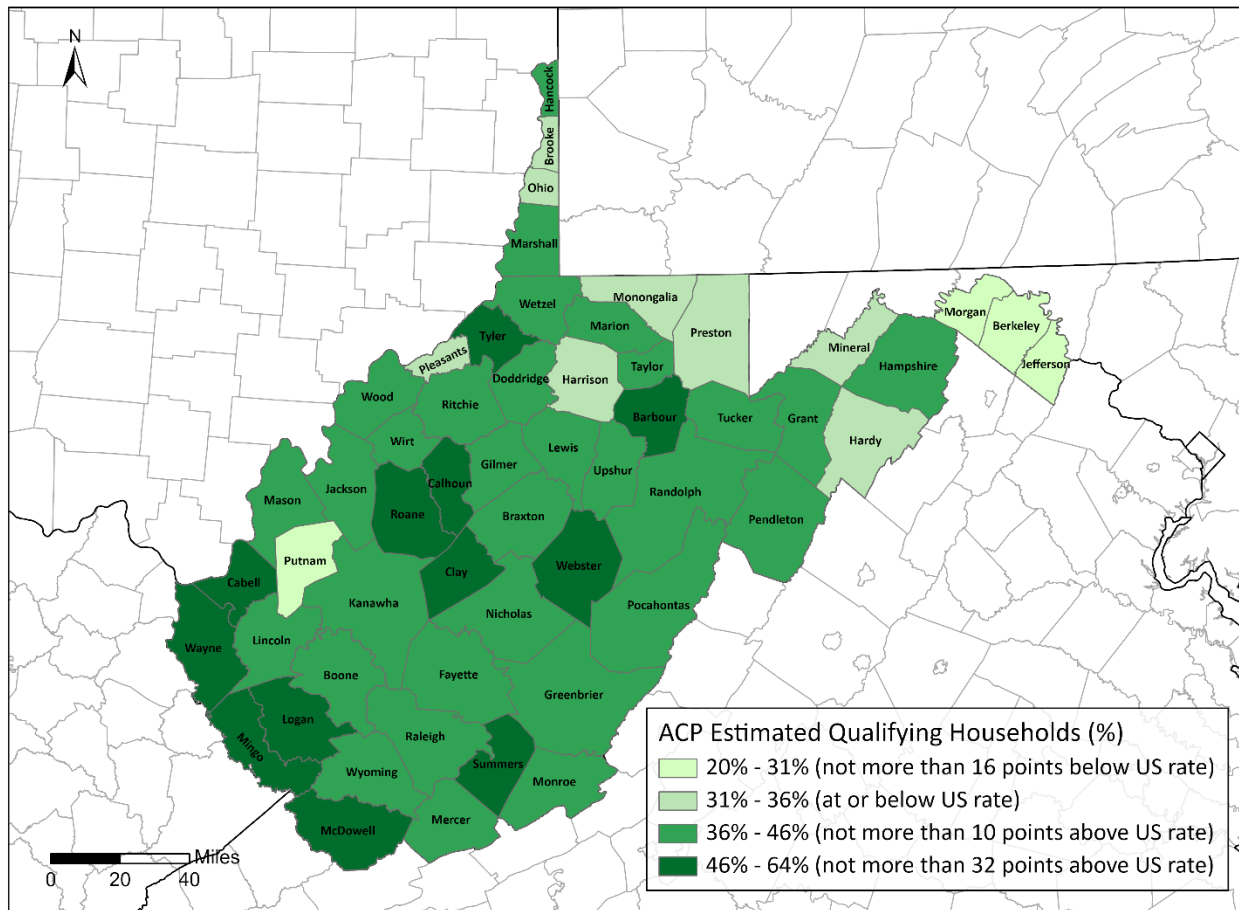
Source: Tilson Technology

RPDC Listening Session Participants (LSPs) echoed these findings. LSPs cited the cost of quality internet service as a significant barrier to adoption, especially for individuals living on fixed incomes or the per capita state average household income.[49] LSPs also emphasized poor internet quality relevant to cost, reporting service below the speeds to which they subscribed.

Attendees at 12 out of 14 Region 7 listening sessions and four out of eight Region 10 listening sessions cite the high cost of service as a barrier to access and adoption.

Some LSPs, struggling with housing insecurity, stated lack of a stable home as a deterrent to adoption. One LSP commented that it was more expensive to pay for high-speed internet services than TV, phone, and cable services combined.

Many LSPs described limited internet service provider options and the lack of perceived competition preventing them from receiving adequate service. They also noted that in many regions, the number of

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[49] Per capita income in past 12 months (in 2021 dollars), 2017-2021 $28,671, Quick Facts West Virginia, U.S. Census Bureau, https://www.census.gov/quickfacts/fact/table/WV/INC910221#INC910221.

subscribers is capped due to limited capacity on the provider's infrastructure. In these regions, there is a waiting list; an existing subscriber would have to cancel their subscription before the Internet Service Provider will accept a new customer.

LSPs also stated that data caps—a limit imposed on the amount of data that can be transferred over a network over the course of a certain time period—is a barrier to internet access. In many cases, data caps force households to closely monitor who uses the internet and for how long.

Listening Session feedback also noted the lack of internet service provider technical support and technician retention as barriers.

3.2 Asset Inventory

The WVDED, in collaboration with the Core Planning Team, conducted an inventory of existing digital equity programs and services. Methods for collecting and validating this information include:

1. Statewide listening sessions
2. One-on-one meetings with state cabinet secretaries, commissioners, and agency directors
3. Members of the Digital Equity Steering Committee
4. Outreach to organizations serving covered populations and
5. Paper and electronic surveys, including the West Virginia Digital Access and Equity (DAE) Survey

The DAE survey is designed to collect information regarding existing programs, activities, and skill-development opportunities in West Virginia. The survey was targeted to organizations representing or serving at least one of the eight covered populations.

During the life of the survey, from Mid-January 2023 to May 12, 2023, WVDED received fewer responses than it had hoped for. Despite this, the responses helped supplement information gathered from other sources, such as the state-wide survey. The 60-question survey focused on digital literacy, plans that overlap with the goals and objectives of the BEAD and Digital Equity programs, and broadband service subsidies. Please note that depending on the type of respondent, the survey asked different questions to reduce length and complexity. West Virginia rigorously marketed the survey but acknowledges the barriers preventing individuals from completing it. However, West Virginia was able to supplement the survey results with other data collections methods, for example: discussions with organizations that included the survey material. Importantly, these included meetings with internet service providers of various sizes that operate in West Virginia, including Armstrong, Micrologic, Citynet, Prodigi, GigaBeam, Comcast, and Frontier, as well as other stakeholders such as Appalachian Power, the West Virginia Department of Education, NTIA, EducationSuperHighway, and more. Barriers to data collection are detailed in Section 4 of the Five-Year Action Plan.

Figure 9 maps the locations of the respondents. Most respondents are in or near urban areas, which may be a result of them having both access to broadband and communication channels.

Source: WVDED

WVDED asked all non-internet service provider respondents for information on programs or services they offer, and which covered populations they target. They were provided the following list of potential services to choose from:

- Digital literacy and digital skills training
- Subsidized or low cost-devices (e.g., computers, tablets) with affordable maintenance costs
- Awareness and outreach activities related to digital inclusion
- Public computer labs
- Digital Navigator programs
- Loaner computer/hotspot programs
- Computer refurbishing programs

- Discount or subsidized broadband service and equipment programs
- Public Wi-Fi and networks (public access points)
- One-to-one computer training programs

The survey revealed that there are multiple organizations in West Virginia that offer digital inclusion awareness and outreach activities. Most of these groups orient their programs to anyone, not to targeted populations, indicating that a more deliberate focus on "covered populations" may be needed. The asset inventory, despite its limitations, showed that West Virginia organizations may need additional resources to address the following programmatic gaps.

Figure 10 depicts the types of services these entities provide and to which groups. For example, using the first row, there are six programs that provide digital literacy and skills training to anyone, three programs that provide such services to at least low-income individuals, one program that provides such services to at least veterans, etc. This figure includes services that are offered on a formal, regular basis and ones that are offered on an ad-hoc basis.

Figure 10: West Virginia DAE Survey Responses: Distribution of Services by Population Groups

Population served

Type of program	Anyone	Low-income	Veterans	Aging	Disabilities	Rural	Racial or ethnic minority	Incarcerated	With a language barrier	Other
Digital literacy and skills training	6	3	1	3	3	3	2	0	2	0
Subsidized or low-cost devices	1	2	0	1	1	1	1	0	1	0
Digital inclusion awareness or outreach activities	8	5	2	4	4	4	2	0	2	0
Public computer labs	4	2	1	2	2	2	1	0	1	0
Digital navigators	2	0	0	0	0	0	0	0	0	0
Loaner computer/hotspots	3	1	0	1	1	1	1	0	1	0
Computer refurbishment	0	0	0	0	0	0	0	0	0	0
Discount or subsidized broadband service or equipment	0	0	0	0	0	0	0	0	0	0
Public Wi-Fi and networks	5	3	1	2	2	2	1	0	1	0
One-to-one computer programs	1	1	0	1	1	1	1	0	1	0

Some key takeaways:

1. No services to incarcerated groups specifically were identified
2. There is a shortage of computer refurbishment programs
3. There is a need for discount or subsidy programs for broadband service or equipment.

47% of respondents did not respond regarding programs/services, 37% identified formal program(s) they offer, and the remaining 16% of respondents offer programs informally on an ad-hoc basis. The table in Appendix *A.9 Complete List of Digital Equity-Related Programs in West Virginia* West Virginia lists the programs, both those offered on a regular basis or ad-hoc, provided by entities in West Virginia. Note that a few entities and programs may be missing because of insufficient data.

The following subsections examine the current state of digital equity regarding covered populations, including existing programs and needs. Detailed breakdowns of each of the programs are provided in *Appendix A.5 Detailed List of Assets by Covered Population*.

1 Aging Individuals

Skills	**Senior Centers and Libraries** in West Virginia provide digital skills training for older adults, assisting with tasks like emailing, online bill payments, internet navigation, online form filling, driver's license renewal, and benefit requests or renewals through public websites.
	Pendleton Senior and Family Services offers digital literacy and skills training, conducts digital inclusion awareness and outreach activities, and provides public computer labs and Wi-Fi networks.
	Older Adults Technology Services (OATS), an AARP affiliate, helps aging individuals learn and use technology to improve their quality of life through their program, Senior Planet, which offers free virtual training lessons, best practices for engaging older adults in virtual programming, in-person training plans, and guides for developing train-the-trainer network resources to build local organization capacity
	CyberGenerations, also known as the Senior Citizens' Cyber Safety Initiative, teaches aging adults the skills to protect themselves from cybercrimes either through workshops or a self-paced course.

2 Racial and Ethnic Minorities

Skills and career training	**Grow with Google** is a national initiative providing free digital skills workshops, tools, resources, and one-on-one coaching. The initiative is considering partnering with West Virginia's Community and Technical Colleges to offer free Google Career Certificates for students in cybersecurity, IT support, digital marketing, and e-commerce. It enrolled over 330 West Virginians in its IT Support program in 2020, with 60% of attendees being Black, Latino, women, or veterans.
	West Virginia State University, an HBCU, has partnered with Grow with Google through its HBCU Career Readiness Program. This program provides digital skills training and career workshops to Black students at over 30 institutions, equipping them for meaningful careers. It also provides funding to HBCU Career Centers for a semester-long digital skills program, which includes virtual and in-person training sessions and workshops, guest speakers, and a cloud-compatible Rocketbook Panda Planner for each participant.

3 Rural Residents

Skills and career training	**Grow with Google** collaborates with numerous community institutions in rural West Virginia for digital skills development, including libraries, commerce chambers, workforce organizations, schools, and more. Some of the participating entities include Brooke County Economic Development Authority, Cabell County Public Library, Goodwill Industries of KYOWVA Area, Inc., and West Virginia Northern Community College.
	Mary H. Weir Public Library, in partnership with Goodwill and West Virginia Northern Community College, offers an initiative where computer science students provide tech support as interns. Goodwill also offers training on the library's electronic resources.

4 Incarcerated Individuals

Skills and career training	**The West Virginia Schools of Diversion & Transition Adult Educational Programs (AEP)** support currently incarcerated individuals and those transitioning out of the system. AEP provides career readiness initiatives, academic education classes, and technical skills training. Participants earn industry-recognized credentials, partake in U.S. Department of Labor apprenticeships, and get connected to jobs through local community agencies and partners.
	Workforce West Virginia, a state agency, oversees a 12-month pilot called the Digital Inclusion Program, designed to support the state's reentry population. The program loans smartphones to help these individuals conduct online job searches and communicate with employers. It offers digital inclusion orientation, a career readiness assessment, job search activities, ongoing career coaching, assistance with participation in federal programs, high school equivalency courses, and connections to substance use disorder treatment resources.

5　Veterans

Skills and career training	**West Virginia Veterans Upward Bound** provides Digital Equity programs for veterans, offering six-week basic and intermediate computer skills classes. Upon completion, veterans receive a Computer Skills Certificate. The organization also recently donated 10 computers to the Shepherd University Martinsburg Center for veterans and students.
Device access	**Tech For Troops** helps veterans develop computer skills and provides them with refurbished computers. They offer three types of programs: IT Training, Electronics Recycling, and Hardware Upcycling. Their Veteran Improvement Program provides low-cost refurbished computers, up-to-date software, and scholarships to qualifying Veterans and Veterans Assistance Organizations.
	The West Virginia Department of Veterans Assistance manages the West Virginia Veterans Home program, providing displaced veterans with a temporary home, meals, nursing care, housekeeping, and recreational services, along with assistance in securing permanent housing, stable income, and educational services. A technology lab is also included in the program.

6　Individuals with Disabilities

Skills and device access	**The West Virginia Division of Rehabilitation Services (WVDRS)** is a state agency providing Digital Equity programs for individuals with disabilities, offering comprehensive and individualized skills training. They also offer access to low-cost devices through the Technology-Related Assistance Revolving Loan Fund, allowing for the purchase of computers with assistive software and hardware.
	The West Virginia Schools for the Deaf and Blind (WVSDB) offer comprehensive educational programs for children with hearing and visual impairments. The WVSDB Career and Technical Education Department offers Computer Repair Systems courses that focus on hands-on, real-world applications to prepare them for post-graduation employment.[50]

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[50] West Virginia School for the Deaf and Blind (WVSDB) https://www.wvsdb2.state.k12.wv.us, Accessed July 5, 2023

Devices and materials access	**The Library for the Blind and Print Disabled** provides library services to individuals unable to use traditional print materials due to various impairments. Services include assistive technology loans, braille books, descriptive videos, talking book players, and talking magazines.
	The WVU Center for Excellence in Disabilities operates the West Virginia Assistive Technology System (WVAST) Loan Library, a device loan and reuse program for individuals with disabilities. WVAST allows users to borrow assistive technology for 30 days, procure used devices for free, and participate in device demonstrations.

7 Individuals with a Language Barrier

Skills	**The West Virginia Department of Education**, through West Virginia Adult Education and the Adult Education/Literacy Programs, offers services to improve literacy skills of adults with low-literacy levels and English Language Learners (ELLs). Many counties in West Virginia have local volunteer literacy programs.
	Literacy Volunteers of Monongalia and Preston Counties, an affiliate of ProLiteracy, offers free, confidential support services to native English speakers and ELLs to improve reading, writing, listening, speaking, and computer skills.
	Summers County Adult Education (SCAE) provides in-person or online classes to help individuals with low-literacy levels and ELLs improve their English language, reading, writing, and technology skills. The program offers weekly computer classes at the Summers County Public Library and provides Digital Badges, a Computer Certificate of Achievement, and Microsoft Office Specialist and Internet and Computer Core Certificates (IC3) upon completion of training.

8 Covered Households

Affordability	**The Affordable Connectivity Program (ACP)**, overseen by the Federal Communications Commission (FCC), provides eligible households in West Virginia with up to $30 per month toward internet service and up to $100 to purchase a computer or laptop from participating providers. West Virginia is taking steps to increase ACP enrollment by partnering with higher education institutions, conducting listening sessions, and using FCC broadband maps to identify and reach areas with coverage gaps. Internet Service Providers in West Virginia actively promote ACP enrollment, with some offering specific programs for qualifying households, such as Comcast's Internet Essentials, providing discounted internet service packages.

9 Assets Relevant to All Populations

Skills	**The West Virginia Department of Education** offers a range of digital literacy courses and has pioneered a statewide Computer Science K-12 pathway to ensure students have access to computer science education from an early age. The West Virginia Department of Education also provides professional development opportunities for teachers in digital skills.
	CodeWV at WVU, in partnership with the West Virginia Department of Education, Code.org, and Apple, provides training for West Virginia educators to teach coding and computer science in classrooms. As of 2021, it has trained 905 teachers at 328 schools.
	The **NASA IV&V Educator Resource Center (ERC)** offers professional development opportunities for West Virginia educators in coding, robotics, and other technologies.
	The West Virginia Department of Education provides a three-credit hour online course called Digital Citizenship to active West Virginia teachers/educators and administrators, covering nine elements of digital literacy.
	West Virginia's Career Technical Education (CTE) programs, provided by the West Virginia Department of Education, offer hands-on technical training in various fields including Information Technology (IT). Students can earn various industry-recognized certifications upon completion.

	Several **higher education institutions in West Virginia**, such as Marshall University and Eastern West Virginia Community and Technical College, offer basic, intermediate, and advanced digital literacy courses.
Skills and digital navigator programs	**The Randolph County Housing Authority and Homeownership Center**, in partnership with Highland Community Builders and Rural LISC, have launched a Digital Navigator Program. This initiative provides individualized support to community members in North Central West Virginia, assisting them in securing affordable internet service and devices, and helping them develop fundamental digital skills.
	The Morgantown Public Library System is planning to train its library staff to become Digital Navigators. This train-the-trainer model aims to equip library staff with the skills necessary to aid West Virginians in enhancing their digital literacy.
Device affordability	**The Federal Communications Commission**, the **WVU Center for Excellence in Disabilities**, and the **West Virginia Division of Rehabilitation Services** offer programs that provide a subsidy payment for securing an internet-capable device, devices for loan, and a low-interest loan to secure devices. These programs cover households and individuals with disabilities. WVDED is exploring partnering with Digitunity, a national organization focused on eliminating the technology gap, to see how it might align with West Virginia's efforts.
Device access	Public libraries and senior centers provide access to computers and devices
Broadband access	The **West Virginia Broadband Enhancement Council**, the **West Virginia Office of Technology**, and the **West Virginia National Guard** have developed a public, interactive map of public Wi-Fi hotspots across the state. The map was created in collaboration with local education boards, libraries, and Internet Service Providers.
	The **WV Kids Connect Initiative** was established to support K-12 students without home internet access by providing connections to a network of 1,000 Wi-Fi hotspot locations across the state. The program is a collaboration between the West Virginia Department of Education, the West Virginia Office of Technology, the West Virginia Higher Education Policy Commission, and West Virginia Network.
	WVU provided Wi-Fi hotspot resources to students and community members during the COVID-19 pandemic.
	Comcast, in collaboration with 10 not-for-profit organizations in West Virginia, established Lift Zones. These zones provide free high-capacity

	internet connectivity and digital educational content to communities, and according to Comcast, they have significantly contributed to increasing digital equity in the State. **Bluefield State University**, an HBCU in West Virginia, hosted a "Kids Connect" Wi-Fi hotspot at Bluefield State College in one of its field parking lots.[51] The hotspot was created for southern West Virginia public school students who may not otherwise have internet access. The "Kids Connect Initiative" offered by West Virginia Governor Jim Justice's office was developed to expand broadband internet availability.
Device refurbishment	The **West Virginia Department of Education** has been running the secondlaunchWV initiative since 2015. This program collects and refurbishes unused equipment from state agencies and other partners like the West Virginia National Guard, Toyota Motor Manufacturing, and Mountaineer Gas. The updated equipment is then donated to early childhood programs and K-12 schools. As of now, almost $7 million in technology savings has been realized through the donation of 19,843 refurbished items.[52]
Digital Equity Coalition	Organizations such as Black by God participate in national coalitions like the Black Churches for Digital Equity (BC4DE). BC4DE advocates for digital equity in under-represented communities by promoting broadband assistance programs, increasing internet connectivity, training leaders for digital equity, and supporting the Affordable Connectivity Program.

3.3 Needs and Barriers Assessment

The Core Planning Team sought to identify barriers to digital equity under the guiding principle of meeting people where they are. To that end, the Core Planning Team pursued information through public listening sessions and a randomized statewide survey.

The listening sessions, facilitated by WVDED and the State's 11 Regional Planning and Development Councils (RPDCs) were completed in July 2023. Preliminary evidence from the listening sessions suggests that the target populations in West Virginia face many of the same issues relating to digital equity. The systemic barriers to digital equity include high-speed internet service affordability, securing a low-cost internet enabled device, technical support opportunities, and acquiring digital literacy skills.

Section 3.3 is organized to illustrate the overlapping nature of the barriers affecting covered populations and will focus on collective need rather than population-by-population. Section 3.3.1 provides an

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[51] Bluefield State University, "WiFi Hotspot for Southern WV Public School Students Now Available at Bluefield State College," https://bluefieldstate.edu/community/news-and-events/wifi-hotspot-southern-wv-public-school-students-now-available-bluefield.
[52] West Virginia Department of Education, "secondlaunchWV", https://wvde.us/infrastructure-and-network-operations/second-launch/, Accessed July 10, 2023.

overview of RPDC listening sessions, how they were executed, background information, and the scale of the effort. Section 3.3.4 discusses the evidence and information garnered from these listening sessions.

3.3.1 RPDC Listening Sessions Overview

The RPDC listening sessions sought to engage residents and communities with the greatest digital equity, access, and adoption needs. During the sessions, attendees were asked to share information about their experiences with internet and device use, internet service at home, access barriers, and digital skills, and cybersecurity. Attendees were also encouraged to provide feedback on the West Virginia Digital Equity Plan draft vision statement. All answers were recorded anonymously through a Google Form.

When planning data collection, WVDED wanted trusted community partners to engage with citizens. As such, it chose the 11 West Virginia RPDCs as its partners.

In 1971, the Regional Planning and Development Act divided the State into 11 regions serving as development districts "to more effectively utilize funding resources and maximize small communities' chances of attracting funds from federal, state, and local organizations to foster community and cooperation throughout the state." As stated by the West Virginia Association of Regional Councils, the RPDCs focus on expanding and improving water and sewer facilities, infrastructure, transportation, employment, industry, housing, health care, education, and recreation. Figure 11 depicts the regional boundaries.

