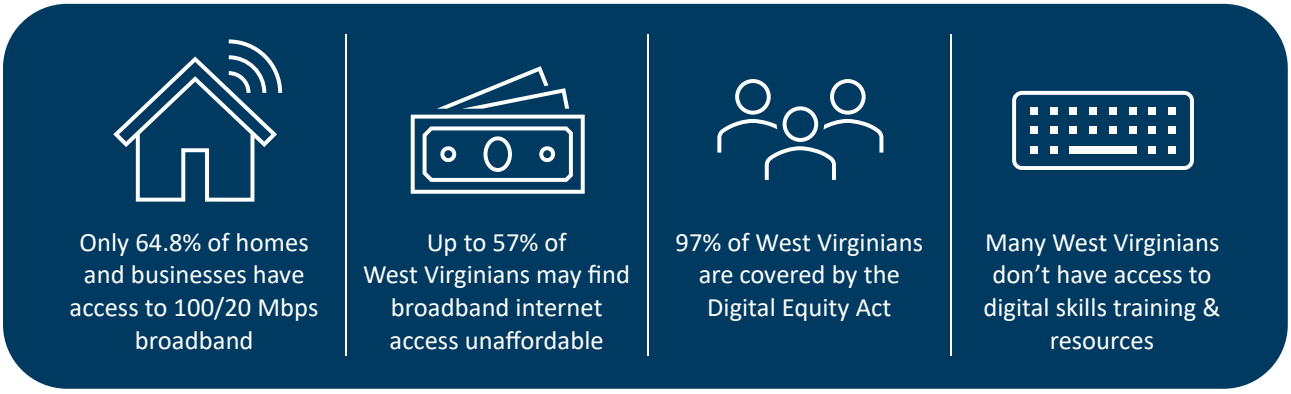
WV NTIA BEAD Five-Year Action Plan Executive Summary

West Virginia (the State) stands ready to deliver on a historic opportunity to connect the State with high-quality broadband service through once-in-a-generation investments in its infrastructure and its people. This readiness is the product of engagement and planning over the last year at the state level and in communities. It is also the product of years of preparation and wise decisions by the State to be ready for this moment, first with the creation of the West Virginia Broadband Enhancement Council in 2016, and later with the addition in 2021 of the West Virginia Office of Broadband (Office of Broadband) within the West Virginia Department of Economic Development (WVDED).[1] WVDED will build on its record of expanding broadband service through the West Virginia Broadband Investment Plan, a $236 million initiative with nearly 40 projects awarded to date, touching 40 counties. This Five-Year Action Plan prepares West Virginia to invest an even larger sum—a $1.2 billion allocation from the National Telecommunications and Information Administration (NTIA), through its Broadband Equity, Access, and Deployment (BEAD) program.



West Virginians need broadband at the ready, but the challenges to make West Virginia broadband ready are real. West Virginia is the only state that lies completely within the Appalachian Mountain region. It has a higher mean elevation than any state in the eastern United States. While West Virginia's topography adds to its beauty, it also proves challenging to deploy broadband across the entire state. The challenges are reflected in the data about locations that have access to broadband up to today's standard. As of December 31, 2022, 64.8% of West Virginia's "broadband serviceable locations" (BSLs) are already fully served under the current federal standard, with at least one internet service provider offering speeds of at least 100 Mbps download and 20 Mbps upload (100/20 Mbps[2]). West Virginia

[1] For consistency, WVDED will be used throughout the rest of this document to refer to both the Office of Broadband and the Department of Economic Development as a whole.

[2] In this plan, when broadband speeds are presented in a pair separated by a slash, the first number is the download speed, the second number is the upload speed.

ranks 3rd-last of all 50 states, Washington, D.C., and Puerto Rico on this measure.[3] State and federal initiatives have already funded projects to deploy affordable and reliable 100/20 Mbps broadband to nearly half of remaining addresses.

The final 19% of BSLs across West Virginia are considered either unserved (speeds lower than 25/3 Mbps) or underserved (with speeds between 25/3 Mbps and 100/20 Mbps). Approximately 25,000 BSLs are considered underserved, with the remaining considered unserved. More details on this breakdown can be found in Section 3: Current State of Broadband and Digital Inclusion.

West Virginia Vision for Digital Equity and BEAD

Achieve universal broadband coverage and digital equity throughout the state through aggressive broadband deployment goals and a commitment to closing the digital divide through robust equity and inclusion initiatives.

WVDED is guided by three core pillars as it strives to achieve universal broadband coverage and digital equity for West Virginia through the planning and implementation of Infrastructure Act funds. These are:

1. Universal Broadband Access
2. Increase Digital Equity and Inclusion
3. Leverage Improved Broadband

For each of WVDED's three pillars, the State will work collaboratively to meet the goals identified below.

[3] Derived from calculations by WVDED. For more details, please see Section 3.1.