Figure 11: West Virginia Metropolitan Planning Organizations and Regional Planning and Development Councils
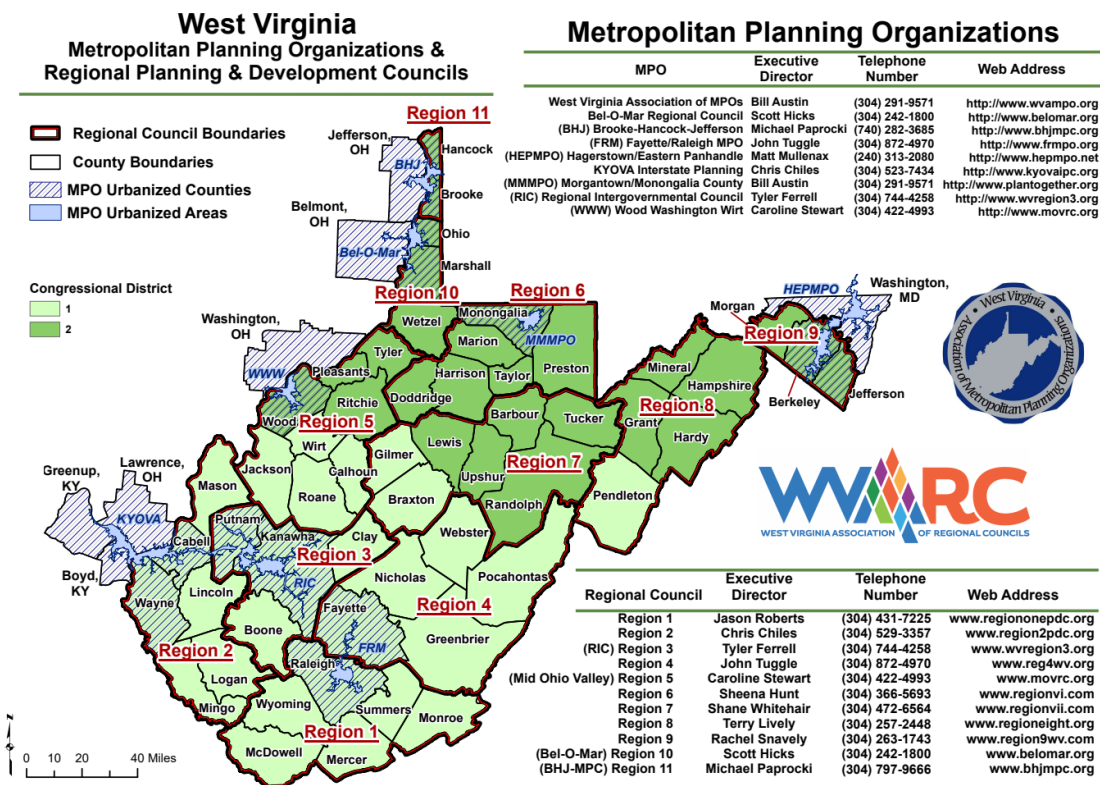
Source: Region I Planning & Development Council,
https://cdn.sanity.io/files/2avbnain/production/464405c961223a3f91de89d54f48b79ec2771510.pdf.

The RPDCs began holding listening sessions in Mach 2023 and completed them in July 2023. The format for a listening session requires a representative sample from each of the eight target populations. To achieve this, RPDCs were given the option to either pursue a representative sample or gather a minimum number of attendees. This format nearly guaranteed that at least five individuals from each target population would be in attendance. Both in-person and virtual listening sessions were held.

For the vast majority of listening sessions, RPDCs utilized a standard format developed by WVDED. In some cases, RPDCs sought to adjust their approach to maximize responses while keeping in line with the overall premise and topics discussed. WVDED made it clear that the in-person listening session format should be emphasized, but encouraged the RPDC staff to use outreach methods that made the most sense for each Region and locality. As an example, some RPDCs utilized region-specific digital and paper surveys that were adapted from the listening session questions. RPDC staff circulated these surveys at public meetings and events, receiving feedback from more residents. Because these surveys were based on the model developed by WVDED, the format of the data gathered between the surveys and the listening sessions stayed uniform. For the purposes of consistency and recognizing that the topics discussed were aligned regardless of the event format, all of these events fall under the collective umbrella term of "listening sessions" and the data has been analyzed together.

Under RPDC leadership, data was collected from residents at 145 events over a four-month period in 2023, with broad representation from members of covered populations and organizations that serve them. The vast majority of events were in-person listening sessions. A total of 1,967 West Virginians participated in the statewide listening sessions. Attendance ranged from 1 to 178 community members, with an average of 11.9 attendees per listening session.

Figure 12 maps the locations of each listening session, save for a handful that could not be isolated to a specific location. Please note that feedback was received from residents of each county despite multiple counties not receiving a dedicated, in-person listening session. In some counties, a listening session was planned and attempted but had no resident turnout.
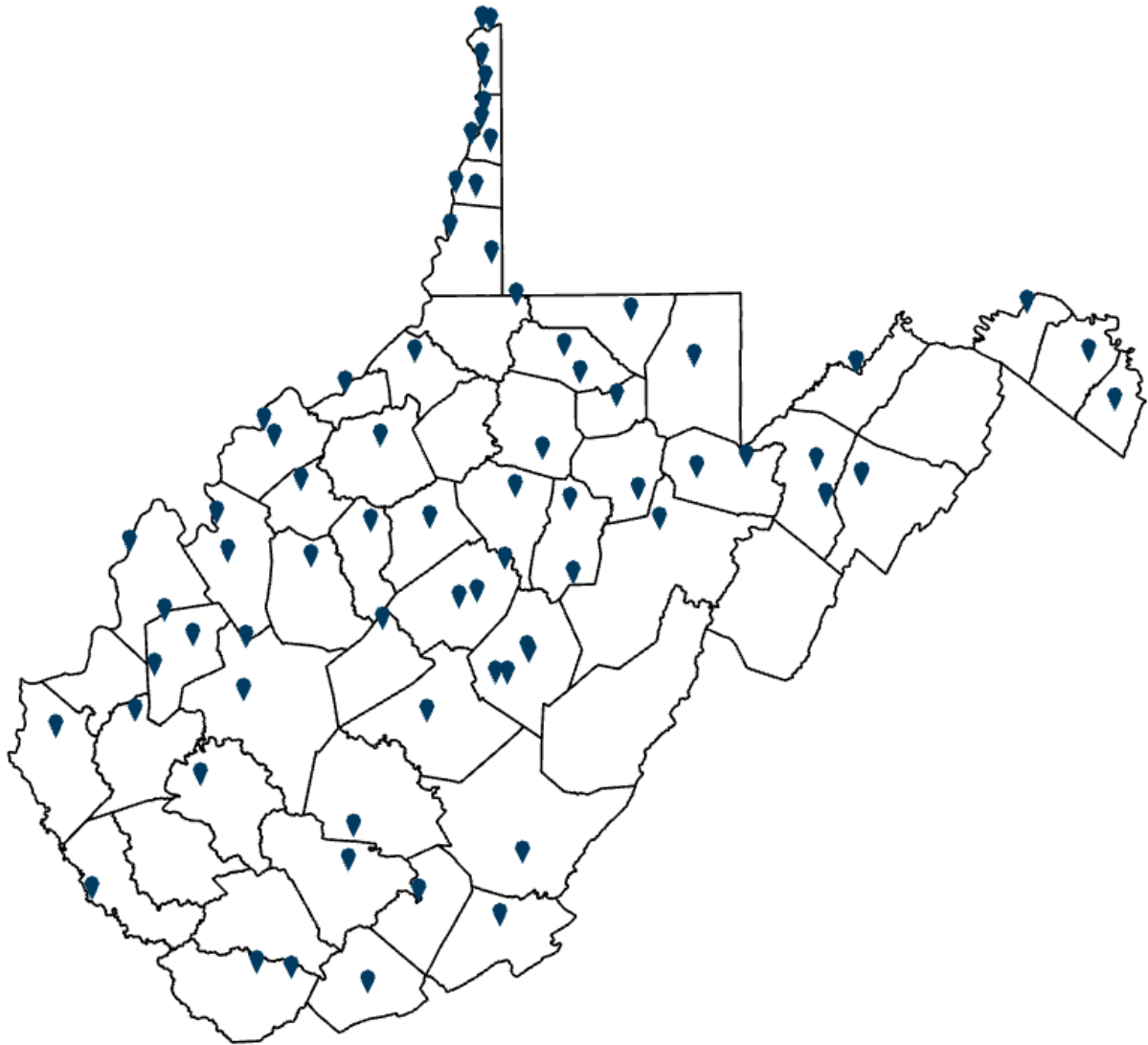
Source: Data Driven WV

Data collected at listening sessions revealed consistent themes, which are discussed in Section 3.3.4.

3.3.2 Statewide Digital Equity Survey

WVDED and the RPDCs worked to ensure the listening sessions were as accessible to as many West Virginians as possible. Still, understanding that not all West Virginians who wanted to voice their experiences would be able to attend a public meeting and to ensure multiple opportunities for participation, the WVDED procured a professional survey firm to conduct the West Virginia Broadband Survey. WVDED coordinated with Thomas P. Miller & Associates to conduct a survey to reach individuals who could not attend the listening sessions. More than 2,000 West Virginians took part in the survey, choosing to note their demographic information and send their responses to questions related to internet service speeds, service satisfaction, internet use, owned devices, program knowledge and more. WVDED collected responses from June 28, 2023, to August 16, 2023.

The survey was distributed by multiple distribution partners, assembled by TPMA in partnership with the WVDED, the West Virginia Library Commission, and the West Virginia Broadband Enhancement Council marketing channels. Distribution partners received advanced materials in a distribution kit, including a printable flyer, online banner, and sample language for emails, newsletters, and social media.

The survey and distribution kit were offered in both English and Spanish, to increase accessibility. Further, the survey was available online and on paper. The online survey was hosted on the WVDED broadband website; residents could access the paper surveys at their local library.

To increase reach in areas with poor or no internet service, 10,000 postcards were sent to homes in highly unserved zip codes, meaning zip codes with more than 2,000 unserved addresses. These postcards included information on accessing the survey online and in-person. Additionally, the WVDED and the Office of Marketing and Communication of the West Virginia Department of Commerce invested in social media and radio campaigns to boost participation.

The goal was to receive surveys from 1,000 qualified respondents (West Virginia residents age 18+), with at least 250 being from highly unserved zip codes. In total, 2,062 responses were received, with 2,050 being from qualified respondents. Four hundred and twenty-two (422) responses were from highly unserved zip codes, or about 21% of qualified responses.

The complete survey results are currently under review and will be released in the near future. The West Virginians who participated in the survey provided important, invaluable information which enhanced this Digital Equity Plan. See Section 4.2.7 for a more detailed breakdown.

3.3.3 Other Data for Evidence-Based Needs and Objectives

Other sources of data from the federal, state, and other public sources helped inform the needs assessment and goals of this Digital Equity Plan.

Data from the U.S. Census Bureau's Digital Equity Act Population Viewer provides insight into the unique challenges at West Virginia's baseline. Approximately 96.9% of West Virginians belong to a covered population, as approximately 90% of the overall population live in rural areas.[53] West Virginia's covered populations overlap heavily, especially because of the large rural population. The high volume of covered populations is why WVDED has elected to take a comprehensive, statewide digital equity strategy, while keeping close collaboration with organizations that serve each covered population to ensure covered populations are adequately aided.

WVDED accounted for its overwhelming rurality through every step of the planning process, taking care to address the needs of rural residents while equitably representing the other covered populations and accounting for intersectionality. During WVDED's data gathering exercises, members who belonged to more than one covered population were recorded in each category, spreading their voice across data groups, to document all of their access barriers. While accurately capturing participant attributes, this cross-reference does not provide results by specific characteristic. Furthermore, representative sample sizes of each population have been a requirement for all data gathering efforts to ensure all voices are

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[53] U.S. Census Bureau, Digital Equity Act Covered Population Viewer, https://mtgis-portal.geo.census.gov/arcgis/apps/webappviewer/index.html?id=c5e6cf675865464a90ff1573c5072b42.

fairly heard. This Digital Equity Plan has been developed to ensure all covered populations are represented to their fullest extent and their voices highly valued.

WVDED has committed to continue working with organizations that serve covered populations to determine how to best attend to the unique needs of each covered population and remedy intersectional issues. The needs of each covered population are unique, and even the needs of a single covered population might vary across different geographies or communities. See Section 4.4 for details.

One of the most reported needs across all covered populations at RPDC listening sessions was *the need for affordable broadband service.* In researching potential methods to remedy this need, WVDED reviewed ACP enrollment data from the Universal Service Administration Company. At the time of this plan's drafting, 103,000 households were enrolled in ACP, while an estimated 368,000 households across the State may be eligible.[54] These programs align, as the ACP's eligibility standards for broadband service cost aid often overlap with the Digital Equity Act's covered populations. As such, WVDED identified a new need: *the need for knowledge of, information on, and easy enrollment in ACP across West Virginia*. As a result, WVDED established Objective 1.1 Increase enrollment in the ACP.

The U.S. Census Bureau helped provide the basis for Objectives 1.2 and 2.1 of this Digital Equity Plan: *complete broadband deployment as a part of the BEAD Five-Year Action Plan* and *create a program to provide device distribution, lending, and recycling*, respectively. According to the Census Digital Equity Population Viewer, 14.4% of West Virginia households do not own a computer or a broadband subscription, with 20.8% of the population lacking fixed broadband infrastructure entirely. Other ACS data estimates computer non-ownership at 12% in West Virginia, as discussed in Section 3.1.2.

Figure 13 breaks this down at a county level: greater than or equal to 15% of households in almost all counties lack a computer or broadband subscription, with the only exceptions being Marion County, Wood County, Berkeley County, and Jefferson County. This raises a clear statewide need for fixed broadband infrastructure deployment, device availability, broadband service availability, and interest in the two latter. For more information on infrastructure deployment efforts, see the West Virginia BEAD Plan.

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[54]Universal Service Administrative Co. ACP Enrollment and Claims Tracker: https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker.

Figure 13: Percentage of Population Lacking Computer or Broadband by County
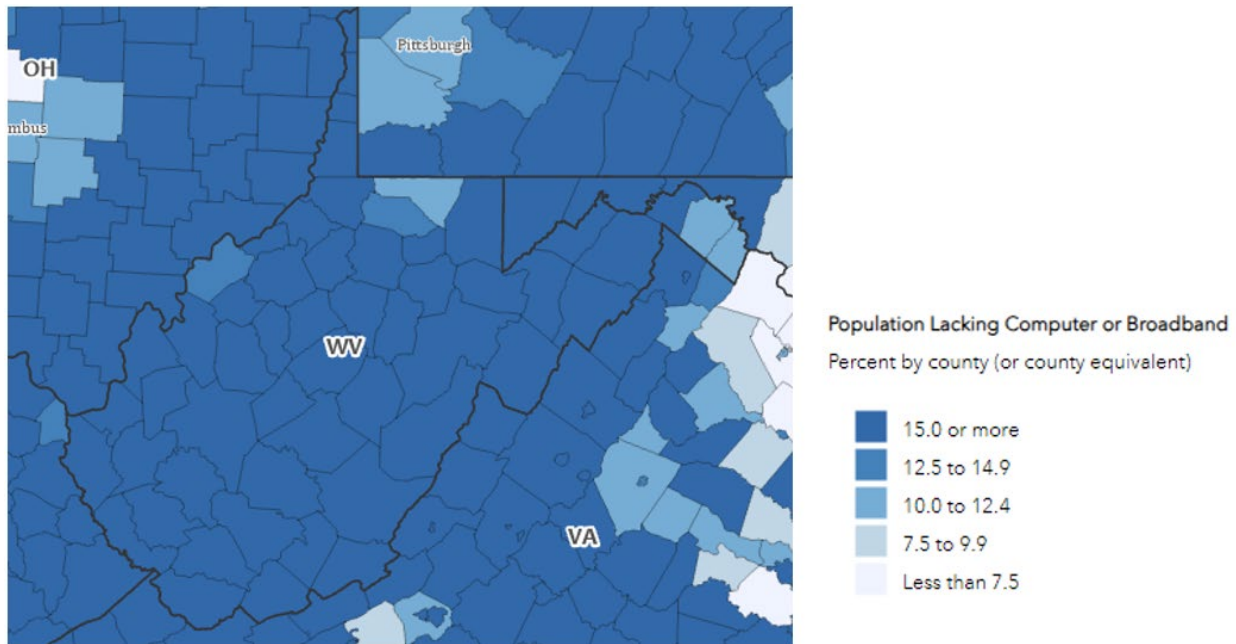
Source: U.S. Census Bureau, 2015-2019 5-Year American Community Survey (ACS) Estimates

The remaining goals and objectives were most directly informed by barriers identified through the RPDC listening sessions, statewide survey, and further research see the other Needs and Barriers Assessment sections for details.

3.3.4 Covered Population Barriers Assessment

The following covered population needs assessment builds upon outreach and research discussed in the previous sections to break down the most reported barriers across each covered population. Almost all known barriers were reported in at least one session with each covered population. The below section details the barriers found to be most prominent to a population during research. A contributing gap to many or all the below categories is West Virginia's lack of direct digital equity efforts at the State, local, and private levels; for more information on this gap, see Section 2.2.

Aging Individuals Over Age 60

Poor internet service quality, meaning internet that does not meet the standards of broadband, was the most-reported barrier among aging individuals in listening sessions, having been reported in 79.22% of sessions with this population. Per the statewide survey, 63.9% of West Virginians over age 60 reported either indifference or dissatisfaction with their internet service provider.

Poor internet service reliability was reported in 68.83% of listening sessions with aging individuals, meaning the population had frequent outages or significant dips in their service performance. 53.3% of statewide survey respondents from this population expressed dissatisfaction with their service reliability.

Challenges using government and public websites were reported in 55.84% of listening sessions with aging individuals, while **lack of technical knowledge** was reported in 23.38%. Aging individuals tend to cite lack of subject matter knowledge as a barrier because they have little experience or training with computers, and this can exacerbate challenges using public and federal websites. Aging individuals with little computer experience can also develop computer anxiety, further repelling them from technology.[55] Website accessibility standards which specifically remedy the challenges faced by covered populations have also yet to be established by West Virginia government websites.

High cost of internet service was reported in 55.84% of listening sessions with aging individuals. 54.1% of statewide survey respondents over age 60 described their internet service fee as "not affordable." Also, 12.1% of West Virginians 65 years of age and over were living below the poverty line in 2022 and may need to prioritize their finances otherwise.[56]

High cost of internet service is often exacerbated by **limited service provider options** in West Virginia, reported at 25.97% of sessions with aging individuals.

Lack of available internet service to the home was reported in 49.35% of sessions with aging individuals. This barrier is exacerbated by **service providers who are unwilling to expand**, another barrier reported at 24.68% of listening sessions with aging individuals.

Lack of technical support, meaning internet service providers and device providers did not offer readily available and effective help to customers, was reported in 23.38% of listening sessions with aging individuals.

Physical disabilities preventing or impeding technology use was reported in 15.58% of listening sessions with aging individuals.

Data caps imposed by internet service providers were reported in 10.39% of listening sessions with aging individuals.

Impacts: In more than 20% of sessions with aging individuals, participants reported that their set of barriers caused them to miss out on education, the ability to work from home, and other economic opportunities.

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[55] National Library of Medicine, "Psychological Barriers to Digital Living in Older Adults: Computer Anxiety as Predictive Mechanism for Technophobia," https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6770433/
[56]U.S. Census Bureau, Selected Economic Characteristics,
https://data.census.gov/table?q=DP03&t=Income+and+Poverty&g=040XX00US54

Poor internet service reliability was reported in 71.74% of listening sessions with individuals from covered households, meaning the population had frequent outages or significant dips in their service performance. 51.5% of statewide survey participants from households with income below 132% of the poverty line reported dissatisfaction with their internet service reliability.

High cost of internet service was reported in 71.74% of listening sessions with individuals from covered households. 51.8% of statewide survey respondents from this population described their internet service cost as "not affordable." 17.9% of West Virginians were living below the poverty line in 2022 and may still need to prioritize their finances otherwise.[57]

High cost of internet service is often exacerbated by **limited service provider options** in West Virginia, reported at 34.78% of listening sessions with this population.

Poor internet service quality, meaning internet that does not meet broadband standards was reported by individuals from covered households in 79.22% of sessions. Per the statewide survey, 61.9% of West Virginians making less than 132% of the poverty line reported either indifference or dissatisfaction with their internet service provider.

Challenges using government and public websites were reported in 65.22% of listening sessions with individuals from covered households, while **lack of technical knowledge** was reported in 30.43%.

The lack of technical knowledge among individuals from covered households likely stems from necessary financial prioritization among this population, leading to low rates of experience. In 2018, only 69.1% of households making $25,000-$49,000 annually possessed a desktop or laptop computer. Also, only 50.9% of households making less than $25,000 owned a desktop or laptop computer.[58] Low-income households are correlated with low computer ownership, which often leads to low experience levels.

Lack of available internet service to the home was reported in 56.52% of sessions with individuals from covered households. This barrier is exacerbated by **service providers who are unwilling to expand**, another barrier reported at 28.26% of listening sessions with this population.

Physical disabilities preventing or impeding technology use was reported in 30.43% of listening sessions with individuals from covered households. Some intersectionality between this

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[57]U.S. Census Bureau, Selected Economic Characteristics, https://data.census.gov/table?q=DP03&t=Income+and+Poverty&g=040XX00US54
[58]U.S. Census Bureau, "Computer and Internet Use in the United States," https://www.census.gov/content/dam/Census/library/publications/2021/acs/acs-49.pdf

population and individuals with disabilities is to be expected, as working-age individuals with disabilities are more likely to have less resources than individuals without a disability in the United States.[59]

Lack of technical support, meaning internet service providers and device providers did not offer readily available and effective help to customers, was reported in 23.91% of listening sessions with individuals from covered households.

Data caps imposed by internet service providers were reported in 10.39% of listening sessions with individuals from covered households.

Impacts: In more than 20% of sessions with individuals from covered households, participants reported that their set of barriers caused them to miss out on education, the ability to work from home, and other economic opportunities. This population also expressed anxiety surrounding a lack of cybersecurity knowledge in 20% of sessions.

Veterans

Poor internet service quality, meaning internet that does not meet the standards of broadband, was the most-reported barrier among military veterans, being reported in 76.67% of sessions with this population. Per the statewide survey, 65.6% of West Virginian veterans reported either indifference or dissatisfaction with their internet service provider.

Poor internet service reliability was reported in 66.67% of listening sessions with military veterans, meaning the population had frequent outages or significant dips in their service performance. 57.1% of veterans expressed dissatisfaction with their service reliability through the statewide survey.

High cost of internet service was reported in 53.33% of listening sessions with military veterans. In 2017, 10.1% of West Virginian military veterans were living below the poverty line and may still have to prioritize their finances otherwise.[60]

High cost of internet service is often exacerbated by **limited service provider options** in West Virginia, reported at 33.33% of listening sessions with this population.

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[59]Debra L. Brucker, Sophia Mitra, Navena Chaitoo, Joseph Mauro, "More Likely to Be Poor Whatever the Measure: Working-Age Persons with Disabilities in the United States," Wiley Online Library, https://doi.org/10.1111/ssqu.12098
[60]U.S. Census Bureau, Selected Economic Characteristics, https://data.census.gov/table?q=DP03&t=Income+and+Poverty&g=040XX00US54

Challenges using government and public websites were reported in 53.33% of sessions with military veterans. Lack of technical knowledge and physical disabilities, though reported and taken into consideration, went comparatively underreported with this population. The lack of accompanying barriers suggests that websites, especially from veteran-serving organizations, could benefit from implementing accessibility standards.

Lack of available internet service to the home was reported in 36.67% of sessions with military veterans. This barrier is exacerbated by **service providers who are unwilling to expand**, another barrier reported at 26.67% of listening sessions with this population.

Data caps imposed by internet service providers were reported in 13.33% of listening sessions with military veterans.

<u>Impacts:</u> In more than 15% of sessions with veterans, participants reported that their broadband barriers caused them to miss out on education, the ability to work from home, government services, and medical services.

Individuals with Disabilities

Poor internet service quality, meaning internet that does not meet the standards of broadband, was the most-reported barrier among individuals with disabilities, being reported in 75.86% of sessions with this population. Per the statewide survey, 69.2% of West Virginians with disabilities reported either indifference or dissatisfaction with their internet service provider.

Challenges using government and public websites were reported in 72.41% of sessions with individuals with disabilities. **Lack of technical knowledge** and **physical disabilities** were both reported as barriers in 37.93% of sessions with this population, suggesting a potential link.

Challenges using government and public websites may be exacerbated by a deficit of technical knowledge, which may be, in turn, exacerbated by physical disabilities. A lack of accessibility implemented in websites, software, and hardware may discourage those with physical disabilities, leading to a deficit of experience among the population. In 2021, Americans with disabilities were found to be less likely to own some digital devices than those without a disability.[61]

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[61]Andrew Perrin, Sara Atske, "Americans with disabilities less likely than those without to own some digital devices," Pew Research Center, https://www.pewresearch.org/short-reads/2021/09/10/americans-with-disabilities-less-likely-than-those-without-to-own-some-digital-devices/

High cost of internet service was reported in 72.41% of listening sessions with individuals with disabilities. In 2017, 37% of West Virginians with disabilities were living below the poverty line and may still have to prioritize their finances otherwise.[62]

High cost of internet service is often exacerbated by **limited service provider options** in West Virginia, reported at 31.03% of listening sessions with this population.

Poor internet service reliability was reported in 65.52% of listening sessions with West Virginians with disabilities, meaning the population had frequent outages or significant dips in their service performance. 56.3% of individuals with disabilities expressed dissatisfaction with their internet reliability through the statewide survey.

Lack of available internet service to the home was reported in 65.52% of sessions with individuals with disabilities. This barrier is exacerbated by **service providers who are unwilling to expand**, another barrier reported at 20.69% of listening sessions with this population.

Data caps imposed by internet service providers were reported in 24.14% of listening sessions with individuals with disabilities.

Lack of technical support, meaning internet service providers and device providers did not offer readily available and effective help to customers, was reported in 17.24% of listening sessions with individuals with disabilities.

Language barriers were reported in 17.24% of sessions with West Virginians with disabilities. This raises a need for accessibility standards, translation assistance standards, and assistive technology such as portable translators.

Impacts: In more than 15% of sessions with individuals with disabilities, participants reported that their set of barriers caused them to miss out on education, the ability to work from home, government services, and medical services. In 24.14% of sessions, participants expressed that they could not go online without help from another person due to inaccessibility. This group also expressed anxiety surrounding a lack of cybersecurity knowledge in 17.24% of sessions.

English Learners and Individuals with Low Literacy Levels

Challenges using government and public websites were reported in 76.47% of sessions with English learners and individuals with low literacy levels. **Lack of technical knowledge, physical disabilities,** and **language barriers** were all reported with

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[62]Cornell University, "2017 Disability Status Report
West Virginia," https://www.disabilitystatistics.org/StatusReports/2017-PDF/2017-StatusReport_WV.pdf

relatively moderate to high frequency among this population, suggesting a link between the four barriers; the latter three were reported in sessions 29.41%, 41.18%, and 41.18% of the time respectively. This raises a potential need for assistive technology deployed in a manner that also covers the language gap.

High cost of internet service was reported in 70.59% of listening sessions with English learners and individuals with low levels of literacy. High internet service costs can be exacerbated by scarce infrastructure deployment, low internet service provider capacity, and the following factors. Inadequate internet service can affect perceptions of cost by being perceived as "not worth the expense." English learners struggling with this barrier may make insufficient income and need to prioritize their finances otherwise.

Poor internet service reliability was reported in 64.71% of listening sessions with English learners and individuals with low levels of literacy, meaning the population had frequent outages or significant dips in their service performance. 54.8% of English learners who responded to the statewide survey expressed dissatisfaction with their internet reliability.

Lack of available internet service to the home was reported in 58.82% of sessions with English Learners and individuals with low literacy levels. This is an infrastructure deployment gap that has many of the same causes as poor internet service (see next row) quality regarding internet service provider business practices. 17.8% of all West Virginians live in a household with no fixed broadband availability. This barrier is often exacerbated by service providers who are unwilling to expand; however, this exacerbating barrier went comparatively underreported among this population, suggesting a possible barrier to communication between service providers and members of this population.

Poor internet service quality, meaning internet that does not meet the standards of broadband was reported in 52.94% of sessions with English learners and individuals with low levels of literacy. Per the statewide survey, 67.6% of West Virginian English learners reported either indifference or dissatisfaction with their internet service provider.

Impacts: In 31.58% of sessions with English learners or individuals with a low reading level, participants expressed that their set of barriers prevented them from accessing the internet without help from another person. In greater than 10% of sessions, participants reported that their set of barriers caused them to miss out on education, the ability to work from home, and other economic opportunities.

Individuals of a Racial or Ethnic Minority Group

Poor internet service quality, meaning internet that does not meet the standards of broadband, was the most-reported barrier among individuals of a racial or ethnic minority group, being reported in 64.29% of sessions with this population. Per the statewide survey, 61.9% of West Virginians from a racial or ethnic minority reported either indifference or dissatisfaction with their internet service provider.

High cost of internet service was reported in 64.29% of listening sessions with individuals of a racial or ethnic minority group. 31.0% of statewide survey respondents from this population described their service cost as "not affordable."

High cost of internet service is often exacerbated by **limited service provider options** in West Virginia, reported at 21.43% of listening sessions with this population.

Poor internet service reliability was reported in 57.14% of listening sessions with individuals of a racial or ethnic minority group, meaning the population had frequent outages or significant dips in their service performance. 52.4% of respondents to the statewide survey in this population expressed dissatisfaction with their internet service reliability.

Challenges using government and public websites were reported in 50% of sessions with individuals of a racial or ethnic minority group. Lack of technical knowledge often exacerbates these challenges but went comparatively underreported among this population. Instead, **language barriers** and **physical disabilities** were reported with more prominence: both in 21.43% of sessions with this population. These accompanying barriers suggest a need for assistive technology and accessibility standards among racial and ethnic minorities.

Lack of available internet service to the home was reported in 35.71% of sessions with individuals who belong to a racial or ethnic minority group. This barrier is exacerbated by **service providers who are unwilling to expand**, another barrier reported at 21.43% of listening sessions with this population.

Lack of technical support, meaning internet service providers and device providers did not offer readily available and effective help to customers, was reported in 21.34% of listening sessions with individuals of a racial or ethnic minority group.

Impacts: In greater than 10% of sessions with individuals of a racial or ethnic minority, participants expressed that their set of barriers caused them to miss out on education and economic opportunities. This population also expressed anxiety around a lack of cybersecurity knowledge in 17.65% of sessions.

Incarcerated and Previously Incarcerated Individuals

Challenges using government and public websites were reported in 100% of sessions with previously incarcerated individuals. **Lack of technical knowledge** and **language barriers** were reported with relatively moderate to high frequency among this population, suggesting a link between the three barriers; the latter two were reported in 40% and 20% of sessions respectively. This raises a potential need for digital skills training conducted in a manner that covers the language gap as well as assistive technology such as translators.

High cost of internet service was reported in 80% of listening sessions with previously incarcerated individuals.

High cost of internet service is often exacerbated by **limited service provider options** in West Virginia, reported in 20% of listening sessions with this population.

Poor internet service reliability was reported in 60% of listening sessions with previously incarcerated individuals, meaning the population had frequent outages or significant dips in their service performance.

Poor internet service quality meaning internet that does not meet the standards of broadband, was reported in 60% of sessions with previously incarcerated individuals.

Lack of available internet service to the home was reported in 40% of sessions with previously incarcerated individuals. This barrier is exacerbated by **service providers who are unwilling to expand**, another barrier reported at 20% of listening sessions with this population.

Data caps imposed by internet service providers were reported in 20% of listening sessions with previously incarcerated individuals.

<u>Impacts:</u> In 40% of sessions with incarcerated and previously incarcerated individuals, participants expressed that their set of barriers caused them to miss out on opportunities to work from home, other economic opportunities, government services, and medical services. 40% of sessions also had participants express that they could not go online without help from another person.

Please note that, in accordance with Federal Human Subject Research (HSR) guidelines, data was only collected from previously incarcerated, not currently incarcerated, individuals during the Public Listening Sessions and Statewide Broadband Survey. WVDED understands that the currently incarcerated population faces a unique but not dissimilar set of barriers to digital inclusion. Feedback gathered from previously incarcerated individuals and subject matter experts, such as the American Friends Service Committee, point toward many of the same digital equity barriers existing for currently incarcerated individuals.

Rural isolation presents a significant barrier which exacerbates several other barriers to bridging the digital divide. For instance, data analysis has shown that digital skills training, device distributors, computer labs, served broadband serviceable locations, and other services grow scarcer when a household is further away from an interstate highway; see Section 5.1.2 for details. Additionally, three quarters of unserved individuals live 20 minutes or more away from any CAI, these individuals must often make long commutes to take advantage of CAI services. West Virginians in especially rural areas are without reasonable access to broadband and services that may help to remedy digital equity barriers.

High cost of internet service was reported in up to 80% of listening sessions across all demographics. 54.3% of West Virginians living outside major cities described their service cost as "not affordable" through the statewide survey.

Many rural residents also reported **limited service provider options** in listening sessions. Many rural West Virginians find their household is serviced only by slow DSL connections[64], if at all, and so they may be stuck with sub-broadband connections with a company and subscription fee they did not have the privilege to choose. 65.4% of statewide survey respondents from outside major cities reported either indifference or dissatisfaction with their internet service provider.

Lack of available internet service to the home is an infrastructure deployment gap that affects many West Virginians. 17.8% of all West Virginians live in a household with no fixed broadband availability.[65] West Virginia's rural counties have a significantly lower presence of broadband service when compared to more populated counties.[66] This barrier is exacerbated by **service providers who are unwilling to expand**, another barrier reported in up to 60% of listening sessions across all participant populations.

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[63] Note: rural residents are a special case in West Virginia, making up 90% of the State's population and intersecting with all other covered populations at a high frequency. This barriers report presents a few of the barriers found to be most uniquely rural or rurally impactful. Rural residents can be said to share all significant barriers of the other covered populations at a moderate to high frequency. Likewise, the following barriers have presence with the seven other covered populations. Overlap between this report and the others is to be expected. The immense rural population is the most common justification for shared barriers between populations. For example, low income individuals and individuals with disabilities may share many of the same barriers, as they often have a second, shared covered population to which they belong: rural residents.

[64] H. Trostle, Christopher Mitchell, "Profiles of Monopoly: Big Cable and Telecom," Institute For Local Self-Reliance, https://cdn.ilsr.org/wp-content/uploads/2020/08/2020_08_Profiles-of-Monopoly.pdf?_gl=1*sojsbb*_ga*MTkwMzgyNTQ1Ni4xNjk2NTMwMDY1*_ga_M3134750WM*MTY5NjUzMDA2NC4xLjEuMTY5NjUzMDQ1NS4wLjAuMA..&_ga=2.61728684.1600602412.1696530065-1903825456.1696530065

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

[66] Ibid.

3.3.5 Root Causes

West Virginia's covered populations share many barriers due to factors including but not limited to the State's expansive rurality and high level of overlap between all covered populations and the rural resident population. To avoid extensive repetition, the root causes of barriers faced by many covered populations are expanded upon below in general terms. Unique elaborations and specific data are provided in Section 3.3.4. For the purposes of the barrier assessment, the following explanations are relevant to each covered population which experiences the related barrier.

In RPDC listening sessions, the most often reported barrier to digital equity was poor internet service quality. This barrier was prominently reported across all populations in listening sessions and was in the top three most reported barriers during the statewide survey. Widespread poor internet quality, internet service that does not meet broadband standards, is likely exacerbated by West Virginia's rural, mountainous landscape which can discourage internet service providers from deploying fixed broadband infrastructure.

The Mountain State rests entirely within the Appalachian Mountain System. With over 1679 named mountains, the geography and associated environmental stressors such as landslides can pose problems for infrastructure deployment. Furthermore, 90% of West Virginia's population live in rural areas without a dense population. From the perspective of an internet service provider, this can mean high costs of infrastructure deployment, high costs for infrastructure maintenance, and low profits due to a smaller customer base. It is likely for these reasons that internet service providers have passed over deploying fixed broadband infrastructure to many regions of the State.

Lack of available broadband and internet service providers refusing to expand are two barriers commonly reported in listening sessions which have the same causes as the above poor internet service quality.

Poor internet service reliability, meaning frequent service quality dips and outages, was the second most reported barrier in listening sessions. It was prominently reported across all populations in listening sessions and was one of the top three most reported barriers during the statewide survey. This barrier is instigated by many of the same factors that contribute to poor internet service quality. Poor reliability can also be caused by aging infrastructure, network design and capacity limitations, and poor infrastructure maintenance.

Data caps, reported in up to 42.86% of sessions across all populations are also a barrier linked to scarce infrastructure deployment. Residents reported that internet service providers in some regions of West Virginia do not have enough capacity, due to lack of infrastructure, to fully support their customer base. The result is imposed data caps that limit consumers internet usage, sometimes necessitating that certain technologies or uses such as gaming consoles and streaming are forgone entirely.

High internet service costs were the fourth most reported barrier in listening sessions and in the top three most reported barriers during the statewide survey. Exorbitant internet service costs can be exacerbated by scarce infrastructure deployment and low internet service provider capacity. When internet service providers feel restricted by mountainous geography and low return on infrastructure investment due to a region's low population density, a common solution is to charge higher fees for access to the limited capacity they have. The result, as reported in listening sessions, is inadequate internet service that is "not

worth the expense." Additionally, 17.9% of West Virginians were living below the poverty line in 2022 and may not be able to fit a broadband plan, inflated fee or otherwise, into their financial priorities.[67]

Internet service costs are additionally exacerbated by lack of competition and limited service provider options, a contributing barrier reported in up to 60% of listening sessions across all populations. Participants and survey respondents who have no more than one choice of internet service provider reported an associated lower quality customer service, lower quality internet service, and higher cost internet service.

The barrier of inability to easily use government or public websites is often linked with language barriers, low technological skill level, and physical disabilities. Because the contributing factors are so clearly defined and unique, the links between challenges using websites and the contributing barriers are broken down by population in Section 3.3.4.

Finally, lack of technical support, meaning internet service providers and device providers did not offer readily available and effective help to customers, was reported fairly often in outreach to covered populations. This barrier exacerbates issues with lack of technical knowledge and accessibility. According to information gathered during internet service provider interviews, businesses struggle to maintain their workforce in applicable fields in West Virginia, with talent often moving to other states and competitors. The result is an unfortunate deficit in skilled workers who can provide aid to those on the less privileged end of the digital divide.

3.3.6 Barriers Assessment Conclusion and Detailed Goal Basis

All data and research conducted during the planning phase point to poor internet service quality, poor internet service reliability, lack of available service to the home, high costs of service, and challenges using public and government websites as the most prominent, crosscutting, and significant barriers to Digital Equity in West Virginia. Many of the other, less reported barriers can be addressed indirectly, by directly focusing on these five major categories. The goals of the West Virginia State Digital Equity Plan have been tailored to accomplish this.

Since poor internet service quality, poor internet service reliability, lack of available service, and high costs of service are all related to deployment gaps in the State, WVDED designated BEAD activities as Digital Equity Objective 1.2. By providing broadband access to all, poor service quality, poor service reliability, and lack of available service will be directly addressed and equitably improved.

Other barriers, such as high service costs, data caps, limited service provider options, service provider refusal or inability to expand, and other internet service provider-related complaints will be remedied as the capacity to serve all West Virginians is made a reality through BEAD funding, and internet service provider competition is boosted for the benefit of consumers. Stimulating internet service provider competition is a goal of the State BEAD Plan because by giving West Virginians the choice to select the best service that meets their price needs, internet service providers will be forced to react by driving prices down and improving the quality of their services.

In an effort to further aid broadband affordability in West Virginia, WVDED instated Objective 1.1. By promoting ACP presence in the State, individuals with income too low to be affected by service fee

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[67]U.S. Census Bureau, Selected Economic Characteristics,
https://data.census.gov/table?q=DP03&t=Income+and+Poverty&g=040XX00US54

reductions inspired by Objective 1.2 will have another resource to overcome the affordability barrier. Affordability will also be encouraged through the BEAD Program's Low-Cost and Middle-Class Affordability Plan requirements under Objective 1.2. Please see West Virginia's BEAD Initial Proposal Vol. 2 for more details.

The barrier of challenges using government and public websites raises the need for accessibility standards and the proliferation of digital skills in West Virginia. Hence, Goal 3 was drafted to address this need. Objective 3.1 will spread digital skills through CAIs in West Virginia, while Objective 3.2 will ensure state agency websites are accessible to West Virginians. By promoting digital skills training and providing accessible web services, WVDED is setting a path for West Virginians to begin taking advantage of their new digital opportunities.

The final missing piece is device access. With broadband connections and skills, West Virginians still require the tools to close the digital divide. As previously explored in Sections 3.1 and 3.3.3, census data points to a deficit in device access among West Virginians. Since devices can be expensive or require long drives through rural lands to distributors, WVDED is instating Objective 2.1 to provide devices in a manner that meets West Virginians where they are. Affordable, reliable devices will be accessible under 2.1's device program. Complementing the device program, Objective 2.2 meets West Virginians at the intersection of digital skills, accessibility, and device ownership. By connecting individuals with technical support services at CAIs, the device program is made more sustainable and accessible, along with the benefits accumulated therein.

Aided by thorough research and analysis into the needs of West Virginia residents, WVDED has constructed an evidence-based plan to meet West Virginians where they are and close the digital divide. Each of the most cross-cutting barriers has a facet of Digital Equity Plan strategy addressing it, covering contributing barriers in the process. With the removal of these barriers, the benefits of digital equity will greatly empower and improve the lives West Virginians..

4. Collaboration and Stakeholder Engagement

4.1 Key Collaborators and Constituencies

As noted throughout this document, West Virginia views bridging the digital divide as a collaborative effort. As such, WVDED has sought to engage with stakeholders throughout every step of the process, benefiting from their knowledge, input, expertise, and resources where possible. This includes stakeholders at the federal, state, and local levels. As WVDED executes its Implementation Plan, it will continue working with these entities. Figure 14 details some of the entities included as key partners in the WVDED's digital equity planning process.

Figure 14: Examples of WVDED Stakeholders and Collaborative Partners
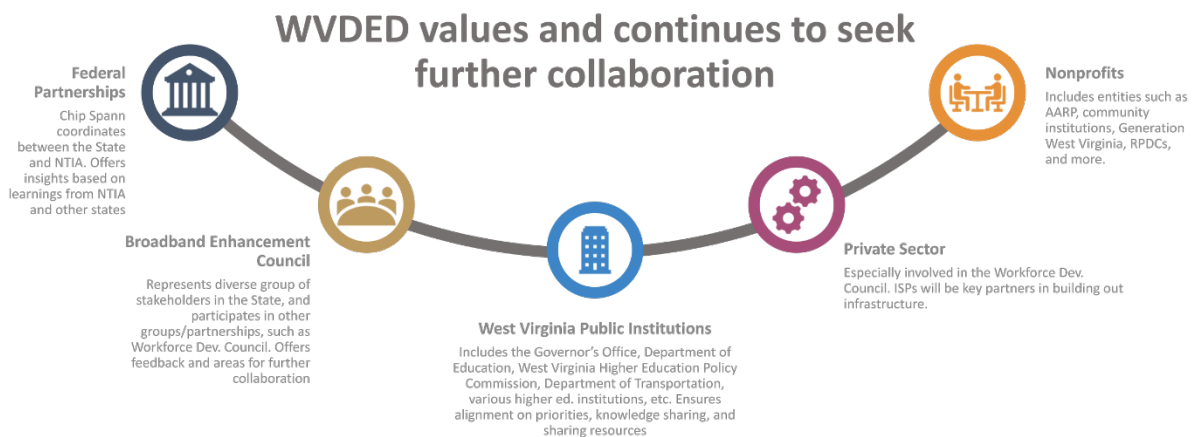
The remainder of this section examines these relationships and WVDED's plans for continuing to engage stakeholders of all types throughout execution of its Digital Equity Plan.

4.1.1 The Core Planning Team and Digital Equity Steering Committee

The WVDED formed the Core Planning Team and Digital Equity Steering Committee at the outset of its digital equity efforts. The Core Planning Team was created to assist WVDED in all aspects of developing and drafting the Five-Year Action Plan and Digital Equity Plan. This included research, outreach, material creation, and drafting as needed. The Steering Committee worked closely with the Core Planning Team to provide guidance, advice, and recommendations. The Committee provided valuable information about digital equity efforts across the state and other organizations that could aid digital equity efforts.

Members of Core Planning Team include representatives from Tilson Technology Management; the Marshall University Center for Business and Economic Research (CBER); West Virginia University's Startup West Virginia, Data Driven West Virginia, Land Use and Sustainability Law Clinic, and Survey Research Center; and WVDED. Under the guidance of the Steering Committee, WVDED and the Broadband

Enhancement Council are coordinating outreach activities, Digital Equity Plan development, and long-term plan implementation.

The Steering Committee also includes representatives of organizations that serve covered populations including AARP West Virginia, Generation West Virginia, the West Virginia Library Commission, and the West Virginia Broadband Enhancement Council. The Committee meets monthly and provides input on the West Virginia Digital Access and Equity Survey, RPDC Community Engagement Plans, the Digital Equity Subgrantee Pilot Program, and the West Virginia Digital Equity Plan.

4.2 Past Coordination Efforts

The WVDED works closely with the West Virginia Broadband Enhancement Council to expand broadband throughout West Virginia. The West Virginia Broadband Enhancement Council was created in 2017 and is advisory to the WVDED Office of Broadband. The Council has 13 voting members and a Democratic and Republican appointee from both the West Virginia State Senate and House of Delegates. The four additional appointees serve as ex officio, nonvoting advisory members. The Council conducts a regular meeting on the second Thursday of each month, at 10:00 a.m., in the West Virginia Department of Commerce offices in Building 3 at the State Capitol Complex or virtually. The WVDED utilizes this open meeting to provide regular updates to the Council and the public.

The Council builds upon input from numerous state agencies and recognizes the value of representation from urban and rural communities throughout West Virginia. The Council's composition, which includes a cross-section of state agency directors, legislative advisory members, business community leaders and both urban and residential users, ensures that multiple voices are heard, that West Virginia's needs are represented, and that viable solutions are thoughtfully pursued.

The Council places a primary emphasis on the development of broadband infrastructure in unserved and underserved areas of the State as outlined in West Virginia Code § 31G-1-1, et seq.[68]

4.2.1 Internet for All West Virginia Kickoff Conference

On February 1, 2023, WVDED and the West Virginia Broadband Enhancement Council co-hosted the Internet for All West Virginia Kickoff Conference in collaboration with the Core Planning Team. The event served as the official announcement of West Virginia's Participation in the Digital Equity Act and the BEAD Program. WVDED and the Broadband Enhancement Council designed the conference to build awareness about the Digital Equity Act and BEAD programs, recognize groups that are advancing digital equity and broadband infrastructure in West Virginia, and provide a roadmap for plan development and stakeholder engagement.

A broad range of organizations attended the conference, including the RPDCs; community action groups, community-based organizations, and community services providers; statewide public libraries; senior centers and organizations that serve aging individuals; civil rights organizations and groups that support

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[68] West Virginia Code, § 31G-1-1, et seq, http://www.wvlegislature.gov/WVCODE/code.cfm?chap=31G&art=1.

racial and ethnic minorities; rural health organizations; groups that serve English learners, low-literacy populations, youth, and covered households; and statewide reentry councils.

The Conference also provided an opportunity for the WVDED to recognize the leadership efforts of organizations to bridge the digital divide and enhance broadband infrastructure. Seven entities received the 2023 Champions of Connectivity Award, which recognizes entities that have taken notable steps in bridging the digital divide. This year's awarded were:

Black By God

Generation West Virginia

Innovative Community Solutions

Morgantown Public Library System

Mountain State Digital Literacy Project

Region 1 Planning and Development Council

Region 4 Planning and Development Council

4.2.2 Collaborating with State Agencies

As part of plan development, the Core Planning Team conducted a series of meetings with key representatives of state agencies that serve one or more covered population. The intent of the meetings was to create a joint strategy to catalyze the state agencies' goals for the BEAD and Digital Equity Plans.

Participating Agencies

- West Virginia Department of Veterans Assistance
- West Virginia Department of Transportation
- West Virginia Department of Environmental Protection,
- West Virginia Department of Homeland Security
- West Virginia Department of Tourism
- West Virginia Bureau of Senior Services
- Herbert Henderson Office of Minority Affairs
- West Virginia Department of Health and Human Resources
- West Virginia Department of Education

Working with its partners, listed in Figure 15, the Core Planning Team provided an overview of the Digital Equity Act and BEAD Programs which included the overall funding goals of both programs, alignment between the Digital Equity and Five-Year Action Plans, and the status of the development of each plan; shared information about accomplishments to date; and strategies for stakeholder and community engagement.

In addition to the programs update, the Core Planning Team requested a collaboration with state agencies to help share information about ACP, the Digital Access and Equity Survey, and upcoming listening sessions. In many cases, leaders at each of the state agencies connected the Core Planning Committee to the appropriate individuals within the agencies to provide feedback or disseminate information about ACP, the DAE Survey, or listening sessions on behalf of WVDED. The exchange of ideas resulted in suggestions by agency representatives about how best to connect with the covered populations the agencies serve. Conversations with agency members also provided insight into the challenges faced by covered populations—further informing WVDED's efforts.

4.2.3 Outreach to Community Organizations

Under the direction of the WVDED, the Core Planning Team conducted outreach to local, regional, federal, and national organizations that directly or indirectly serve covered populations. These organizations provided insight for the development of the Digital Equity Plan. Below is a comprehensive list of organizations that have provided strategic guidance to the Core Planning Team.

Figure 15: Organizations that Provided Guidance to the Core Planning Committee

Organizations That Provided Guidance to the Core Planning Committee

- Morgantown Public Library System
- Appalachian Regional Commission
- Herbert Henderson Office of Minority Affairs
- West Virginia Department of Education
- West Virginia's 11 RPDCs
- Innovative Community Solutions
- Mountain State Digital Literacy Project and Learning.com
- West Virginia Community Health Worker Workforce Advisory Consortium
- Digitunity
- EducationSuperHighway and 50 State
- ConnecTrain Corp and U.S. Economic Development Administration
- Housing and Urban Development Charleston Field Office
- West Virginia Economic Justice Project
- Communication Service for the Deaf
- National Skills Coalition
- Comcast

4.2.4 Statewide Listening Sessions

The WVDED and the Broadband Enhancement Council recognize the value of engaging West Virginia's 11 RPDCs. The RPDCs are multi-county organizations that focus on facilitating and coordinating community-driven, regionally-driven economic development. The RPDCs are trusted community partners with a statewide reach and close community connections.

The RPDCs were trained to facilitate virtual and in-person listening sessions for West Virginia's covered populations and communities. The listening sessions were designed to provide the Core Planning Team with critical information for West Virginia's Digital Equity and Five-Year Action Plans.

Each RPDC was provided with training and a Listening Session Toolkit. This ensured that facilitators had a shared understanding of session goals, and that feedback was recorded uniformly. The toolkit included:

Components of the Toolkit

- Information about West Virginia's Digital Equity Plan and Five-Year Action Plan
- A list with key terms and definitions
- A contact list of digital equity organizations in West Virginia
- A scope of work and a best practices document
- Frequently asked questions (FAQ)
- A listening session questions document
- A link to the listening session reporting form

Listening session feedback was recorded anonymously and submitted by the RPDCs through a Google Form.

The RPDCs hosted a total of 145 listening sessions and other public engagement events over a four-month period in 2023. A total of 1,967 West Virginians participated in the sessions—all members of one or more covered populations – with an average of 11.9 participants per session (attendance ranged from 1 to 178 participants). Many members of the Core Planning Team also attended the listening sessions. Please see Section 3.3.1 for more details.

4.2.5 Marketing and Communications Plan

The West Virginia Department of Commerce Communications team (Commerce Communications) worked with the Core Planning Team to develop a marketing and communications plan to broadly share information about the Digital Equity Act and BEAD Programs. Commerce Communications also assisted with disseminating the schedule and locations of listening sessions, instructions about how to complete the Digital Equity Asset Inventory Form, shared information about Digital Equity Grant opportunities, invited participation in the online and paper survey, and more. Importantly, Commerce Communications facilitated ongoing dialogue with the Governor's Office, managing press releases and proclamations for media release to elevate the importance of West Virginia's digital equity initiative.

The marketing and communications plan capitalized on multiple communications channels to reach West Virginia's covered populations and communities, including the Internet for All West Virginia website, social media, radio advertising, and traditional print. The Core Planning Team also leveraged the networks and dissemination channels of partner organizations that work with covered populations, including the Digital Equity Steering Committee.

4.2.6 Internet for All West Virginia Website

The Internet for All West Virginia website, which was launched in February 2023, was developed to disseminate information about West Virginia's participation in the Digital Equity Act and BEAD Programs and provide a centralized location to engage with stakeholders and communities. The website includes information about how to enroll in the Affordable Connectivity Program, upcoming events and listening sessions, guidance on completing Consumer Complaint with the West Virginia Office of the Attorney General, the Core Planning Team and Digital Equity Steering Committee membership, and a link to the West Virginia Digital Access and Equity Survey.

The DAE Survey, as detailed in Section 3.2, was designed to collect information from statewide organizations, agencies, offices, and businesses that improve digital equity in West Virginia. This information helped inform the State's digital equity asset inventory. The Core Planning Team, in collaboration with the West Virginia Department of Commerce Communications Team, will continue to update the Internet for All website throughout the implementation of the Digital Equity Act and BEAD Programs.

4.2.7 Online and Paper Surveys

In addition to the statewide listening sessions, the Core Planning Team gathered input from West Virginia's covered populations and communities through online and paper surveys developed by TPMA. The Core Planning Team engaged with TPMA to develop the West Virginia Broadband Survey, as discussed in Section 3.3.2. The survey was intentionally designed to collect responses that would add additional context to previous findings and contact individuals that might not have been able to attend the RPDC listening sessions.

As with the rest of the data collection plan, this process is in line with WVDED's focus on meeting people where they are. The Digital Equity Steering Committee and the WVU Survey Research Center provided feedback during the creation of the survey. TPMA worked with the WVDED, the Core Planning Team, and the Digital Equity Steering Committee to identify potential distribution lists and strategies for reaching unconnected West Virginians, including through U.S. Mail surveys. The survey closed on August 16, 2023. Results from this survey have been incorporated into the needs assessment. These results will also further inform West Virginia's BEAD and Digital Equity initiatives.

The survey requested demographic information from respondents so their covered population status could be determined. Demographic information gathered through the survey included race, household income, age, education level, English learner status, veteran status, general household location info, disability status, and more. Following the demographic screening, the survey requested information on the respondent's relationship to broadband service and internet-enabled technology. Specifically, this section asked questions on internet usage, digital skill level, service connection type, service connection speed, service cost, satisfaction with service, barriers, device usage, affordability program knowledge, and

more. By gathering this information, WVDED and TPMA were able to conduct meaningful analysis, relating important digital equity data to covered individuals.

Much could be determined from the survey data; key findings in the analysis shed further light on barriers to digital equity in West Virginia. Complementing findings from the RPDC listening sessions, the statewide survey's most prominently reported barriers were *lack of broadband service availability*, *available but unreliable service*, and *high cost of broadband service*. Approximately half of the West Virginians surveyed reported paying between $59.99 and $119.99 monthly for internet service. Further detailing their struggle, most West Virginians surveyed reported dissatisfaction with their internet speed, reliability, and internet service provider

The data is clear: West Virginians are spending too much money for too little in return.

4.3 Key Topics and Recommendations from Outreach Activities

The Core Planning Teams outreach efforts resulted in a robust list of key topics and recommendations for plan implementation.

Digital Navigator Programs
Expand Digital Navigator Programs to leverage public library staff to provide technology training and access to online services.

Coordinate with Existing Programs
- Align with the West Virginia Department of Education's effort to collect digital equity data
- Outreach to programs supporting justice impacted individuals and the families of the incarcerated
- Establish connections and partnerships with free, low-cost, and refurbished internet device providers
- Work with the West Virginia Commission for the Deaf and Hard of Hearing to encourage the use of online accessibility functions to the private sector
- Capitalize on the state's housing authority's bi-annual conferences for ACP education
- Expand participation in ACP with outreach to USDA Supplemental Nutrition Assistance program recipient households and by engaging with West Virginia Department of Education Title I coordinators
- Engage with Reentry Resources supporting formerly incarcerated individuals

Additional Targets for Outreach
- Aging individuals that raise their grandchildren
- Health departments
- Housing authorities
- Food banks
- West Virginia Human Rights Commission
- The Partnership for African American Churches
- The REACH Initiative/West Virginia Reentry Councils
- Workforce West Virginia
- West Virginia Alliance of Recovery Residences
- Jobs and Hope West Virginia
- The Appalachian Prison Book Project
- Catalyst Ministries

4.4 Plan Implementation: Partners

The Digital Equity Steering Committee and the Core Planning Team have identified many groups in West Virginia that have either demonstrated interest in partnering with the WVDED or have committed to be engaged in different phases of the plan's implementation. Below is a preliminary working list of entities the WVDED plans to engage in the execution of the Digital Equity Plan. The WVDED anticipates that additional implementation partners will be identified throughout this process, including through the West Virginia Digital Equity Pilot Program

Groups That Serve Covered Populations and Lead Digital Equity and Inclusion Initiatives

As detailed in Section 3.2, there are many groups in West Virginia that provide Digital Equity programs to members of covered populations, including digital literacy and digital skills training, public computer labs, public networks, digital navigator programs, subsidized or low-cost devices, and loaner/computer hotspots programs.

A preliminary list of state agencies and organizations that the WVDED has identified, through its digital equity asset inventory, as potential collaborators for implementation of the West Virginia Digital Equity Plan follows:

Covered Households

- West Virginia Department of Health and Human Resources: ACP awareness, promotion, and enrollment
- FCC's Affordable Connectivity Program: Subsidy for the payment of an internet subscription; subsidy for purchasing an internet-enabled device.
- EducationSuperHighway: ACP awareness, promotion, and enrollment

Incarcerated Individuals

- West Virginia Division of Corrections and Rehabilitation: Outreach to incarcerated individuals; ACP awareness and promotion.
- Workforce West Virginia: Access to internet-enabled devices; digital literacy training (Google's Career Readiness for Reentry).
- WVDE West Virginia Schools of Diversion & Transition: Outreach to incarcerated and formerly incarcerated individuals; digital skills training.
- The REACH Initiative/West Virginia Reentry Councils: Outreach to incarcerated and formerly incarcerated individuals; ACP awareness and promotion.

Individuals with Disabilities

- West Virginia Division of Rehabilitation Services: Outreach to individuals with disabilities; ACP awareness and promotion; internet-enabled devices; digital skills training
- WVU Center for Excellence in Disabilities: Internet-enabled devices

Rural Residents

- Mountain State Digital Literacy Project: Digital literacy training to K-8, adults, and older adults
- Morgantown Public Library System: Digital navigator program; access to public computers; access to Wi-Fi hotspots/networks
- Putnam County Library System: Access to public computers, Wi-Fi hotspots/networks, mobile Wi-Fi hotspot, and internet enabled-devices
- Gassaway Public Library: Digital skills training; access to public computers; access to Wi-Fi hotspots/networks
- Mary H. Weir Public Library: Access to public computers; access to Wi-Fi hotspots/networks; technical support
- Career Tech West Virginia: Digital skills training
- Grow with Google Initiative West Virginia Participants: Digital skills training.
- Randolph County Housing Authority, Homeownership Center, Highland Community Builders, and Rural LISC: Digital navigator program
- Community Centers: Access to public computers; access to Wi-Fi hotspots/networks

Aging Individuals

- West Virginia Bureau of Senior Services: Outreach to aging individuals; ACP awareness and promotion
- AARP West Virginia: ACP awareness and promotion; OATS/Senior Planet free one-year licenses
- Senior Centers: Digital literacy training; internet-enabled devices; access to Wi-Fi hotspots/networks
- Public Libraries: Digital literacy training; access to public computers; access to Wi-Fi hotspots/networks

Veterans

- West Virginia Department of Veterans Assistance: Outreach to veterans; ACP awareness and promotion
- CyberGenerations: Internet-enabled devices; digital skills training
- West Virginia Veterans Upward Bound: Digital skills training; access to public computers
- Tech For Troops: Internet-enabled devices; digital skills training
- West Virginia Veterans Home: Access to public computers; access to Wi-Fi hotspots/networks

Individuals with a Language Barrier

- West Virginia Department of Education Adult Education/Literacy Programs: Outreach to individuals with a language barrier; digital skills training
- Literacy Volunteers of Monongalia and Preston Counties: Digital skills training; access to public computers; access to Wi-Fi hotspots/networks
- Summers County Adult Education: Digital skills training; access to public computers; access to Wi-Fi hotspots/networks

Racial or Ethnic Minorities

- Herbert Henderson Office of Minority Affairs: Outreach to racial or ethnic minorities; ACP awareness and promotion
- Black by God: Outreach to racial or ethnic minorities; ACP awareness and promotion
- Innovative Community Solutions: Digital skills training
- West Virginia State University: Digital skills training (Grow with Google Career HBCU Career Readiness Program)
- West Virginia NAACP Chapters: Outreach to racial or ethnic minorities; ACP awareness and promotion

4.5 Future Coordination Efforts

As noted in Section 4.2 WVDED has coordinated a significant number of stakeholders representing all parts of society. In Sections 4.3 and 4.4, WVDED highlights organizations that have either been recommended for collaboration or that it already plans on engaging with throughout the implementation of the Digital Equity Plan. These entities include representatives from each covered population within the State. Looking ahead, WVDED will take the steps outlined in the remainder of this section to engage with newly and previously identified organizations.

Solicitation of Feedback

WVDED always remains available to receive feedback from stakeholders via email, phone, or mail. As this feedback arrives, WVDED will swiftly respond to it, either in reply or through actions addressing concerns that may have been raised. Throughout the implementation of the Digital Equity Plan, WVDED will—in all its communications—continue to welcome all feedback. Simultaneously, WVDED will directly request information from stakeholders on topics relevant to their areas of expertise or in general. For example, to solicit feedback from all aforementioned stakeholders, WVDED published its BEAD Non-Deployment Program Procedures for public comment on November 15, 2023. These program procedures cover the non-deployment programs, which directly overlap with the efforts discussed throughout the Digital Equity Plan. WVDED sought and received public feedback and has already begun incorporating it into its revisions. WVDED will continue to hold public comment periods whenever possible. In some cases, it may directly reach out to entities with specific knowledge and experience for feedback.

Information Sharing

WVDED is committed to a transparent Digital Equity implementation process, in line with the spirit of the BEAD and Digital Equity Programs. WVDED already provides regular updates on the progress of the Digital Equity program to the public through its monthly Broadband Enhancement Council meetings. During these meetings, members of the public, including the entities outlined in Sections 4.3 and 4.4, are encouraged to raise questions—registered for public comment. However, registration for public comment is not required for simply attending. Some of the entities that WVDED has engaged with, or that are included in its lists of potential collaboration candidates, already attend these meetings.

WVDED is also assessing the viability of a regular newsletter to update the aforementioned entities and the wider public on the latest developments related to the Digital Equity plan. If WVDED develops a newsletter, it will add as many of the listed entities as possible to the mailing list and will also allow any member of the public to sign up. Both directly and implicitly, WVDED will use this as an opportunity to solicit feedback from those with relevant knowledge and experience.

Meetings with Stakeholders

As noted earlier in Section 4 and its semi-annual reports, WVDED has met with a wide array of stakeholders to gain collect information on the needs of West Virginia residents and how to best address them. As WVDED moves into the implementation stage of the Digital Equity plan, it will reach out to and meet with many of these stakeholders to:

- provide them with updates;

- encourage them, when applicable, to participate in some of the implementation programs associated with the Digital Equity plan;
- solicit additional information that will help WVDED successfully meets its digital equity goals; and more.

Assistance with Future Digital Equity Surveys

WVDED intends to conduct the Digital Equity Survey, as discussed in Section 3.3.2, at least one more time throughout the implementation of the BEAD and Digital Equity programs. WVDED will use the results of these surveys to monitor the progress of its programs and modify its strategies as appropriate. In carrying out these future surveys, WVDED will reach out to both the entities it has engaged with and those it plans to engage with, encouraging them to use their networks to distribute the survey to as many participants as possible. This approach will ensure that each of the eight covered populations is sufficiently represented in the survey results.

ACP State Cohort

Discussed in greater detail in Section 5.1, EducationSuperHighway has proposed a collaboration with WVDED through the group's ACP State Cohort Model. This model aims to further support digital equity and internet affordability. It would unite trusted stakeholders that have existing relationships with ACP-eligible households – such as libraries, schools, housing authorities, faith-based, and community-based organizations – and equip them with tools and resources to overcome barriers to ACP adoption. Should WVDED decide to implement this model, it will invite many of the entities outlined in Sections 4.3 and 4.4 to participate. This would amplify the effectiveness of the ACP program by leveraging their extensive networks to reach individuals who fall within, or represent residents who fall into, the covered population categories.

4.6 Public Comment

On July 17, 2023, WVDED published a draft version of the Digital Equity Plan for public comment. The comment period remained open for a total of 35 days. Through social media and traditional outreach methods, such as physical postings, WVDED invited all West Virginians, including all covered populations, to provide public comment prior to the publication of the final plan. To solicit feedback, WVDED linked the draft Digital Equity Plan to the Internet for All West Virginia website and the Broadband Enhancement Council Website and distributed physical copies of the Plan to the public via the Regional Planning and Development Councils. The public could provide feedback via email, direct phone call, or preferably, through a short online form. Respondents were prompted for basic information about themselves, in case they had immediate questions that needed answered and for assessing geographic representation across the State, and were provided with an open-ended comment box. In addition to seeking feedback from the general public, WVDED provided a copy of the plan to the Digital Equity Steering Committee. The following subsections provide an overview of the feedback from these efforts.

4.6.1 Feedback from the General Public

Figure 16: Map of Submitted Public Comment Quantity by West Virginian Zip Code
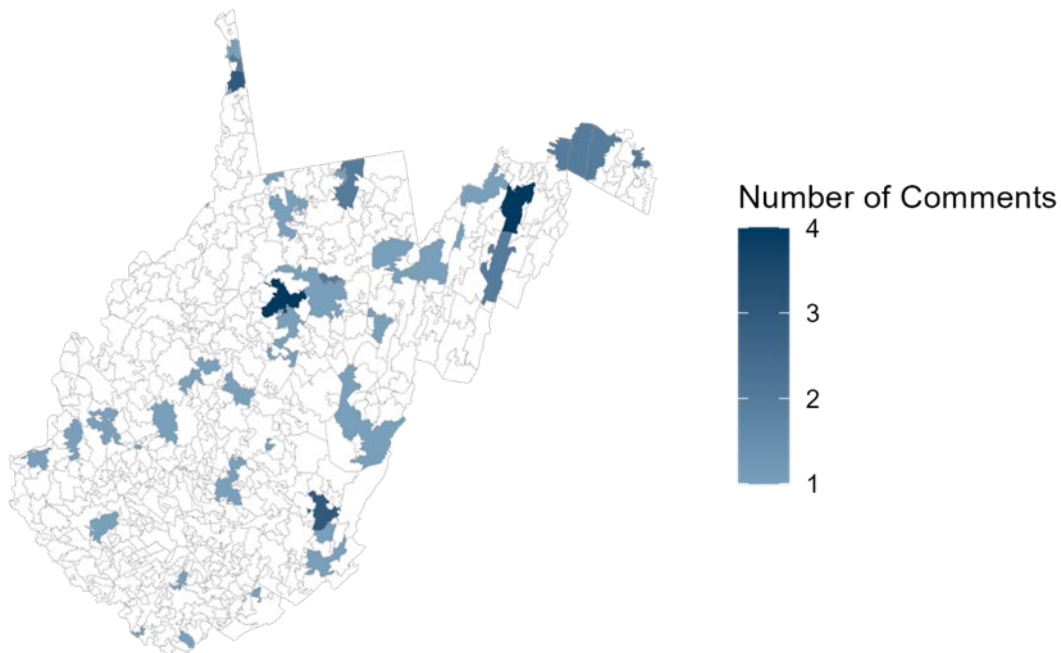
Source: Data Driven WV

In total, 82 West Virginians submitted comments during the public comment period. All forms of comment, whether email, phone call, or web form submission were considered. Figure 16, displays the number of submitted comments by the zip code provided by the respondent. Critiques, praises, and requests alike were carefully considered and adopted, as necessary, into the Digital Equity Plan to ensure alignment with the priorities of the West Virginian people. Table 2 displays the most commonly discussed topics during the public comment period. Additionally, WVDED has amassed an archive of comments

containing requests for aid at specified locations. WVDED will continue to reference the location-based comments as it considers needs and gaps across the State.

Table 2: Common Public Comment Subject Table

Subject	# Comments	% Comments
Poor Broadband Service Quality or Reliability as a Gap or Barrier	32	39.00%
Location or Topography as a Gap or Barrier	22	26.80%
ISP Business Practice (Other Than Monopolies) as a Barrier	20	24.40%
Affordable Connectivity Program as an Effective Support	11	13.40%
Broadband Service Affordability as a Barrier	10	12.20%
Support for K-12 and Academic Education	9	11.00%
ISP Monopolies or Lack of Competition as a Barrier	7	8.50%
Device Availability as a Gap or Device Distribution as a Solution	6	7.30%
Support for Senior Citizens	6	7.30%
Digital Skills Training	6	7.30%
Public Access Locations to Supplement Availability	4	4.90%

The subjects raised during the public comment period adhere quite well to past outreach results and goals set forth in West Virginia's Digital Equity Plan and BEAD Five-Year Action Plan. In other words, WVDED is proudly in alignment with the digital equity and deployment needs of the State's residents. Some comments provided valuable input on ways to enhance West Virginia's Digital Equity Plan; changes have been made accordingly. Table 3 provides a crosswalk mapping the common public comment categories to their corresponding information in the Digital Equity Plan and BEAD Five-Year Action Plan. The crosswalk also highlights the areas where changes were made based on public comments.

Table 3: Common Public Comment Subject Crosswalk

Subject	Comments and Location in Digital Equity Plan
Poor Broadband Service Quality or Reliability as a Gap or Barrier to Adoption	Among all topics addressed by West Virginians during the public comment period, *poor broadband quality or reliability* was the most consistently addressed issue. 1. For information on relevant outreach, see **Section 1.2** of the Digital Equity Plan 2. For information on WVDED's strategy for improving broadband quality in West Virginia, see **Section 5.2** of West Virginia's BEAD 5-Year Action Plan

Location or Topography as a Gap or Barrier to Availability	Many West Virginians relayed difficulty accessing quality broadband service because they reside in less-populated areas or regions where infrastructure deployment is challenged by topography. This category also includes participants who were curious to learn more about WVDED's strategy for location prioritization. 1. For information on WVDED's strategies for digital equity funding location prioritization, see **Section 5.1.2** of the Digital Equity Plan 2. For information on WVDED's strategies for broadband infrastructure deployment location prioritization, see **Section 5.2** of West Virginia's BEAD 5-Year Action Plan 3. For information on WVDED's assessment of geographic challenges, see **Section 4.6.2** of West Virginia's BEAD 5-Year Action Plan
ISP Business Practice (Excluding Competition Discussions) as a Barrier to Adoption	Participants in this category expressed dissatisfaction with their current internet service provider for reasons including, but not limited to, poor customer service, behavioral ethics, and refusal or inability to provide quality service. These gaps will be remedied by BEAD deployment efforts and Digital Equity goals set forth by WVDED. 1. For information on relevant digital equity goals, see **Section 2.1** of the Digital Equity Plan 2. For information on relevant BEAD deployment efforts, see **Section 5.2** of West Virginia's BEAD 5-Year Action Plan
Affordable Connectivity Program as an Effective Support	The ACP garnered much interest and approval from public comment participants. WVDED appreciates the positive feedback and is glad to serve the West Virginian people. **Commenters in this category also expressed questions and concerns about ACP eligibility.** Regarding the concerns, particularly about the ACP outreach strategy, WVDED will consider these as it formulates its larger digital equity and BEAD program design. 1. For information on WVDED's digital equity strategies for ACP awareness and enrollment, see **Section 5.1.1** of the Digital Equity Plan 2. For information on ACP enrollment eligibility, see West Virginia's Department of Health and Human Resources website
Broadband Service Affordability as a Barrier to Adoption	Many commenters expressed that the high cost of broadband service in their area either hindered or prevented their access. Making broadband affordable for all West Virginians is a key goal of both West Virginia's Digital Equity Plan and BEAD Plan. For information on strategies to promote broadband service affordability, see **Section 5.1.1** of the Digital Equity Plan and **Section 5.2** of West Virginia's BEAD 5-Year Action Plan

Support for K-12 and Academic Education	Many commenters expressed approval for the practical application of broadband service in K-12 and higher education. WVDED appreciates the positive feedback and is proud to serve the students of West Virginia. 1. For WVDED's assessment of education needs and assets, see **Section 1.2** of the Digital Equity Plan 2. For information on strategies to promote broadband service availability, see **Section 5.1.1** of the Digital Equity Plan and **Section 5.2** of West Virginia's BEAD 5-Year Action Plan
Perceived of internet service provider Monopolies or Lack of Competition as a Barrier	Participants in this category expressed dissatisfaction concerning a lack of perceived competition among internet service providers in their region. WVDED is working to remedy this through thoughtful BEAD deployment efforts and digital equity goals set forth by this Digital Equity Plan. 1. For information on relevant digital equity goals, see **Section 2.1** of the Digital Equity Plan 2. For information on relevant BEAD deployment efforts, see **Section 5.2** of West Virginia's BEAD 5-Year Action Plan
Device Availability as a Gap or Device Distribution as a Solution	Participants in this category expressed a need for device distribution, lending, or recycling programs in West Virginia. 1. For information on WVDED's plans to expand device availability, see **Section 5.1.1** of the Digital Equity Plan 2. As WVDEC considers the possibility of and options for a device distribution program, it will factor in these comments
Support for Aging Individuals	Commenters in this category highlighted the importance of supporting aging individuals in West Virginia. 1. For information on WVDED's plans to partner with senior centers for skills training, see **Section 5.1.1** of the Digital Equity Plan 2. For information on relevant outreach and engagement with senior centers, see **Sections 4.2.1 and 4.2.2** of the Digital Equity Plan 3. WVDED will consider many of the recommendations, especially for device distribution to aging individuals, as it formulates its final strategy
Digital Skills Training	Commenters in this category highlighted the importance of opportunities for digital skills training programs. For information on planned digital skills enhancement efforts, see **Section 5.1.1** of the Digital Equity Plan

Public Access Locations to Supplement Availability	Commenters in this category highlighted the importance of publicly available broadband serviceable locations to supplement broadband availability.
	1. WVDED has identified public access locations as an asset to West Virginian digital equity, see **Section 3.2** of the Digital Equity Plan for details
	2. Many public access points are eligible for the digital equity pilot program, see **Section 5.1.1** of the Digital Equity Plan for details

WVDED appreciates the time taken by public comment respondents and extends a sincere "thank you." The input garnered during this process is invaluable and will continue to influence the State's digital equity and broadband planning for years to come.

5. Implementation

WVDED and its stakeholders have developed an implementation plan to successfully meet the goals outlined in this document. This strategy takes a holistic approach and includes activities that address the identified barriers to digital equity. Section 5.1 outlines the overall strategies for accomplishing the objectives outlined in Section 2.1 and discusses the major variable cost identified for completing many of these efforts: drive time and distance. Section 5.2 then offers a timeline for these activities.

5.1 Implementation Strategy and Key Activities

5.1.1 Strategies

Upon completion of the Digital Equity Plan, WVDED will continue working with its existing partners, including the Core Planning Team and Digital Equity Steering Committee to guide plan implementation. In addition, the WVDED will continue outreach to additional stakeholders, agencies and organizations as new initiatives are developed. Together, WVDED and its partners will strive to implement best practices, support a successful DE Pilot Program and increase ACP Outreach.

Best Practices

Through its involvement in organizations and groups that promote digital equity, the WVDED will undertake an analysis of relevant case studies and pilot programs from other states and municipalities throughout the nation. International programs will also be considered for new perspectives and frameworks. For example, a growing body of literature exists on the domains of digital skills from the European Union. One such publication is the Digital Competence Framework for Citizens (DigiComp) that provides a common understanding of digital competence. The latest publication from the Publications

Office of the European Union provides more than 250 new examples of knowledge, skills, and attitudes that help citizens engage confidently, critically, and safely with digital technologies.[69]

Digital Equity Pilot Program

The rest of this section outlines the basic steps that WVDED and other stakeholders will take to accomplish the goals referenced throughout this document. A portion of this work is already underway via the WVDED Digital Equity Pilot Program. The WVDED launched the Digital Equity Pilot Program to help support and expand digital equity initiatives in West Virginia. Applications were accepted until June 15, 2023. This program will be expanded and continued upon receipt of additional funding.

Funds Available: A total of $27,500 is available for this pilot program. Applicants may apply for grants of $2,500 or $5,000. Eligible applicants include units of local government, libraries, community and economic development agencies, educational institutions and programs, and nonprofit organizations.

*Eligible Activities***:** To address West Virginia's internet service gaps and its digital divide, funds will be used to support innovative programs that support, promote, and enhance digital equity in West Virginia. Applications under this announcement will be evaluated on the following criteria:

   a. The degree to which the project will increase economic development in an underserved or unserved area will receive higher priority.
   b. Projects that demonstrate adequate capacity to administer the project will receive higher priority.
   c. Projects that demonstrate detailed and measurable outcomes will receive higher priority.
   d. Projects that demonstrate a high degree of demand from end users for the project services will receive higher priority.

Increased ACP Outreach

The WVDED has received a $400,000 award through the FCC Affordable Connectivity Outreach Grant Program and National Competitive Outreach Program (NCOP) Round 2 to support additional outreach activities.

Each of the boxes below expands on the goals listed in Section 2.1 by providing the key steps required to accomplish them.

ACP Tools Provided by EducationSuperHighway

Throughout the development of the Digital Equity Plan, WVDED has engaged with EducationSuperHighway (ESH), a nonprofit organization dedicated to closing the digital divide. ESH provided recommendations and tools to help this process in West Virginia, including:

   • GetACP.org pre-enrollment tool: This mobile website helps applicants find out if they're eligible for the ACP, determine the easiest way to qualify, identify documents they'll need for the application, and find broadband plans in their area. In addition, the tool provides a personalized

[69] Vuorikari, R., Kluzer, S. and Punie, Y., DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes, EUR 31006 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-48882-8, doi:10.2760/115376, JRC128415.

checklist of documents the applicant should have available when they apply, and key information for enrollment in an internet service plan. The tool supplies a list of low-cost and eligible plans in the applicant's area with direct contact information for providers.

- ACP Enrollment Dashboard: An easy-to-navigate dashboard of state and city enrollment data. Users can navigate to a state, see city-specific data, filter, and download reports. With data updated monthly, the dashboard can help local leaders effectively target ACP awareness and adoption efforts, and demonstrate the impact that programming is having on ACP adoption.

EducationSuperHighway has also proposed collaboration with WVDED through the group's ACP State Cohort Model. The cohort model is meant to further support digital equity and internet affordability. The cohort would unite trusted stakeholders that have existing relationships with ACP-eligible households – such as libraries, schools, housing authorities, faith-based, and community-based organizations – and equip them with tools and resources to overcome barriers to ACP adoption.

Moreover, this cohort would convene those organizations that have the greatest trust and relationships with those they serve, many representing the identified covered populations. Concretely, the ACP cohort would convene a series of workshops intended to promote ways in which leveraging the ACP contributes to achieving digital equity across the State. Such a cohort can provide a collective framework to ensure the creation and sustainability of an ecosystem of stakeholders working on digital equity initiatives, with a particular focus on the ACP.

This group would strive to create a collaborative space where organizations can learn from and inform one another's work. It should also promote coordination between the State and other stakeholders, alleviating the unintentional creation of silos, gaps, and/or redundancies in programming.

As of the date of this draft, Digital Equity Plan discussions are ongoing regarding the use of EducationSuperHighway's ACP State Cohort model for promoting ACP enrollment and stakeholder collaboration. WVDED is strongly considering adopting ESH's ACP State Cohort Model and actively using its various tools for Plan implementation.

Gaps in existing efforts

As noted previously, there are few to no stand-alone digital equity plans at the municipal, local, and regional level, so this implementation strategy required a comprehensive design to cover gaps that presently have few to no alternative solutions. The lack of direct plans, itself, was a major gap considered during planning. The State Digital Equity Plans goals and their KPIs have been designed to reach a wide range of people equitable, since needs are spread across populations.

There are some aligned or partially aligned efforts in state, regional, and private fields, as identified in Section 2.2 and the asset inventory, WVDED was able to identify gaps at these levels. The following list is of the three most prominent:

1. Some development plans at the state, regional, and private level include digital inclusion efforts, however, most do not address covered populations equitably if at all.
2. When multiple efforts focus on one population, they tend to overrepresent one barrier, such as skills training for individuals over age 60.

3. Broadband infrastructure deployment is an important need for all West Virginians, including all covered populations, but state, regional, and private plans do not have the resources nor capacity to sufficiently see this through.

To cover these gaps, the goals below have been designed with KPIs that will measure the equitable representation of all covered populations, cover multiple barriers for each covered population, serve the historically underserved, and incorporate BEAD infrastructure deployment efforts as a goal to realizing digital equity.

Goal 1: Realize Affordable Connectivity

Objective 1.1: Increase enrollment in the Affordable Connection Program, contingent on the continued funding for the program

1.1.1 Because WVDED will have information on what houses will receive broadband connections through the BEAD program, it will generate a list of homes in the affected areas and distribute mailers with information on ACP. These mailers will be distributed in tranches leading up to service availability. WVDED will pursue additional funds for these efforts through the FCC's NCOP.

1.1.2 WVDED will create standardized procedures from internet service providers to use when individuals sign up for service to ensure that those who qualify for ACP are at least aware of it. WVDED will then meet with the internet service providers to ensure buy-in and that these procedures are carried out.

1.1.3 Scale the West Virginia 211 to provide information about the ACP to all callers.

1.1.4 Work with State Government Partners to develop a process for automatically enrolling qualified citizens in ACP as recipients of other income-based assistance programs.

1.1.5 Leverage with organizations who serve covered populations, Census data, drive time to an interstate, and further research to map out prioritized areas for ACP outreach and activities based on quantity of each covered population. For example, if it were determined that a large amount of veterans live in Southern Tucker County, this area would be one prioritized area.

Sustainable Impact: Provided ACP funding continues, this goal is sustainable. WVDED will explore other options if it appears this will no longer be the case. Once West Virginians have the knowledge and capacity to enroll in ACP, they will continue to reap the benefits as long as ACP is funded.

Objective 1.2: See BEAD Five-Year Plan

See BEAD Five-Year Plan.

Goal 2: Secure Device Access and Affordability

Objective 2.2: Create a sustainable program to provide device distribution, lending, and recycling

2.1.1 Break down the number of individuals who do not have a computing device into more granular figures, such as by age and which of the target population categories they belong to.

2.1.2 Work with existing partners that have experience managing programs to bring free or low-cost devices to individuals who need them and develop a comprehensive plan that addresses device procurement, advertisement, distribution, and maintenance.

2.1.3 Establish channels for procuring devices, such as donations from businesses and individuals, low-cost devices from manufacturers, and avenues for subsidies and Learn to Earn-style programs.

2.1.4 Create device distribution channels by partnering with a minimum number of entities in localities with individuals who need devices. For instance, work with the Department of Education to create pathways to device ownership after graduation.

2.1.5 Conduct an RFP process for a partner to assist WVDED in managing vendor relationships, facilitate statewide logistics and acquisition, and liaise with WVDED.

2.1.6 Conduct a competitive procurement process for eligible state or regional organizations including but not limited to Regional Planning and Development Councils, the West Virginia Library Association, WVU Cooperative Extension, school districts, and organizations that support covered populations to distribute internet-enabled devices.

2.1.7 Explore avenues for device lending programs to fill gaps that ownership cannot.

2.1.8 Form device recycling program for end-of-life devices and tie this to other state and county-level recycling efforts.

2.1.9 Develop a campaign to advertise the availability of these devices to individuals who need them.

Sustainability Strategy: Execute the plan, adjust the plan as necessary, and provide resources to ensure the plan's long-term sustainability.

Objective 2.2: Ensure citizens receive technical assistance for their newly acquired devices

2.2.1 Improve access to technical support by collaborating with libraries and other community organizations to implement a statewide Digital Navigator Program.

2.2.2 Work with organizations serving each covered population, use Census data, and other research to discern lists of CAIs which exist in areas with above average quantities of each covered population. Ensure that these CAIs are prioritized in implementation.

2.2.3 Consider providing additional funding to organizations already involved in providing digital navigation or similar services to all West Virginians.

2.2.4 Conduct a competitive grant process to provide non-deployment grants to interested organizations engaged in digital navigator activities across West Virginia.

2.2.5 Conduct an RFP process for an entity to manage distribution and align processes across subgrantees, compile and distribute best-practices and training materials where applicable and facilitate semi-annual convenings of digital navigators.

2.2.6 WVDED will conduct a competitive procurement process to solicit eligible state or regional organizations interested in receiving state contracts to oversee digital navigator services in a wide geographic area.

2.2.7 Consider implementing a Digital Natives model in collaboration with higher education institutions with student volunteers to assist residents with use of internet-enabled devices.

2.2.8 Conduct technology fairs and engage government IT and students studying computer science to provide basic device-use skills.

Sustainability Strategy: WVDED will provide CAIs with the resources and skills necessary to keep their technical assistance programs running beyond implementation.

Goal 3: Elevate Digital Skills and Public Services Accessibility

Objective 3.1: Make digital literacy training in cybersecurity, privacy, telehealth, and more, available to all West Virginians, including all covered populations

3.1.1 Work with communities to identify the organizations and CAIs that best meet their needs, such as public schools, public or multi-family housing authorities, libraries, medical or healthcare providers, community colleges and other institutions of higher education, the state library agency, and other nonprofit or governmental community support organizations

3.1.2 Work with public libraries to launch a statewide Digital Navigator Program for library staff to provide introductory digital skills training to residents

3.1.3 Partner with Digital Navigators to provide digital skills training through senior centers (WV Bureau of Senior Services, etc.) and other community organizations working with covered populations

3.1.4 Explore partnerships with organizations that are conducting related work including the Mountain State Digital Literacy Project

3.1.5 Study models to launch a Peer Learning Program (digital natives to empower West Virginians to educate their family members and friends on digital literacy)

3.1.6 Collaborate with West Virginia Navigate to include digital literacy training providers in the Aging and Disability Resource Network

3.1.7 Conduct a competitive procurement process to solicit eligible state or regional organizations interested in receiving state contracts to oversee digital navigator services in a wide geographic area

3.1.8 Conduct an RFP process for an entity to manage distribution and align processes across subgrantees, compile and distribute best-practices and training materials where applicable and facilitate semi-annual convenings of digital navigators

3.1.9 Conduct a competitive grant process to provide non-deployment grants to interested organizations engaged in digital literacy activities across West Virginia

3.1.10 Partner with an organization to create a user-friendly Digital Citizenship Guide/West Virginia Guide to Technology, in digital and hard-copy formats, tailored to each covered population

3.1.11 Regularly conduct statewide surveys to gauge digital skills of and internet usage by West Virginians; include demographic information in these surveys to ensure that the effect on covered populations can be measured

3.1.12 Leverage existing funds/annual allocations to advance digital equity and inclusion

Sustainable Impact: This goal is inherently sustainable beyond plan implementation. West Virginians who have learned new skills will carry them through life and go on to teach other West Virginians their knowledge if properly supported by the other goals and objectives.

Objective 3.2: Ensure websites and online services hosted by state agencies are accessible for all West Virginians

3.2.1 Work with the Governor's Office to coordinate a request for each state agency to report on the status of compliance with WCAG and Section 508 standards

3.2.2 Work with the Office of Technology to coordinate audits for each state entity website and service page that either does not comply with established standards or is not sure about compliance, assessing compliance and gaps

3.2.3 Coordinate with the Office of Technology to procure an entity to ensure compliance with the aforementioned standards using the results of the audit

Sustainability Strategy: Promote knowledge of WCAG and Section 508 standards to all state agencies and establish guidelines so all future websites adhere to compliance.

Engagement and Partnerships with Relevant Entities

In carrying out the above strategies, WVDED will engage and/or partner with:

a. Workforce agencies such as state workforce agencies and state/local workforce boards and workforce organizations;
b. labor organizations and community-based organizations; and
c. Institutions of higher learning, including but not limited to four-year colleges and universities, community colleges, education and training providers, and educational service agencies.

Workforce Agencies and Labor Organizations. WVDED will engage with a wide range of workforce agencies and labor organizations during the implementation of the Digital Equity plan and related initiatives. As outlined in the Initial Proposal Volume 2, the Workforce Development Council will progress from initial concepts to implementation in coordination with the West Virginia Broadband Enhancement Council. This alignment will enable WVDED to synchronize workforce development activities with the Broadband Council, leveraging the Broadband Council's established framework and resources. The Workforce Development Council includes members from:

- Appalachian Regional Commission
- Blue Ridge Community and Technical College
- Chancellor of the Community and Technical College System
- CityNet
- Communications Workers of America
- Community and Technical College Systems of West Virginia
- Eastern West Virginia Community & Technical College
- Generation West Virginia
- Micrologic, Inc.
- National Electric Contractors Association (West Virginia/Ohio Valley Chapter)
- New River Community and Technical College
- Pierpont Community & Technical College Center for Workforce Education
- Randolph County Development Authority
- Southern West Virginia Community and Technical College
- State of West Virginia Governor's Office
- Three Sixty Strategies, LLC

- U.S. Department of Labor
- West Virginia Department of Commerce
- West Virginia University at Parkersburg
- West Virginia Broadband Enhancement Council
- West Virginia Department of Economic Development
- West Virginia Department of Education - Career Technical Education
- West Virginia Department of Veterans Assistance
- West Virginia Herbert Henderson Office of Minority Affairs
- West Virginia Higher Education Policy Commission
- West Virginia Northern Community College
- West Virginia University
- Workforce Development Board of Kanawha County
- WorkForce West Virginia
- WVCTA - The Internet and Television Association

Furthermore, workforce development organizations, industry associations, and employers may all be considered eligible applicants to the workforce development program, as discussed in the non-deployment programs section of the Initial Proposal Volume 2.

Community-based Organizations and Institutions of Higher Learning. Community-based organizations, including Regional Planning and Development Councils, along with institutions of higher learning, will play pivotal roles in implementing the activities outlined in this section. WVDED will engage with these organizations in three primary ways. First, WVDED will solicit feedback on both the plans for and the actual implementation of the digital equity efforts detailed in this document. As representatives of covered populations and the public at large, these entities can offer valuable insights into the program's effectiveness. Second, many of these entities, such as Regional Planning and Development Councils, the West Virginia Library Association, WVU Extension Service, school districts, and other large organizations supporting digital navigation services, will be eligible to participate in various digital equity efforts, including digital literacy and digital navigator programs. Additionally, entities that may be eligible for the workforce development grant program, as outlined in the Initial Proposal Volume 2, include higher education institutions in West Virginia. Lastly, WVDED will rely on these organizations to help disseminate updates to the public and encourage participation in future Digital Equity Surveys.

5.1.2 Effectiveness Review Strategy

By design, many of the stakeholder engagement and coordination efforts described in Section 4 are incorporable into this Digital Equity Plan's sustainability and effectiveness review strategy during implementation. Regularly occurring meetings, such as the Broadband Enhancement Council meetings, the Digital Equity Steering Committee meetings, the Core Planning Team meetings, and more, will serve as forums for the direction of Digital Equity progress during implementation.

The Broadband Enhancement Council will, in its monthly meeting, continue to host public WVDED updates through implementation. As the State Digital Equity Plan moves into implementation, the content of the meetings will shift toward progress reports, using the Plan as reference. Using the goals, objectives, core activities, and KPIs for specific, measurable detail, key stakeholders, partners, and members of the public will be kept informed and aligned on digital equity activities—solidifying the sustainability of this Digital Equity Plan for years to come. Of course, this format also has the added benefit of providing a floor for plan critique. In the event that members of the Council have concerns about plan direction, strategy, regions reached, or populations served, these meetings provide them an opportunity to lend their voice to the betterment of the State Digital Equity Plan.

The Digital Equity Steering Committee's monthly meetings will serve a similar function to the Broadband Enhancement Council's, but with some differences. These sessions will serve as more detail-oriented internal workshops for Digital Equity Plan strategies. They will leverage the unique perspectives and connections of the public representative and stakeholders from Generation WV, AARP, and the Library Commission, to determine potential risks in plan execution, enhance the strategies present, and accelerate West Virginia toward its digital equity goals.

The Core Planning Team will continue to meet at least weekly to ensure that core activities are carried out efficiently and effectively. This team is to be the most active link between the Digital Equity Plan and the reality of West Virginia. As such, risks to the plan and opportunities for enhancement will be continually considered by the Core Planning Team during their meetings and during their implementation duties. These suggestions will be escalated to the Director of Broadband at WVDED for a decision.

The KPIs of each objective are intended as the central metric from which progress can be measured. At every opportunity, including the ones listed above, the KPIs will be assessed by WVDED and its partners

to drive forward movement of the Digital Equity Plan. By design, the KPIs are trackable using reliable sources of data. Objectives 1.1 and 2.1 are quantifiable using census data. Objectives 2.2 and 3.2 will be built from assessments of their ongoing issues. From these assessments, lists of CAIs and websites that require attention will be prepared, then monitored and updated throughout implementation. Objective 3.1 is a special case that requires a routine survey to check its progress. Potentially every year, WVDED will have the survey conducted to ensure the KPI is progressing toward the goal as planned and reorient implementation strategies if need be.

WVDED keeps a close partnership with its stakeholders. By maintaining scheduled conferences with key stakeholders and the public, the West Virginia Digital Equity Plan can be reliably, regularly evaluated and updated.

5.1.3 Coordination with BEAD Funding

WVDED has developed a strategy for serving BEAD and Digital Equity goals. The strategy consists of tiered goals, which will be implemented contingent on the amount of non-deployment funding available in West Virginia's BEAD budget. The more non-deployment funding available, the more Digital Equity and BEAD priorities can be added into implementation. See West Virginia's BEAD Initial Proposal Volume II for a complete set of details.

As previously stated, each program outlined above aligns with a combination of BEAD Five-Year Action Plan and State Digital Equity Plan strategic goals and objectives. Within the context of the State Digital Equity Plan:

a) the Digital Literacy and Digital Navigator Program aligns with Objectives 2.2 and 3.1; and
b) the Digital Device Program aligns with Objectives 2.1 and 2.2.

WVDED does not expect to receive funding from any other federal or private sources.

5.1.4 Prioritizing Need Through Analysis of Drive Time

West Virginia has the highest percentage of covered populations in the nation, 97%, as defined by the Digital Equity Act.[70] Given the large proportion of residents belonging to covered populations, it is critical to determine where the need for digital equity resources is most acute. Resources are finite, so funding must be keenly directed. The Core Planning Team, supported by the leadership of Data Driven WV, pursued a method of accurately, objectively, and comprehensively categorizing areas of need for digital equity in West Virginia. Note that this will not be the only method that WVDED uses to determine how funds should be allocated. Rather, it will provide a tool to look at possible allocation models from a more objective vantage.

Methodology
Quickly, the State determined that simply using census data or the funding formula used by NTIA to determine state funding allocations would not suffice. The federal formula's reliance on household-level census data presents a critical limitation, as such granular data is not readily available for West Virginia. Moreover, the State's abundant covered populations skew the formula's effectiveness since rural

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[70] United States Census Bureau, Digital Equity Act of 2021, "Total Covered Populations under Digital Equity Act of 2021," https://www.census.gov/programs-surveys/community-resilience-estimates/partnerships/ntia/digital-equity.html, last accessed July 7, 2023.

residents account for a large portion of the covered populations. Attempts to use clustering models based on census data yielded results primarily segregated by population density, which prompted exploration of measures that describe rurality more accurately.

After a significant amount of data exploration and analysis, the Core Planning Team identified the "Drive Time to an Interstate" (DTI) as a primary metric for prioritizing areas for investment. Defined more precisely, DTI means the amount of time it takes for an individual to drive from their home, or any other BSL, and reach an interstate highway. Interstate drive times offer a robust measure of rurality and can highlight areas with higher variable costs for digital equity programs. For instance, digital skills training, device distributors, computer labs, and more are all more likely to grow scarcer the more distance individuals must drive to reach an interstate. This holds true for broadband access as well, and Figure 17 shows the inverse relation between drive time from the interstate and broadband access.

Figure 17: Count of Household Type by Drive Time to Interstate
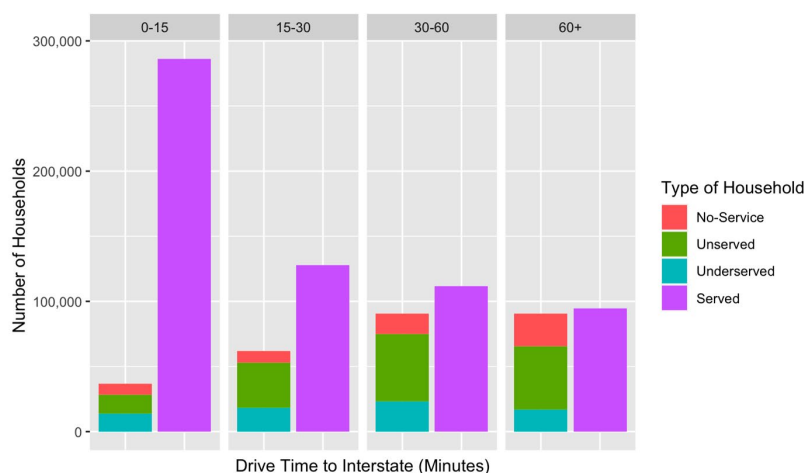
Source: Data Driven WV

In effect, DTI can act as a proxy for variable costs to provide services. These drive times capture the geographical and infrastructural challenges of broadband access. Yet, drive times inversely correlate with minority populations and non-native English speakers, necessitating the inclusion of additional metrics.

To account for the factors poorly addressed by DTI, Data Driven WV sought proxies for these other factors. The number of multi-unit buildings and the relative veteran population are other significant metrics that can inform funding allocation. Multi-unit buildings correlate with the covered population in areas with short interstate drive times. By allocating funding to initiatives that aid multi-unit buildings, it is possible to help many people needing digital equity services. Including the relative veteran population ensures an equitable distribution of resources for this unique demographic group. Additionally, a portion of the funding is dedicated to inmate initiatives, considering the unique challenges incarcerated individuals face in digital equity and inclusion. The distribution of this allocation will be based on relative inmate populations.

Resulting Theoretical Formula

The proposed formula for allocating digital equity funding can be formulated as follows:

$$DigitalEquityAllocation =$$

$$\left[\frac{1}{2} \cdot \text{(Relative Population)} + \frac{1}{32} \cdot \text{(Relative Veteran Population)} + \frac{1}{16} \cdot \text{(Relative Multi-Tenant Buildings)} + \frac{3}{8} \cdot \text{(Relative Interstate Drive Time Score)}\right]$$

$$\times \text{Total State Digital Equity Allocation}$$

Where the following ratio provides the Relative Interstate Drive Time Score:

$$\frac{4 \cdot \text{(Households in Region 60+ min)} + 3 \cdot \text{(Households in Region 30-60 min)} + 2 \cdot \text{(Households in Region 15-30 min)} + 1 \cdot \text{(Households in Region 0-15 min)}}{4 \cdot \text{(Households in WV 60+ min)} + 3 \cdot \text{(Households in WV 30-60 min)} + 2 \cdot \text{(Households in WV 15-30 min)} + 1 \cdot \text{(Households in WV 0-15 min)}}$$

Conclusion

This new approach offers a more targeted and cost-effective strategy to address digital equity in West Virginia by prioritizing interstate drive times and considering the variable costs of implementing Digital Equity programs. It presents a fair and sensible method of allocating funding, considering the unique challenges and costs of service delivery in different geographical and demographic contexts.

5.2 Timeline

This section provides a proposed timeline (Figure 18) for the implementation of West Virginia's Digital Equity Plan broken down by objectives and strategies, with milestones based on the Key Performance Indicators included in Section 2.1 of the Plan. Strategies, in this context, are overarching activities that incorporate or are supported by the core activities defined in Section 5.1.1. During plan implementation, WVDED will act as a convenor, facilitator, connector, and champion of digital equity and inclusion efforts in the state.

Figure 18: Timeline for the Implementation of the Digital Equity Plan

Task	2023 Q3	2023 Q4	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4	2026 Q1	2026 Q2	2026 Q3	2026 Q4	2027 Q1	2027 Q2	2027 Q3	2027 Q4	2028 Q1	2028 Q2	2028 Q3	2028 Q4	2029 Q1	2029 Q2	2029 Q3	2029 Q4	2030 Q1	2030 Q2	2030 Q3	2030 Q4
Objective 1.1 ACP awareness media campaign under NCOP Grant	▓	▓																												
Objective 1.1 Host ACP enrollment events under NCOP grant			▓	▓																										
Objective 1.1 Plan and convene regular monthly stakeholder meetings to boost ACP enrollment and awareness					▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓				
Objective 1.1 KPI Milestones															> 50% progress toward KPI goals											100% progress toward KPI goals				
Objective 1.2 BEAD Grant Program design and preparation for application period	▓	▓																												
Objective 1.2 BEAD Grant Program pre-application review period and approvals			▓	▓																										
Objective 1.2 BEAD infrastructure deployment and compliance verification					▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓				
Objective 1.2 BEAD Grant Program application period ending in awards					▓	▓																								
Objective 1.2 KPI Milestones															> 50% progress toward BEAD goals											100% progress toward BEAD goals				

Gantt chart — Task schedule 2023–2030 (quarterly). Filled cells indicated with █; milestone text shown in the relevant quarter.

Task	2023 Q3	2023 Q4	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4	2026 Q1	2026 Q2	2026 Q3	2026 Q4	2027 Q1	2027 Q2	2027 Q3	2027 Q4	2028 Q1	2028 Q2	2028 Q3	2028 Q4	2029 Q1	2029 Q2	2029 Q3	2029 Q4	2030 Q1	2030 Q2	2030 Q3	2030 Q4
Objective 2.1 Device Program design and preparation for application period			█																											
Objective 2.1 Device Program application review period ending in awards				█																										
Objective 2.1 Device Program post-award implementation and compliance verification					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			
Objective 2.1 KPI Milestones																> 50% KPI goal progress reported in Census												100% progress toward KPI goal reported in Census		
Objectives 2.2, 3.1 Digital Navigator Program design and preparation for application period			█																											
Objectives 2.2, 3.1 Digital Navigator Program application review period, ending in awards				█																										
Objectives 2.2, 3.1 Digital Navigator Program post-award implementation, compliance verification					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█				
Objective 3.1 Conduct digital skills survey periodically to assess KPI	█			█			█		█			█				█			█				█				█			
Objective 2.2, 3.1 KPI Milestones																> 50% progress toward KPI goals												100% progress toward KPI goals		
Objective 3.2 Assessment and guideline planning, publish request for partner to conduct assessment of websites			█	█	█	█																								
Objective 3.2 Conduct assessment, report results, create/publish guidelines for accessibility compliance and future reference							█	█																						
Objective 3.2 Implement accessibility compliance requirements from WCAG and Section 508 in all state websites								█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█				
Objective 3.2 KPI Milestones																>50% of non-compliant sites now compliant												100% of non-compliant sites now compliant		

6. Conclusion

West Virginia is resolute in its mission to ensure that all West Virginians have the resources they need to participate in the digital world and achieve the numerous benefits of digital equity. WVDED and its partners used the Digital Equity Plan development process as an opportunity to deepen the State's understanding of gaps in digital equity. This process included assessing the state of broadband access, affordability, and adoption, and uncovering the barriers to these faced by West Virginians. Through this lens, and with a particular emphasis on the eight covered populations, WVDED undertook a wide range of activities to identify barriers to broadband access, adoption, and affordability and identify ongoing efforts to remedy them. These included:

- holding almost 150 listening sessions held throughout the State with 1,967 participants;
- carrying out a state-wide survey that received 2,050 qualified responses;
- reviewing local, state, and regional broadband and digital equity-related plans;
- working with and receiving feedback from local, state, and regional partners;
- surveying organizations to identify existing programs seeking to bridge the digital divide; and
- performing a deep analysis of many open data sources directly or tangentially related to digital equity, such as information from the U.S. Census Bureau and Federal Communications Commission.

The six most prominent barriers to digital equity faced by the eight covered populations include:

Barrier	Covered populations affected
Broadband affordability	Individuals who live in covered households, veterans, individuals with disabilities, aging individuals over 60 years of age
Access to broadband service	All eight covered populations
Internet-enabled device access and affordability	All eight covered populations
Need for technical assistance	All eight covered populations
Digital literacy	All eight covered populations
Accessibility of websites and online services hosted by state agencies	All eight covered populations

To address these, WVDED developed three goals with two objectives each and accompanying KPIs.

Goal 1: Realize Affordable Connectivity	**Objective 1.1**: Increase enrollment in the Affordable Connectivity Program (ACP)	**Objective 1.2**: Complete broadband deployment as a part of the BEAD Five-Year Action Plan to increase the number of available internet service providers and increase competition
Goal 2: Secure Device Access and Affordability	**Objective 2.1**: Create a sustainable program to provide device distribution, lending, and recycling	**Objective 2.2**: Ensure citizens receive technical assistance for their newly acquired devices
Goal 3: Elevate Digital Skills and Accessibility of Public Services	**Objective 3.1**: Make digital literacy training in cybersecurity, privacy, telehealth, and more, available to all West Virginians, including all covered populations	**Objective: 3.2**: Ensure websites and online services hosted by state agencies are accessible for all West Virginians

With these goals and West Virginia's Digital Equity Vision guiding its efforts, West Virginia and its partners will bridge the digital divide.

Appendices

A.1 Definitions

Key Terms and Definitions

Below is a list of key terms used throughout West Virginia's Digital Equity Plan together with their definitions. This Plan adopts the definitions provided by the National Telecommunications and Information Administration – a federal agency that is principally responsible for advising the President on telecommunications and information policy issues – and the National Digital Inclusion Alliance – a national not-for-profit organization that advances digital equity by supporting community programs and equipping policymakers to act.

Affordability: The ability of a consumer to access a good or service at a cost not damaging to their overall financial wellbeing.

Community Anchor Institution: Community Anchor Institution means a public school, a public or multi-family housing authority, a library, a medical or healthcare provider, a community college or other institution of higher education, a state library agency, and any other nonprofit or governmental community support organization.

Digital Divide: The Digital Divide is the gap between those who have affordable access, skills, and support to effectively engage online and those who do not. As technology constantly evolves, the digital divide prevents equal participation and opportunity in all parts of life, disproportionately affecting people of color, Indigenous peoples, households with low incomes, people with disabilities, people in rural areas, and older adults.

Digital Equity: 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. Digital equity is necessary for access to essential services, civic and cultural participation, employment, and lifelong learning.

Digital Inclusion: Digital Inclusion refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs), including:

- Reliable fixed and wireless broadband internet service
- Internet-enabled devices that meet the needs of the user
- Applications and online content designed to enable and encourage self-sufficiency, participation, and collaboration
- Access to digital literacy training and quality technical support
- Basic awareness of measures to ensure online privacy and cybersecurity

Digital Literacy: Digital Literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information. A person with digital literacy skills:

1. possesses the variety of skills – technical and cognitive – required to find, understand, evaluate, create, and communicate digital information in a wide variety of formats

2. can use diverse technologies appropriately and effectively to retrieve information, interpret results, and judge the quality of that information
3. understands the relationship between technology, lifelong learning, personal privacy, and stewardship of information
4. uses these skills and the appropriate technology to communicate and collaborate with peers, colleagues, family, and on occasion, the public
5. uses these skills to actively participate in civic society and contribute to a vibrant, informed, and engaged community

Disability: Disability means, with respect to an individual:

1. a physical or mental impairment that limits one or more major life activities of such individual
2. a record of such an impairment
3. being regarded as having such an impairment

Rural Area: Rural Area means any area other than:

1. a city or town that has a population of greater than 50,000 inhabitants
2. any urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants
3. in the case of a grant or direct loan, a city, town, or incorporated area that has a population of greater than 20,000 inhabitants

Veteran: Veteran means a person who served in the active military, naval, air, or space service, and who was discharged or released under conditions other than dishonorable.

West Virginia Covered Populations: West Virginia's Covered Populations means:

1. individuals who live in covered households (households with incomes at or below 150% of the poverty level)
2. aging individuals (60 years of age or older)
3. incarcerated individuals, other than individuals who are incarcerated in a federal correctional facility
4. veterans
5. individuals with disabilities
6. individuals with a language barrier, including individuals who:
    i. are English learners
    ii. have low levels of literacy
7. Individuals who are members of a racial or ethnic minority group
8. Individuals who primarily reside in a rural area.

A.2 Supplementary Tables

Table 4: Expanded People Who Own a Computer in West Virginia and the United States

	United States		West Virginia		Difference
	Estimate	%	Estimate	%	between %s
One or more types of computing devices:	115,397,459	93.05	622,923	87.57	-5.48
Desktop or laptop	97,830,488	78.89	490,022	68.89	-10.00
Desktop or laptop with no other type of computing device	4,705,149	3.79	41,284	5.80	2.01
Smartphone	107,227,652	86.47	543,797	76.45	-10.02
Smartphone with no other type of computing device	10,793,298	8.70	76,443	10.75	2.05
Tablet or other portable wireless computer	78,367,808	63.19	396,700	55.77	-7.42
Tablet or other portable wireless computer with no other type of computing device	1,085,378	0.88	13,615	1.91	1.03
Other computer	3,237,976	2.61	12,540	1.76	-0.85
Other computer with no other type of computing device	30,800	0.02	210	0.03	0.01
No Computer	8,613,533	6.95	88,429	12.43	5.48
Total	**124,010,992**		**711,352**		

A.3 Complete List of Relevant Plans & Strategies

Plan Level	Entity	Plan/Strategy	Related Concept
State	WV Dept. of Education	WV's State Plan for the American Rescue Plan Elementary and Secondary School Emergency Relief Fund, 2021	Digital Equity
State	WV Dept. of Education	West Virginia's Strategic Plan, July 6, 2021	Connectivity
State	Governor's Office; WV Dept. of Economic Development; Community Advancement and Development Division	The West Virginia ARC Program, January 7, 2022	Workforce Development
State	WV Dept of Commerce		
State	WV Forward		Economic Development
State	West Virginia Agricultural Advisory Board	A shared agenda for growing West Virginia's Agricultural Economy, 2018, A Shared Agenda for Growing West Virginia's Agricultural Economy – Five Year Strategic Plan	Community Benefit
State	West Virginia Department of Transportation	2050 Multimodal Long-Range Transportation Plan (LRTP), September, 2021	
State	The State of West Virginia, WVU, and Marshall University	West Virginia Forward: Strategy for Economic Development and Job Growth	Economic Development
State	West Virginia Department of Health and Human Resources	Maternal and Child Health Services Title V Block Grant, September, 2021	Telehealth
State	West Virginia Geological and Economic Survey Office of GIS Coordination	State Broadband Initiative Program, West Virginia Broadband Mapping Program, Technical Assistance Grant Program	Economic Development
State	West Virginia Library Commission	West Virginia Library Commission: Annual Report 2022	Community Benefit

Regional	Region 1 Planning and Development Council	Region 1 Broadband Strategic Plan, 2013	Connectivity
Regional	Design Nine Broadband Planners	Broadband for Clay, Calhoun, and Roane Counties: Improving Broadband Access, 2019	Other
Regional	Citynet	Broadband Feasibility Study	Connectivity
Regional	Thompson & Litton and Blue Ridge Advisory Services Group	Broadband Development and Implementation Study For West Virginia Regional Planning & Development Councils Regions 1 & 4 and Regional Optical Communications, February 28, 2020[71]	Connectivity
Regional	Magellan Advisors, LLC	Brooke-Hancock Area Broadband Development Plan, September 15, 2022	Connectivity
Regional	Design Nine Broadband Planners	Technical Broadband Development Plan Jefferson County, West Virginia, Fall 2020	Connectivity
Regional	Design Nine Broadband Planners	Morgan County Broadband: Improving Broadband Access	Connectivity
Regional	Citynet	Broadband Feasibility Study Completed by Citynet for Northern Panhandle Broadband Network, November 20, 2022	Connectivity
Regional	Design Nine Broadband Planners	Phased Broadband Plan: Clay, Calhoun, and Roane Counties, 2019	Connectivity
Regional	Region 4 Planning and Development Council	Broadband Strategic Plan, 2013	Connectivity
Regional	Regional Intergovernmental Council (Region 3 PDC)	Regional Broadband Strategic Plan, 2014	Connectivity
Regional	Region 1 Planning and Development Council	Comprehensive Economic Development Strategy, 2022	Economic Development
Regional	Region 2 Planning and Development Council	Comprehensive Economic Development Strategy, 2020-2024	Economic Development
Regional	Region 3 Planning and Development Council	Comprehensive Economic Development Strategy, 2022	Economic Development

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[71] Also referred to as the "ROC study"

Regional	Region 4 Planning and Development Council	Comprehensive Economic Development Strategy, 2020	Economic Development
Regional	Region 5 Planning and Development Council	Comprehensive Economic Development Strategy, 2021	Economic Development
Regional	Region 6 Planning and Development Council	Comprehensive Economic Development Strategy, 2022-2026	Economic Development
Regional	Region 7 Planning and Development Council	Comprehensive Economic Development Strategy, 2021-2025	Economic Development
Regional	Region 8 Planning and Development Council	Comprehensive Economic Development Strategy, 2022	Economic Development
Regional	Region 9 Planning and Development Council	Comprehensive Economic Development Strategy, 2019-2023	Economic Development
Regional	Region 10 Planning and Development Council	Comprehensive Economic Development Strategy, 2019-2023	Economic Development
Regional	Region 11 Planning and Development Council	Comprehensive Economic Development Strategy, 2020-2025	Economic Development
State	West Virginia Health Care Authority	West Virginia Health Information Infrastructure: Broadband Availability for Health Care Programs in West Virginia, October 2011	Telehealth
State	West Virginia Broadband Enhancement Council	Broadband Development Guide: Cites several WV broadband plans	

A.4 Digital Equity Steering Committee Details

Digital Equity Steering Committee Members

Angela Vance	Associate State Director, Advocacy, AARP WV
Roger Calhoun	Member, Rural Residential User, West Virginia Broadband Enhancement Council
Alex Weld	Executive Director, Generation WV
Annie Stroud	Broadband Coordinator, Generation WV
Donna Calvert	Director, Special Services, WV Library Commission

A.5 Detailed List of Assets by Covered Population

Aging Individuals

Senior Centers and libraries are the primary providers of digital skills training for older adults in West Virginia. Senior center staff assist clients in answering emails, paying bills online, navigating the internet, filling out online forms, renewing their driver's licenses, and redeeming benefits through public websites. For example, Pendleton Senior and Family Services offers digital literacy and digital skills training, conducts digital inclusion awareness and outreach activities, and provides public computer labs and Wi-Fi networks to members of the public.

The Older Adults Technology Services (OATS) program, an AARP affiliated organization, helps aging individuals learn and use technology to improve their quality of life. OATS provides curated resources to support seniors' use of technology through a program called Senior Planet. OATS offers the Senior Planet program exclusively through its branch offices and affiliate organizations. Senior Planet resources include:

- free virtual training lessons on topics such as smartphone use, video meeting services, cloud storage, internet privacy, and digital tools for advocacy
- best practices for engaging aging adults in virtual programming
- plans for in-person training
- guides for train-the-trainer network resources which build the capacity of local organizations serving older adults[72]

Currently, Senior Planet is only offered through OATS. However, the organization is interested in offering free, one-year Senior Planet licenses to upskill trainers in other organizations serving older adults.

The CyberGenerations program, also known as the Senior Citizens' Cyber Safety Initiative, provides aging adults with the skills to protect themselves from cybercrimes. The CyberGenerations program can be completed either as a group workshop or a self-paced course. Program topics include Introduction to Cybersecurity, Password Management, Common Internet Threats, Internet Scams and Fraud, and Social Media Safety.

Racial and Ethnic Minorities

Grow with Google is a national initiative that offers free digital skills workshops, tools, and resources, as well as one-on-one coaching to local communities. Grow with Google is interested in partnering with West Virginia's Community and Technical Colleges to offer free Google Career Certificates for students completing two-year degree courses in cybersecurity, IT support, digital marketing, and e-commerce. In 2020, more than 330 West Virginians enrolled in the IT Support program and, on average, 60% of those who took the courses are Black, Latino, women, or veterans. Students who obtain a certificate can also earn up to 15 college credits.

West Virginia State University (WVSU) is a HBCU located in Institute, West Virginia. WVSU's HBCU Career Readiness Program recently partnered with the Grow with Google Program for digital skills training to

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[72] Older Adults Technology Services, "Senior Planet Licensing Program," https://oats.org/licensing/, accessed June 16, 2023

advance business and careers. The HBCU Career Readiness Program offers Black students at over 30 colleges and universities digital skills training and career workshops to ensure that these students are well-positioned to compete for meaningful careers. The program provides HBCU Career Centers with funding and a semester-long digital skills program. In addition to digital skills training sessions and workshops with guest speakers, each WVSU student in the program receives a cloud compatible Rocketbook Panda Planner, a reusable planner that allows students to scan, save, and share notes through their cloud service of choice.

Bluefield State University, an HBCU in West Virginia, hosted a "Kids Connect" Wi-Fi hotspot at Bluefield State College in one of its field parking lots.[73] The hotspot was created for southern West Virginia public school students who may not otherwise have internet access. The "Kids Connect Initiative" offered by West Virginia Governor Jim Justice's office was developed to expand broadband internet availability.

Rural Residents

Grow with Google is a frequent CAI partner in rural West Virginia. Referenced in Section 3.2, Grow with Google works with local libraries, chambers of commerce, workforce development organizations, veteran-focused organizations, state and local government, schools and universities, and other key community anchor institutions. Some of the organizations in West Virginia that currently participate in the initiative include:

- Brooke County Economic Development Authority
- Business Development Corporation
- Cabell County Public Library
- Goodwill Industries of KYOWVA Area, Inc.
- Huntington Area CVB
- Huntington Regional Chamber of Commerce
- Mary H. Weir Public Library
- Northern Panhandle Workforce Development Board
- Unlimited Future Inc.
- West Virginia Northern Community College

As another initiative of Mary H. Weir Public Library (MHWPL), it partners with Goodwill and the West Virginia Northern Community College. Computer science students enrolled at the West Virginia Northern Community College can serve as interns at the MHWPL as part of their coursework and offer technical software and hardware support to library staff. Goodwill, in turn, sends employment skills trainers to MHWPL to provide training on the use of the library's electronic resources, including business software.

Incarcerated Individuals

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[73] Bluefield State University, "WiFi Hotspot for Southern WV Public School Students Now Available at Bluefield State College," https://bluefieldstate.edu/community/news-and-events/wifi-hotspot-southern-wv-public-school-students-now-available-bluefield.

The West Virginia Schools of Diversion & Transition (WVSDT) offers Adult Educational Programs for individuals who are incarcerated in state-operated facilities and those who have transitioned out of the system. Adult educational programs provide career readiness initiatives, classes, and technical skills training designed to support a successful transition back into the community. WVSDT offers courses including HiSET (high school equivalency), Microsoft Office, C-Tech (Copper/Fiber), and Bridging the Gap. Participants earn industry-recognized credentials, take part in U.S. Department of Labor apprenticeships, and get connected to jobs in the state through local community agencies and partners.

Workforce West Virginia, a state agency that oversees a network of workforce development services, has a 12-month pilot called the Digital Inclusion Program. The program is designed to provide coordinated services and resources for the State's reentry population. Workforce West Virginia, in partnership with a consortium of organizations including the West Virginia Division of Corrections and Rehabilitation, Parole Services, Probation Offices, and regional Reentry Councils, is working to identify 100 individuals to participate in the pilot program supporting justice-impacted individuals. Potential participants must have been released or scheduled for release from incarceration. The pilot program will loan smartphones with voice, text, and data plans to help justice-impacted individuals conduct online job searches and communicate with prospective or current employers. Upon successful completion of the program, Workforce West Virginia will give the device to the individual.

The pilot program offers digital inclusion orientation through Google's Career Readiness for Reentry, a career readiness assessment, job search resources, and ongoing career coaching. The Digital Inclusion Program also offers customized career services to assist individuals who wish to participate in federal programs and complete high-school equivalency courses, and it connects individuals struggling with substance use disorders with treatment resources.

Veterans

West Virginia has one of the highest per capita rates of Armed Forces veterans in the United States. Some former members of the armed forces have acquired technology skills through their military service, while others need opportunities to upskill or reskill into civilian industries that require digital skills.[74]

West Virginia Veterans Upward Bound provides Digital Equity programs for veterans. The organization helps connect West Virginia veterans with skills classes and opportunities to obtain certifications, diplomas, and degrees. West Virginia Veterans Upward Bound offers six-week computer skills classes at the basic and intermediate levels. These often take place at local higher education institutions or community centers, including the Shepherd University Martinsburg Center and the Marion County Adult and Community Education Center. Veterans receive a Computer Skills Certificate of Completion when they complete the course. The organization also recently donated 10 computers to the Shepherd University Martinsburg Center for use by veterans and students taking classes at the Center.

Tech For Troops, an organization based in Virginia that focuses on bridging the digital divide through gifting refurbished computers and helping veterans develop computer skills, has provided training to at least 70 veterans in West Virginia. Tech for Troops offers three types of programs:

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[74] National Skills Coalition, Federal Bank of Atlanta, "Closing the Digital Skill Divide," February 2023, https://nationalskillscoalition.org/wp-content/uploads/2023/02/NSC-DigitalDivide_report_Feb2023.pdf.

1. IT Training
2. Electronics Recycling
3. Hardware Upcycling

The Tech for Troops Veteran Improvement Program (VIP) provides low-cost refurbished computers to qualifying Veterans and Veterans Assistance Organizations. The computers include an up-to-date operating system and software for tasks such as word processing and browsing the internet. VIP also provides scholarships, which can be applied toward the cost of securing a device.

The West Virginia Department of Veterans Assistance manages the West Virginia Veterans Home program, which provides displaced veterans with a temporary home, meals, nursing care, housekeeping, recreational services, and support securing permanent housing and a stable income. As a part of this, Veterans Home provides former members of the armed forces with educational services, employment assistance, and a technology lab.

Individuals with Disabilities

The West Virginia Division of Rehabilitation Services (WVDRS) is a state agency with a mission to empower individuals with disabilities to work and live independently. WVDRS is one of the State's main providers of Digital Equity programs for individuals with disabilities. WVDRS provides comprehensive and individualized skills training, allowing clients with blindness, visual impairments, permanent or temporary handicaps, or learning disabilities to live independently. The customized three to nine months training program includes computer literacy, assistive technology, access technology training, individual counseling, and career development. WVDRS also provides access to low-cost devices through the Technology-Related Assistance Revolving Loan Fund for Individuals with Disabilities. The loan program can be used to purchase computers with assistive software and hardware. The program offers loans ranging from $500 to $50,00, intending to cover 90% of the device or service cost.

The Library for the Blind and Print Disabled offers direct library services to individuals and groups who cannot utilize traditional print due to visual impairment, blindness, temporary or permanent handicap, or learning disabilities. The library provides assistive technology loans, braille books, descriptive videos, NFB Newsline, talking book players, and talking magazines.

The WVU Center for Excellence in Disabilities operates the West Virginia Assistive Technology System (WVAST) Loan Library a device loan and reuse program for individuals with disabilities and their circles of support. WVAST aims to allow West Virginians of all ages and abilities to make informed decisions about securing accessible devices. WVAST allows users to borrow assistive technology for 30 days, procure used devices for free, and schedule appointments to take part in device demonstrations.

The West Virginia Schools for the Deaf and Blind (WVSDB) offer comprehensive educational programs for children with hearing and visual impairments. The WVSDB Career and Technical Education Department offers Computer Repair Systems courses that focus on hands-on, real-world applications to prepare them for post-graduation employment.[75]

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[75] West Virginia School for the Deaf and Blind (WVSDB) https://www.wvsdb2.state.k12.wv.us, Accessed July 5, 2023

Individuals with a Language Barrier

The West Virginia Department of Education, through WV Adult Education and the Adult Education/Literacy Programs, offers many services for adults with low-literacy levels and English Language Learners (ELLs). Many counties in West Virginia have local volunteer literacy programs that help adults gain and improve their literacy skills. ELA meets the needs of adult ELLs, including United States citizens, immigrants, temporary residents, and those who live in a family or community where English is not the primary language. For example, Literacy Volunteers of Monongalia and Preston Counties offers free, confidential, and research-driven support services to native English speakers and ELLs. Their support includes helping adults develop reading, writing, listening, speaking, and computer skills. This organization is an affiliate of the largest adult literacy and basic education membership organization in the United States, ProLiteracy.

The Summers County Adult Education (SCAE) also offers in-person and online classes to individuals with low-literacy levels and ELLs who would like to learn English and improve reading, writing, and/or technology skills. Computer classes are offered once a week at the Summers County Public Library and cover topics such as typing practice and online safety standards. Upon completion of training, participants can earn Digital Badges, a Computer Certificate of Achievement, and Microsoft Office Specialist and Internet and Computer Core Certificates (IC3).

Households with Income Under 150% of the Poverty Line

Affordability

The Affordable Connectivity Program serves as an example of one of the most successful digital inclusion programs in the State. Congress, through the IIJA, created ACP as a replacement for the Emergency Broadband Benefit program. Overseen by the FCC, ACP provides a discount of up to $30 per month toward internet service for eligible households in West Virginia. Additionally, eligible households can also receive a one-time discount of up to $100 to purchase a desktop computer or laptop from participating providers if they contribute more than $10 and less than $50 toward the purchase.

As discussed in Section 3.1.2, West Virginia has made progress in increasing enrollment of ACP, where 13 of the 55 counties meet or exceed national ACP uptake rates. Like in many states, rural access across West Virginia sees an enrollment rate well below the national average, due to the high marginal outreach cost of reaching rural individuals. West Virginia has and will continue to employ the following strategies to increase ACP enrollment:

1. Working with higher-education institutions to increase awareness of the benefits and availability of the ACP to West Virginians.
2. Conducting listening sessions across the state to understand how residents and other covered populations are using broadband technology.
3. Using broadband maps provided by the FCC to understand where coverage gaps exist and leverage such data to inform residents in such locations about the ACP program.

internet service providers have played a role in ACP's increasing success as well. All of the eight internet service providers WVDED interviewed are actively encouraging and promoting ACP enrollment.[76] Some internet service providers, particularly regional or national Internet Service Providers, offer programs specifically designed for ACP-qualifying households. For instance, Comcast offers Internet Essentials, which offers 50/10 Mbps for $9.95 per month or 100/20 Mbps for $29.95. Both of which may be completely free depending on ACP eligibility.

Assets Relevant to All Populations

The State of West Virginia has long recognized statewide gaps in broadband access, affordability, and adoption. One of the State's goals through the Digital Equity program will be to unify many of these efforts and capitalize on the existing resources garnered throughout this process. While the preceding text focuses on programs addressing specific target populations, the following text examines the many ongoing programs to improve the state of digital inclusion for a wide range of populations.

Digital Literacy and Skills, and Workforce Development

West Virginia has many digital literacy training opportunities, including those provided by the West Virginia Department of Education, Workforce West Virginia, and higher education institutions. The West Virginia Department of Education offers computer skills courses through its statewide network of Adult Education/Literacy Programs, including IC3 & Certiport Testing, Microsoft Office Certification, Basic Computer Skills, Computer Literacy, and WIN Online Courseware, including a Digital Literacy course designed to provide participants with the skills needed to navigate technology in the workplace.

The West Virginia Department of Education is a pioneer in developing a Computer Science K-12 pathway for all students in West Virginia with a focus on expanding the program to schools in rural areas. West Virginia was one of the first states in the nation to enact a law requiring that students have access to computer science education in elementary school and be provided a variety of computer science opportunities during their K-12 education[77]. The law also mandates that teachers have computer science learning opportunities as part of their professional development. The State plans to offer computer science education in all schools in West Virginia. According to the 2022 State of Computer Science Education: Accelerating Action Through Advocacy report, 78% of West Virginia public schools offered foundational computer science courses in the 2021-2022 school year, ranking it nineth in the country.[78]

CodeWV at WVU (CodeWV), a partnership between WVU, the West Virginia Department of Education, Code.org and Apple, provides professional training opportunities for West Virginia educators to teach coding and computer science in the classroom. Offered to elementary, middle, and high school teachers, the program aims to bring computer science courses into schools, improve West Virginia's computer science learning standards, and help define the requirements for computer science teaching certification. CodeWV offers an interactive map of West Virginia Computer Science Trained Educators, which lists the course title and name and address of the school. The free program is self-described as "the highest-rated"

[76] WVDED, "Interviews with ISPs for BEAD and DE," Between April 17 and May 15, 2023.
[35] State of West Virginia Code, Chapter 18 Education Article 2, Department of Education §18-2-12. Computer science courses of instruction; learning standards; state board plan development, 2019
[78] State of West Virginia, "2022 State of Computer Science Education," https://advocacy.code.org/state-handouts/WestVirginia.pdf.

by teachers.[79] As of 2021, CodeWV has trained 905 teachers, including 660 elementary school teachers, 162 middle school teachers, and 83 high school teachers at 328 participating schools. Additionally, the NASA IV&V Educator Resource Center (ERC) provides professional development opportunities for West Virginia educators in coding, robotics, and other technologies.

The West Virginia Department of Education offers a three-credit hour online course called Digital Citizenship to active West Virginia teachers/educators and administrators. Digital Citizenship encapsulates the norms of appropriate, responsible behavior concerning technology use.[80] The course covers nine elements of digital literacy, developed by the International Society for Technology in Education (ISTE), including digital access, digital commerce, digital communication, digital etiquette, digital health and wellness, digital law, digital literacy, digital rights and responsibilities, and digital security.

West Virginia's Career Technical Education (CTE) programs, also known as Career Tech WV, are provided by the West Virginia Department of Education and designed to empower students to explore potential careers in 16 CTE clusters through several hands-on, technical training programs, including one focused on Information Technology.[81] The IT course covers topics including design, development, support, and management of hardware, internet, multimedia, software, and systems integration services. The High School Programs of Study include Coding, App and Game Design, Cisco Networking Academies, Computer Science, Computer Systems Repair Technology, Informatics, Information Management, and Virtual Simulation and Game Development. Upon completion of the Program of Study of choice, students can earn an Autodesk Certification, CCNA/Cisco Certified Entry Level Technician (CCENT), CompTIA A+ 220-901 & 220-902, CompTIA Network +N10-006 & +N10-007, IC3 (Internet Core Competency Certification), or Microsoft Office Specialist (MOS) & Master Certification.

Many West Virginia higher education institutions offer basic, intermediate, and advanced digital literacy courses. Examples include the Marshall University's[82] Intro to Digital Literacy and Advanced Digital Literacy and the Eastern West Virginia Community and Technical College's[83] Digital Literacy course.

Digital navigator programs

The Randolph County Housing Authority and Homeownership Center have partnered with Highland Community Builders and Rural LISC to launch a Digital Navigator Program to serve Randolph, Tucker, Barbour, Upshur, and Lewis Counties. The program offers one-on-one or small group support to

[79] CodeWV, "Curriculum Breakdown," https://codewv.wvu.edu/curriculum-breakdown, accessed June 16, 2023
[80] West Virginia Department of Education, "2022-2023 Three-Credit Hour Course: Digital Citizenship," https://wvde.us/wp-content/uploads/2022/08/Digital-Citizenship-Syllabus.pdf, August 2022; archived version available here: https://web.archive.org/web/20230201092256/https://wvde.us/wp-content/uploads/2022/08/Digital-Citizenship-Syllabus.pdf.
[81] Career Technical Education, "Information Technology," https://wvde.us/wp-content/uploads/2022/10/careertechwv_it.pdf, October 2022
[82] Marshall University, "MARSHALL UNIVERSITY REGISTRAR SCHEDULE OF COURSES Complete Undergraduate Listing, Fall 2022 (AUG 22-DEC 09)," https://mubert.marshall.edu/scheduleofcourses.php?term=202301&subject=%25&showschedule=U&campuses=%7CH%7C&termparts=%7C1%7C2%7C3%7C, accessed June 16, 2023
[83] Eastern Virginia CTC, "Digital Literacy Final Rubric," https://easternwv.edu/wp-content/uploads/Final-DL-Rubric.pdf, accessed June 16, 2023

community members in North Central West Virginia who may need assistance with securing affordable home internet service, affordable internet-enabled devices, and/or learning foundational digital skills to become effective internet users. Digital Navigators help by telephone or through safe, in-person visits; by email, text, video chat; and any other communication method that works best for the community member. Digital Navigators provide an individualized approach to meeting the needs of clients, including assessing their current digital skills level, especially related to what they would like to accomplish online, access to technology, connectivity needs, internet use priorities, and much more.

The Morgantown Public Library System also plans to develop a train-the-trainer model to provide professional development opportunities to library staff statewide so they can become Digital Navigators. The library aims to leverage and enhance the digital skills of library staff so they can continue to play a leading role in connecting with West Virginians. Although not a formal program, librarians and senior center staff already serve as digital navigators to many West Virginia communities, especially for older adults.

Low- and no-cost devices and affordable maintenance

As previously noted, the Federal Communications Commission, the WVU Center for Excellence in Disabilities, and the West Virginia Division of Rehabilitation Services offer programs that provide a subsidy payment for securing an internet-capable device, devices for loan, and a low-interest loan to secure devices. These programs cover households and individuals with disabilities. WVDED is exploring partnering with Digitunity, a national organization focused on eliminating the technology gap, to see how it might align with West Virginia's efforts.

Existing Internet Service Provider adoption programs (e.g., adoption campaigns, Lifeline, ACP)

The West Virginia Department of Commerce' Communications Team has launched a statewide traditional and social media campaign to encourage eligible West Virginians to sign up for the Affordable Connectivity Program. The campaign, which ran throughout May 2023, targeted retired veterans, Supplemental Nutrition Assistance Program (SNAP) recipients, Medicaid recipients, single households making under $29,000, two-person households making less than $38,000, four-person households making less than $50,000, and other relevant groups.

Public computing labs

While the need for public community labs can be expanded, public libraries and senior centers are providing access to users. Other notable providers include the Kanawha City Community Center, the Martin Luther King Jr. Community Center, the Northern Charleston Community Center, the Roosevelt Community Center, and the A. D. Lewis Community Center.

Loaner computer/hotspot programs

The Broadband Enhancement Council, WVDED, and the West Virginia National Guard have developed a public, interactive map (also available as an interactive list) with the location of public Wi-Fi hotspots across the state. The map was created in collaboration with local boards of education, libraries, and Internet Service Providers. The West Virginia Wi-Fi Locations Map web page also includes a list of guidelines and best practices for safely using the statewide Wi-Fi locations as well as a form for communities to submit missing public Wi-Fi locations.

The WV Kids Connect Initiative was created to support the learning needs of K-12 students who do not have access to the internet at home. The program is designed to support children outside of school hours by connecting them to a network of 1,000 Wi-Fi hotspot locations across the state. Wireless connection points include K-12 schools, libraries, colleges, and state parks. The interactive map was produced by the West Virginia Department of Education, WVDED, the West Virginia Higher Education Policy Commission, and West Virginia Network.

During the COVID-19 pandemic, WVU shared Wi-Fi hotspot resources with student and community members.

Additionally, Comcast partnered with 10 not-for-profit organizations in West Virginia including the AD Lewis Center, the Boys & Girls Club of Martinsburg, the North Wheeling Community Youth Center, and Boys & Girls Club Eastern Panhandle to establish Lift Zones. Lift Zones provide free internet connectivity – high capacity, commercial grade Wi-Fi – to communities, as well as hundreds of hours of digital skills and educational content to help communities navigate online learning. According to the results of a survey with Lift Zones consumers and site directors, 92% of respondents indicated that Lift Zones helped to increase digital equity in communities and 40% would not have had internet access without Lift Zones.

Computer refurbishment programs

Since 2015, the West Virginia Department of Education has operated the secondlaunchWV initiative, which collects devices no longer being used by state agencies. The equipment is then donated to early childhood programs and K-12 schools at no cost. The donated equipment is cleaned, wiped of data, and prepared for use in K-12 schools. To date, 19,843 items have been refurbished and donated, generating almost $7 million in savings to the state. While the main donators are state agencies, other groups like the West Virginia National Guard, Toyota Motor Manufacturing, and Mountaineer Gas have partnered with secondlaunchWV to donate devices.

Digital equity/inclusion coalitions

While digital equity/inclusion coalitions haven't yet formed in West Virginia, some organizations like Black by God are members of national coalitions promoting digital equity for covered populations, such as the Black Churches for Digital Equity (BC4DE). BC4DE is a collaborative movement focused on ensuring digital equity for under-represented West Virginia communities. The BC4DE champions efforts to educate members of the community about broadband assistance programs, encourage unconnected households to get online, train and organize leaders and advocates in advancing digital equity, and support digital equity through the ACP.

A.6 Detailed Covered Population Needs Assessment

Access and Adoption

The two most reported barriers to high-speed internet access in West Virginia were poor internet quality and poor internet reliability. Listening Session Participants (LSPs) mentioned that despite the availability of internet service in their area, they were unwilling to pay for services that they felt were slow, spotty, or unreliable. In RPDC #4, at least one LSP from all nine sessions indicated that poor internet reliability was a top barrier for access. Six out of those nine sessions reported poor internet quality as a major barrier. Attendees of 61 out of 70 sessions with LSPs over the age of 60 reported poor internet quality as a barrier and 53 of these sessions reported that poor internet reliability was deterring access. Four out of five listening sessions led by RPDC #9 had at least one LSP cite that both poor internet quality and poor internet reliability presented significant barriers to internet access. 23 of the 30 sessions with military veteran LSPs reported poor internet quality and 20 of these sessions cited poor internet reliability as the main challenge for access. 11 out of 12 sessions hosted by RPDC #3 had at least one LSP cite poor internet quality as a top barrier for access. A number of LSPs talked about the significant impact of weather conditions on connectivity, including rain, snow, thunderstorms, and wind, and how these events would make residents lose connection sometimes for days.

Several LSPs could not access the internet because no service is offered in their area. Seven out of eight RPDC #4 listening sessions had LSPs indicate they did not have access to the internet at home, while 19 out of 29 sessions attended by individuals with disabilities reported the same issue. In some cases, LSPs sat just outside areas of service. For instance, a subset of these individuals noted that to receive service, the nearby Internet Service Providers informed them that they would need to bear a portion of the initial costs to deploy infrastructure. In some cases, this amounted to 50% of the initial investment cost. A LSP who attended a listening session held by RPDC #6 stated that they were on a waitlist to get internet services for over a year. A significant portion of LSPs suggested that they would like internet access in public parks and other outdoor recreational areas throughout the State. For the sessions hosted by RPDC #9 and RPDC #1, three out of five and three out of ten sessions, respectively, had attendees cite that they would like to have access to the internet in public parks and recreation areas.

LSPs also cited the high as well as rising cost of—often unreliable—internet services as a significant barrier to adoption, especially for individuals who live on a fixed income. To the latter point, many LSPs reported paying for service that did not meet advertised internet speeds. For the listening sessions hosted by RPDC #7, 12 out of 14 had at least one attendee report that the high cost of services presented a major barrier for access and adoption. 4 out of 5 sessions with formerly incarcerated LSPs had at least one attendee cite the high cost of internet as a top challenge for access to internet services. Additionally, 33 of 46 sessions with attendees from households making less than 150% of the poverty line reported that the high cost of internet service prevented LSPs from internet access. Housing instability presents its own unique challenge. Some LSPs struggling with housing insecurity stated that they could not sign up for services because they did not have a stable home. 12 out of 17 sessions with LSPs who are English learners or have low levels of literacy as well as 21 out of 29 sessions attended by individuals with disabilities reported that the high price of internet services was a top barrier for access and adoption. One LSP stated that it was more expensive to pay for high-speed internet services than TV, phone, and cable services combined.

A high number of LSPs believe that a lack of competition among Internet Service Providers creates an environment that makes signing up for internet service difficult. For sessions hosted by RPDC #2 and RPDC

#4, three out of five and five out of nine, respectively, had at least one LSP cite service provider monopoly as a top barrier for getting access to and paying for internet services. This is only speculation on the part of LSPs, but it illustrates disappointment in the current state of competition in the State. In many regions of the State, given their current infrastructure, Internet Service Providers only had the capacity to accept a limited number of subscribers. That is, a household would have to cancel their subscription before an Internet Service Provider could accept new customers or connect unconnected homes. LSPs also stated that data caps—a limit imposed on the amount of data a subscriber can transfer in a time period—is a major obstacle for accessing the internet. Five out of nine listening sessions led by RPDC #4 had at least one attendee report that data caps were a barrier for access. Three out of seven sessions in RPDC #6 had at least one attendee mention that data caps significantly impacted their ability to get online. In many cases, as covered in the impacts section, data caps led to households micromanaging who was on the internet and for how long. A high number of LSPs stated that lack of technical support was a major obstacle for access. These LSPs faced long wait times for technician appointments, and trouble with Internet Service Providers failing to retain qualified technicians. Seven out of 14 RPDC #7 listening sessions had at least one LSP state that they either had no access to or experienced difficulties getting access to technical support to solve connectivity issues. 10 out of 24 sessions led by RPDC #5 had LSPs indicate that they had limited access to technical support. For some LSPs, internet services were available in their region, but they chose not to sign up for services due to a lack of trust on the internet or cybersecurity concerns.

Devices and Accessibility

Many LSPs reported that public resources, including state and federal websites, were challenging to navigate, including for individuals with learning disabilities and visual impairment. Six out of nine listening sessions led by RPDC #4 had LSPs cite physical disabilities as a barrier for effectively using the internet. The main reported issues included difficulties finding information on public websites, layout issues when increasing the size of the font or using a mobile device, challenges using voice commands, lack of guidance to find forms and resources, and dated information. The percentage sessions attended by LSPs who faced difficulties using online public resources ranged from 50% to 100% across all regions. For example, all of the sessions attended by LSPs who were previously incarcerated and all sessions held by RDPC #2 and RPDC #4 had LSPs mention that they experienced challenges using public websites. Additionally, 20 out of 24 sessions hosted by RPDC #5 had LSPs indicate they had issues using government websites. LSPs with low-literacy levels and English learners reported similar challenges using public resources, but also noted the high reading level of website content and the lack of translations as barriers to access. 11 out of 14 sessions attended by LSPs who were English learners or had low levels of literacy reported that attendees experienced difficulties using online public resources, especially when considering the readability level of websites. Three out of five sessions led by RPDC #2 had LSPs cite language barriers as an obstacle for access while six out of 14 sessions with LSPs who were English learners or had low levels of literacy reported the same issue. Some LSPs cited lack of subject matter knowledge, particularly those who participated in sessions hosted by RPDC #10, and lack of access to internet-capable devices, especially formerly incarcerated individuals, as barriers to access. LSPs who attended a session organized by RPDC #2 noted that some covered households only had access to a device because their school-aged children would bring home tablets from school. Attendees at two out of four sessions with formerly incarcerated individuals and four out of nine sessions led by RPDC #4 reported lack of subject matter knowledge as a top barrier for getting online.

Telehealth and Emergency Services

Lack of connectivity also leads to LSPs not being able to attend telehealth/telemedicine appointments or contact emergency services. A RPDC #1 LSP noted that the impact of connectivity problems ranged from inconveniences to real threats to people's livelihoods and income. Four out of five sessions led by RPDC #2 reported that limited internet prevented LSPs from accessing online medical or government services. Additionally, half of sessions with LSPs who were formerly incarcerated had attendees cite that lack of internet access limited their ability to access essential services. At least one medical professional who provides telemedicine services and worked from home reported that calls with patients were often disconnected, sometimes multiple times.

Many LSPs also lack access to landlines, cell service, and the Internet, and find it difficult Emergency Medical Services when necessary. One LSP reported that her sister-in-law had a stroke and almost died because her brother had to drive to find a house with a landline where he could call Emergency Medical Services. Also, if landlines are down, many residents cannot call 9-1-1.

LSPs who participated in a session hosted by RPDC #7 stated that they have gone up to three weeks without any way to communicate with the outside world or call 9-1-1. One noted that they need to use Citizens Band (CB) to communicate with aging parents because they cannot depend on phone or internet service. A LSP that attended a RPDC# 8 listening session mentioned that their phone and internet were out almost every month.

In sum, internet access, cell phone, radio, and landline service are major concerns for first responders, aging individuals, and those with health issues.

Education and Economic Opportunities

Many LSPs cited the loss of learning and lack of economic opportunities as major impacts of the digital divide. Four out of five RPDC #2 listening sessions had LSPs report that lack of internet access significantly prevented their region's ability to create economic opportunity. Additionally, two out of four sessions with individuals who were formerly incarcerated and RPDC #9 listening sessions had LSPs indicate that limited access to the internet decreased access to economic opportunities. A high number of LSPs stated that, due to the lack of availability, quality, or reliability of internet services at home, they frequently need to drive to parking lots with Wi-Fi hotspots so that their children can complete their schoolwork. RPDC #3 sessions frequently indicated that local libraries had a five-week waitlist to check-out Wi-Fi hotspots. Three out of five sessions organized by RPDC #2 had LSPs indicate that due to the lack of internet access they had to resort to community anchor institutions, including schools and colleges, to get online. 42.9% of sessions hosted by the RPDC #6, RPDC #7, and RPDC #10 had LSPs mention that they needed to use internet services provided by CAIs due to limited internet access at home. One LSP recounted often seeing six to seven people of all ages sat in a high school parking lot at night to get internet access. Students face further challenges related to unstable internet access, with many getting disconnected during online tests.

Many LSPs faced extreme hardship during COVID-19, particularly because during this period children had to participate in remote learning. One LSP believed that at least 50% of the children in their county were left behind because of the lack of access to the internet during COVID-19. In Region 10, five out of eight sessions had at least one LSP cite loss of learning as a direct impact of the lack of internet access during this period. 50% of Region 7 and Region 9 sessions reported learning losses because of the lack of connectivity. This created hardships for parents as well. One LSP mentioned that most parents had to pick up paper packets for children during COVID-19. A high number of children missed out on one-on-one lectures with teachers because they did not have a way to participate online. An LSP who attended a

session hosted by RPDC #10, stated that children had a hard time navigating the internet for basic life skills, such as submitting a college application, because they never had the opportunity to establish computer literacy skills. A teacher who attended a session led by RPDC #6 had to restructure their online class by using pre-recorded lessons as opposed to live virtual classes to accommodate students with limited connectivity because the former used less data. Educators and LSPs, who attended a session organized by RPDC #9, stated that if those issues are not addressed, school-aged children will be left behind and lack the necessary digital skills to complete an education or compete in the job market.

Several LSPs reported that their communities have a difficult time attracting business, economic opportunities, or even residents due to issues with internet access. That is, economic development has been highly restricted because of lack of connectivity. Many communities cited that local businesses struggle with taking payments from customers because of the lack of reliable internet service, causing long lines and loss of customers. For example, an LSP mentioned that the point-of-sale machines belonging to a business in Region 9 shut down because their online systems could not handle a high influx of customers. Also, a business owner in Region 11 mentioned that internet outages cost their business $15,000 per day. In at least one community, a local company owner had to pay for the full cost of deploying broadband infrastructure from the nearest access point to their business location themselves. Another LSP mentioned that they wanted to open a call center to increase their operations but could not do so due to the lack of internet bandwidth. Additionally, one of West Virginia's Local Development Authorities leased a commercial facility in their industrial park only to find out that it did not have internet access. Furthermore, LSPs who attended a session held by RPDC #7 mentioned that their population was declining by 100 people per year partially because internet was an expected utility.

Many LSPs stated that they had the option to work from home but could not do so due to the lack of access or reliability. Two out of four sessions attended by LSPs who were formerly incarcerated indicated that attendees could not work from home due to the lack of internet access, reliability, and quality. Six out of 14 sessions led by RPDC #7 and two out of five sessions hosted by RPDC #2, had at least one LSP report not being able to work from home due to issues with internet access. RPDC #2 sessions reported that LSPs could not provide in-home healthcare services due to the inability to meet federal Electronic Visit Verification (EVV) requirements. Those who did work from home reported regularly being disconnected from virtual meetings. LSPs also cited not being able to apply for jobs because most companies only accepted online applications. As reported by LSPs, collectively, these issues hinder the economic growth of low-income families in West Virginia. There was also a general sentiment that lack of connectivity makes their communities less attractive for new residents and new businesses, thereby reducing both residential and commercial investment.

Civic and Social Engagement

LSPs, especially aging individuals, mentioned that they could not connect with children who lived outside of the State, including through video calls and photo messaging. Additionally, in some cases they felt as though they could not have their children visit if those children worked remotely and needed a stable internet connection. Four out of 14 RPDC #7 listening sessions had at least one LSP state that their inability to procure internet access reduced their ability to access information and entertainment. Additionally, three out of 12 RPDC #3 sessions and five out of 24 RPDC #5 sessions reported LSPs not being able to access information and entertainment due to connectivity issues. LSPs reported that it can take 30 minutes for a website to load, one hour to download a file, or as much as a full day to send a photo. Many LSPs needed to schedule in-person appointments at government agencies because they were not able to

sign up or renew benefits online. Many LSPs reported that they were not able to stream videos, watch sports online, or play video games due to issues with connectivity. LSPs cited that due to data caps, they could not allow visitors to access the internet when they visited their homes and needed to micromanage data usage, including by blocking high-data usage websites. Other LSPs indicated that if they had more than one device connected to the internet at a time, websites would be too slow to load or not load altogether.

A.7 Barriers Assessment Summary Table

Due to West Virginia's large population of rural residents and the rural population's high level of overlap with other covered populations, rural residents would be a top reporter for every common barrier. To not underrepresent the other covered populations, rural residents are omitted from the Barriers Assessment Summary Table. Note that rural residents are affected by all the following barriers with high frequency.

Barriers:	Reported Most Often in Sessions With:	Other Covered Populations Affected:
Poor Internet Service Quality	1. Aging individuals over the age of 60 2. Veterans 3. Individuals with disabilities	Reported in sessions with all covered populations in all 11 regions.
Poor Internet Service Reliability	1. Households making less than 150% of the poverty line 2. Aging individuals over the age of 60 3. Veterans	Reported in sessions with all covered populations in all 11 regions.
Challenges Using Public Websites	1. Incarcerated individuals 2. Individuals who are English learners or have low levels of literacy 3. Individuals with disabilities	Reported in sessions with all covered populations outside of Region 8.
High Cost of Internet Service	1. Incarcerated individuals 2. Individuals with disabilities 3. Households making less than 150% of the poverty line	Reported in sessions with all covered populations outside of Region 2.
Lack of Available Access at Home	1. Individuals with disabilities 2. Individuals who are English learners or have low levels of literacy 3. Households making less than 150% of the poverty line	Reported in sessions with all covered populations in all 11 regions.
Lack of Subject Matter Knowledge	1. Incarcerated individuals 2. Individuals with disabilities 3. Households making less than 150% of the poverty line	Reported in sessions with all covered populations outside of Regions 2 and 8.
Lack of Available Technical Support	1. Households making less than 150% of the poverty line 2. Aging individuals over the age of 60 3. Veterans	Reported in sessions with all covered populations outside of Regions 2, 4, and 8.
Physical Disabilities	1. Individuals who are English learners or have low levels of literacy 2. Individuals with disabilities 3. Households making less than 150% of the poverty line	Reported in sessions with all covered populations except incarcerated individuals. Not reported in Regions 2, 6, 8, or 10.
Service Provider Purportedly Unwilling to Expand	1. Households making less than 150% of the poverty line 2. Veterans 3. Aging individuals over the age of 60	Reported in sessions with all covered populations outside of Regions 5, 8, and 10.

Service Provider Data Caps	1. Individuals with disabilities 2. Households making less than 150% of the poverty line 3. Incarcerated Individuals	Reported in sessions with all covered populations outside of Regions 1, 3, and 8.
Language Barriers	1. English learners and individuals with low literacy levels 2. Individuals of a racial or ethnic minority group 3. Incarcerated individuals	Reported in sessions with all covered populations outside of Regions 1, 3, 7, 8, 10, and 11.

A.8 Crosswalk with Guidance Document

NTIA Requirement Key	
NTIA Digital Equity Guidance Requirement	**Addressed in West Virginia Digital Equity Plan Section/s**
2.1: A stated vision for digital equity	Section 2.1: Vision and Goals
2.2: An assessment of how the measurable objectives identified in item 2 of this Section IV.C.1.b.i will impact and interact with the State's— a) Economic and workforce development goals, plans, and outcomes; b) Educational outcomes; c) Health outcomes; d) Civic and social engagement; and e) Delivery of other essential services.	Section 2.2: Alignment with Existing Efforts to Improve Outcomes
2.2: A description of how municipal, regional, and/or Tribal digital equity plans will be incorporated into the State Digital Equity Plan.	Section 2.2: Alignment with Existing Efforts to Improve Outcomes
2.2: A description of how the State will coordinate its use of State Digital Equity Capacity Grant funding and its use of any funds it receives in connection with the Broadband Equity, Access, and Deployment Program, other federal or private digital equity funding.	Section 2.1: Vision and Goals
2.3: Measurable objectives for documenting and promoting, among each Covered Population located in that State— • The availability of, and affordability of access to, fixed and wireless broadband technology; • The online accessibility and inclusivity of public resources and services	Section 2.1: Vision and Goals
2.3: An implementation strategy that is holistic and addresses the barriers to participation in the digital world, including affordability, devices, digital skills, technical support, and digital navigation. The strategy should (a) establish measurable goals, objectives, and proposed core activities to address the needs of covered populations, (b) set out measures ensuring the plan's sustainability and effectiveness across State communities, and (c) adopt mechanisms to ensure that the plan is regularly evaluated and updated.	Section 2: Introduction & Vision for Digital Equity Section 2.1: Vision and Goals
3.1: An asset inventory, including current resources, programs, and strategies that promote	Section 3.2: Asset Inventory

digital equity for each of the covered populations, whether publicly or privately funded, as well as existing digital equity plans and programs already in place among municipal, regional, and Tribal governments.	
3.2: Identification of barriers to digital equity faced by Covered Populations in the State	Section 3.1: Broadband Access, Adoption, and Affordability Section 3.3: Needs and Barriers Assessment
3.2: A digital equity needs assessment, including a comprehensive assessment of the baseline from which the State is working and the State's identification of the barriers to digital equity faced generally and by each of the covered populations in the State.	Section 3.3: Needs Assessment

[A] description of how the State plans to collaborate with key constituencies in the State, which may include:
   a) Community anchor institutions;
   b) County and municipal governments;
   c) Local educational agencies;
   d) Where applicable, Indian Tribes, Alaska Native entities, or Native Hawaiian organizations;
   e) Nonprofit organizations;
   f) Organizations that represent—
      i. Individuals with disabilities, including organizations that represent children with disabilities;
      ii. Aging Individuals;
      iii. Individuals with language barriers, including 1) Individuals who are English learners; and 2) Individuals who have low levels of literacy;
      iv. Veterans; and
      v. Individuals in that State who are incarcerated in facilities other than Federal correctional facilities;
   g) Civil rights organizations;
   h) Entities that carry out workforce development programs;
   i) Agencies of the State that are responsible for administering or supervising adult education and literacy activities in the State;
	Section 4.1: Key Collaborators and Constituencies
	Section 4.2: Past Coordination Efforts
	Section 4.3: Key Topics and Recommendations for Outreach Activities
	Section 4.4: Public Comment
	Section 4.5: Plan Implementation: Partners

j) Public housing authorities in the State; and k) A partnership between any of the entities described [above.]	
4.1: A list of organizations with which the Administering Entity for the State collaborated in developing the Plan.	Section 4.2: Past Coordination Efforts
4.1: To the extent not addressed in connection with item 4 of Section IV.C.1.b.i (Statutory Requirement 4), a coordination and outreach strategy, including opportunities for public comment by, collaboration with, and ongoing engagement with representatives of each category of covered populations within the State and with the full range of stakeholders within the State	Section 4.3: Key Topics and Recommendations from Outreach Activities Section 4.4: Public Comment Section 4.5: Plan Implementation: Partners
4.1: A description of how the State intends to accomplish the implementation strategy described above by engaging or partnering with: • Workforce agencies such as state workforce agencies and state/local workforce boards and workforce organizations; • Labor organizations and community-based organizations; and • Institutions of higher learning, including but not limited to four-year colleges and universities, community colleges, education and training providers, and educational service agencies	Section 4.3: Key Topics and Recommendations from Outreach Activities Section 4.5: Plan Implementation: Partners
5.1: An implementation strategy that is holistic and addresses the barriers to participation in the digital world, including affordability, devices, digital skills, technical support, and digital navigation. The strategy should (a) establish measurable goals, objectives, and proposed core activities to address the needs of covered populations, (b) set out measures ensuring the plan's sustainability and effectiveness across State communities, and (c) adopt mechanisms to ensure that the plan is regularly evaluated and updated.	Section 5.1: Implementation Strategy and Key Activities
5.1: An explanation of how the implementation strategy addresses gaps in existing state, local, and private efforts to address the barriers identified pursuant to Section IV.C.1.b.i, item 1, of this NOFO	Section 5.1: Implementation Strategy and Key Activities
5.2: A timeline for implementation of the plan	Section 5.2: Timeline

A.9 Complete List of Digital Equity-Related Programs in West Virginia

Note that a few entities and programs may be missing because of data either missing or not provided in the survey.

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Morgantown Public Library System	Public computer labs	Any member of the public	1-2 counties
Morgantown Public Library System	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Any member of the public	1-2 counties
Morgantown Public Library System	Public Wi-Fi and networks (public access points)	Any member of the public	1-2 counties
Gassaway Public Library	Digital literacy and digital skills training	Any member of the public	1-2 counties
Gassaway Public Library	Digital literacy and digital skills training	Low-income households	1-2 counties
Gassaway Public Library	Digital literacy and digital skills training	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	Digital literacy and digital skills training	People with disabilities	1-2 counties
Gassaway Public Library	Digital literacy and digital skills training	Rural populations	1-2 counties
Gassaway Public Library	Digital literacy and digital skills training	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	Digital literacy and digital skills training	Individuals with a language barrier	1-2 counties
Gassaway Public Library	Conduct awareness and outreach activities of digital inclusion	Any member of the public	1-2 counties
Gassaway Public Library	Conduct awareness and outreach activities of digital inclusion	Low-income households	1-2 counties
Gassaway Public Library	Conduct awareness and outreach activities of digital inclusion	Aging individuals (65 and older)	1-2 counties

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Gassaway Public Library	Conduct awareness and outreach activities of digital inclusion	People with disabilities	1-2 counties
Gassaway Public Library	Conduct awareness and outreach activities of digital inclusion	Rural populations	1-2 counties
Gassaway Public Library	Conduct awareness and outreach activities of digital inclusion	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	Conduct awareness and outreach activities of digital inclusion	Individuals with a language barrier	1-2 counties
Gassaway Public Library	Public computer labs	Any member of the public	1-2 counties
Gassaway Public Library	Public computer labs	Low-income households	1-2 counties
Gassaway Public Library	Public computer labs	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	Public computer labs	People with disabilities	1-2 counties
Gassaway Public Library	Public computer labs	Rural populations	1-2 counties
Gassaway Public Library	Public computer labs	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	Public computer labs	Individuals with a language barrier	1-2 counties
Gassaway Public Library	Programs that provide digital literacy and digital training skills	Any member of the public	1-2 counties
Gassaway Public Library	Programs that provide digital literacy and digital training skills	Low-income households	1-2 counties
Gassaway Public Library	Programs that provide digital literacy and digital training skills	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	Programs that provide digital literacy and digital training skills	People with disabilities	1-2 counties
Gassaway Public Library	Programs that provide digital literacy and digital training skills	Rural populations	1-2 counties

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Gassaway Public Library	Programs that provide digital literacy and digital training skills	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	Programs that provide digital literacy and digital training skills	Individuals with a language barrier	1-2 counties
Gassaway Public Library	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	Any member of the public	1-2 counties
Gassaway Public Library	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	Low-income households	1-2 counties
Gassaway Public Library	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	People with disabilities	1-2 counties
Gassaway Public Library	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	Rural populations	1-2 counties
Gassaway Public Library	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	Individuals with a language barrier	1-2 counties
Gassaway Public Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Any member of the public	1-2 counties
Gassaway Public Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Low-income households	1-2 counties

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Gassaway Public Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	People with disabilities	1-2 counties
Gassaway Public Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Rural populations	1-2 counties
Gassaway Public Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Individuals with a language barrier	1-2 counties
Gassaway Public Library	Loaner computer/hotspot programs	Any member of the public	1-2 counties
Gassaway Public Library	Loaner computer/hotspot programs	Low-income households	1-2 counties
Gassaway Public Library	Loaner computer/hotspot programs	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	Loaner computer/hotspot programs	People with disabilities	1-2 counties
Gassaway Public Library	Loaner computer/hotspot programs	Rural populations	1-2 counties
Gassaway Public Library	Loaner computer/hotspot programs	Members of a racial or ethnic minority	1-2 counties

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Gassaway Public Library	Loaner computer/hotspot programs	Individuals with a language barrier	1-2 counties
Gassaway Public Library	Public Wi-Fi and networks (public access points)	Any member of the public	1-2 counties
Gassaway Public Library	Public Wi-Fi and networks (public access points)	Low-income households	1-2 counties
Gassaway Public Library	Public Wi-Fi and networks (public access points)	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	Public Wi-Fi and networks (public access points)	People with disabilities	1-2 counties
Gassaway Public Library	Public Wi-Fi and networks (public access points)	Rural populations	1-2 counties
Gassaway Public Library	Public Wi-Fi and networks (public access points)	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	Public Wi-Fi and networks (public access points)	Individuals with a language barrier	1-2 counties
Gassaway Public Library	One-to-one computer programs	Any member of the public	1-2 counties
Gassaway Public Library	One-to-one computer programs	Low-income households	1-2 counties
Gassaway Public Library	One-to-one computer programs	Aging individuals (65 and older)	1-2 counties
Gassaway Public Library	One-to-one computer programs	People with disabilities	1-2 counties
Gassaway Public Library	One-to-one computer programs	Rural populations	1-2 counties
Gassaway Public Library	One-to-one computer programs	Members of a racial or ethnic minority	1-2 counties
Gassaway Public Library	One-to-one computer programs	Individuals with a language barrier	1-2 counties
Pendleton Senior and Family Services	Digital literacy and digital skills training	Low-income households	Town or city
Pendleton Senior and Family Services	Digital literacy and digital skills training	Veterans	Town or city
Pendleton Senior and Family Services	Digital literacy and digital skills training	Aging individuals (65 and older)	Town or city
Pendleton Senior and Family Services	Digital literacy and digital skills training	People with disabilities	Town or city
Pendleton Senior and Family Services	Digital literacy and digital skills training	Rural populations	Town or city

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Pendleton Senior and Family Services	Conduct awareness and outreach activities of digital inclusion	Low-income households	Town or city
Pendleton Senior and Family Services	Conduct awareness and outreach activities of digital inclusion	Veterans	Town or city
Pendleton Senior and Family Services	Conduct awareness and outreach activities of digital inclusion	Aging individuals (65 and older)	Town or city
Pendleton Senior and Family Services	Conduct awareness and outreach activities of digital inclusion	People with disabilities	Town or city
Pendleton Senior and Family Services	Conduct awareness and outreach activities of digital inclusion	Rural populations	Town or city
Pendleton Senior and Family Services	Public computer labs	Low-income households	Town or city
Pendleton Senior and Family Services	Public computer labs	Veterans	Town or city
Pendleton Senior and Family Services	Public computer labs	Aging individuals (65 and older)	Town or city
Pendleton Senior and Family Services	Public computer labs	People with disabilities	Town or city
Pendleton Senior and Family Services	Public computer labs	Rural populations	Town or city
Pendleton Senior and Family Services	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Any member of the public	Town or city

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Pendleton Senior and Family Services	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Low-income households	Town or city
Pendleton Senior and Family Services	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Veterans	Town or city
Pendleton Senior and Family Services	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Aging individuals (65 and older)	Town or city
Pendleton Senior and Family Services	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	People with disabilities	Town or city
Pendleton Senior and Family Services	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Rural populations	Town or city
Pendleton Senior and Family Services	Public Wi-Fi and networks (public access points)	Any member of the public	Town or city
Pendleton Senior and Family Services	Public Wi-Fi and networks (public access points)	Low-income households	Town or city
Pendleton Senior and Family Services	Public Wi-Fi and networks (public access points)	Veterans	Town or city

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Pendleton Senior and Family Services	Public Wi-Fi and networks (public access points)	Aging individuals (65 and older)	Town or city
Pendleton Senior and Family Services	Public Wi-Fi and networks (public access points)	People with disabilities	Town or city
Pendleton Senior and Family Services	Public Wi-Fi and networks (public access points)	Rural populations	Town or city
Putnam County Library	Digital literacy and digital skills training	Any member of the public	1-2 counties
Putnam County Library	Conduct awareness and outreach activities of digital inclusion	Any member of the public	1-2 counties
Putnam County Library	Public computer labs	Any member of the public	1-2 counties
Putnam County Library	Programs that provide digital literacy and digital training skills	Any member of the public	1-2 counties
Putnam County Library	Digital Navigator programs	Any member of the public	1-2 counties
Putnam County Library	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Any member of the public	1-2 counties
Putnam County Library	Loaner computer/hotspot programs	Any member of the public	1-2 counties
Putnam County Library	Public Wi-Fi and networks (public access points)	Any member of the public	1-2 counties
Mountain CAP of WV, Inc.	Conduct awareness and outreach activities of digital inclusion	Low-income households	Town or city
Mountain CAP of WV, Inc.	Programs that provide subsidized or low cost-devices (e.g., computers, tablets)	Low-income households	Town or city
Mountain CAP of WV, Inc.	Public Wi-Fi and networks (public access points)	Low-income households	Town or city
Marion County Public Library System	Digital literacy and digital skills training	Any member of the public	1-2 counties

Entity	Types of Programs Provided	Population Served	Geographic Areas Served
Marion County Public Library System	Conduct awareness and outreach activities of digital inclusion	Any member of the public	1-2 counties
Marion County Public Library System	Public computer labs	Any member of the public	1-2 counties
Marion County Public Library System	Programs that provide digital literacy and digital training skills	Any member of the public	1-2 counties
Marion County Public Library System	Digital Navigator programs	Any member of the public	1-2 counties
Marion County Public Library System	Programs that conduct awareness and outreach activities of digital inclusion programming and resources (e.g., marketing and awareness campaigns)	Any member of the public	1-2 counties
Marion County Public Library System	Loaner computer/hotspot programs	Any member of the public	1-2 counties
Marion County Public Library System	Public Wi-Fi and networks (public access points)	Any member of the public	1-2 counties
Innovative Community Services (ICS WV)	Digital Navigator programs (ad hoc)	Any member of the public	1-2 counties
West Virginia Bureau of Senior Services	Loaner computer/hotspot programs (ad hoc)	Aging individuals (65 and older)	1-2 counties
West Virginia Bureau of Senior Services	Public computer labs (ad hoc)	Aging individuals (65 and older)	1-2 counties