1.1 Goals

1.1.1 Universal Broadband Access Goals

Universal Broadband Access

Goal 1.1: Ensure all Broadband Serviceable Locations have access to 100/20 Mbps speeds

Goal 1.2: Address residential and commercial barriers to broadband projects

Goal 1.3: Increase access to Community Anchor Institutions

Goal 1.4: Develop a broadband talent pipeline and comprehensive workforce system

1.1.2 Increase Digital Equity and Inclusion

While broadband is a necessary condition to connect all West Virginians, WVDED recognizes that increased broadband infrastructure alone is not sufficient. Digital equity has been a key consideration throughout the broadband planning process to ensure that West Virginians who have been on the wrong side of the digital divide have the tools and support they need to use the internet in a way that allows them to reach their fullest potential.

Increase Digital Equity and Inclusion

Goal 2.1: Ensure broadband access is available and affordable for all West Virginians

Goal 2.2: Provide quality access to digital literacy skills trainings for West Virginians

Goal 2.3: Equip West Virginians to preserve their online privacy and cybersecurity

Goal 2.4: Help West Virginians gain access to free and low-cost devices

Note that achieving the State's vision by 2029 does not mean reaching 100% in every goal and objective. Achieving digital equity is an iterative process, and the specific key performance indicators for these objectives are discussed in Section 2 of the Digital Equity Plan.

To make progress towards these goals, WVDED will align with key stakeholders across West Virginia.

1.1.3 Leverage Improved Broadband

Leverage Improved Broadband

Goal 3.1.1: Expand economic development coordination activities across State agencies and local governments

Goal 3.1.2: Support opportunities to increase online education and workforce development by leveraging funding sources, educators, employers, and school districts

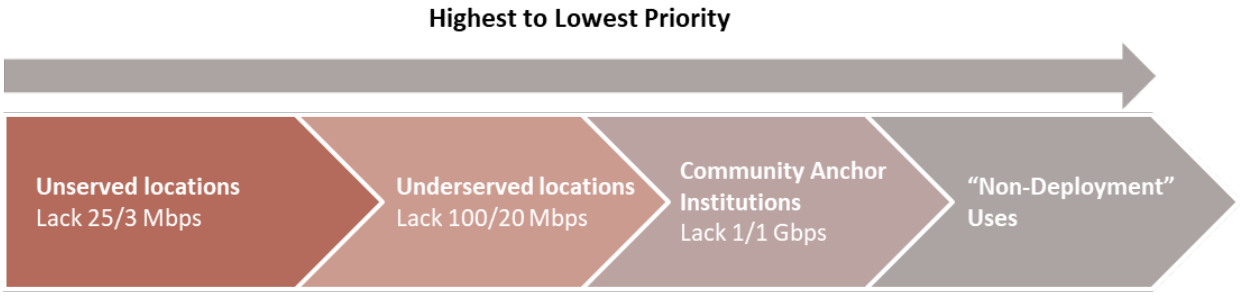
Goal 3.1.3: Provide greater opportunities to revitalize community buildings with economic and tele-healthcare activities

Goal 3.1.4: Leverage universal broadband to attract remote workers and work opportunities

1.2 Strategies and Priority Actions

WVDED's $1.2 billion BEAD allocation will be part of a comprehensive strategy that complements existing efforts and is dedicated to first serving unserved or underserved locations without an existing federal or state funding commitment.

As WVDED implements this Five-Year Action Plan, it will use a waterfall funding approach to determine how money will flow down from its highest priority projects. The image below depicts NTIA's priority order that WVDED will follow.



1.2.1 Unserved and Underserved Locations

WVDED will fund projects through a **competitive grant process** like its existing West Virginia Broadband Investment Plan programs, with modifications to meet BEAD requirements. **Wherever possible, the State's strategy will favor projects offering Gigabit service delivered over fiber-optic networks.** Where this is not possible due to cost or lack of fiber-based proposals, WVDED will give preference to projects with higher performance capability.

1.2.2 Community Anchor Institutions

WVDED will prioritize connecting Community Anchor Institutions that lack access to 1 Gbps/1 Gbps broadband service. To the extent possible, WVDED will require projects that it funds to serve unserved or underserved locations to also serve nearby Community Anchor Institutions that lack Gigabit service. For remaining, eligible Community Anchor Institution locations, **WVDED will develop a Community Anchor Institution Competitive Grant process** in parallel.

1.2.3 Supporting Infrastructure Investment

Creating a supportive regulatory and permitting environment for broadband infrastructure is a high priority for WVDED. WVDED will work with state, local, and private partners to streamline and expedite permitting by addressing:

1. Dig Once policy
2. Communication of clear standards
3. Pole attachment application process

To do so, WVDED will consider formalizing a state agency working group on permitting that includes county governments in targeted areas, pole owners, and internet service providers. West Virginia will consider proposing that NTIA allow a small portion of BEAD funding to be used for a temporary surge in staff or contracted capacity at relevant state agencies. By investing in processes to eliminate bottlenecks for projects, West Virginia's broadband investments will be more efficiently made and transformational for the State and its residents.

1.2.4 Increasing Digital Equity

As described in WVDED's Digital Equity Plan, the following three strategies will guide the State's efforts to close the digital divide.

1.2.5 Workforce Strategies

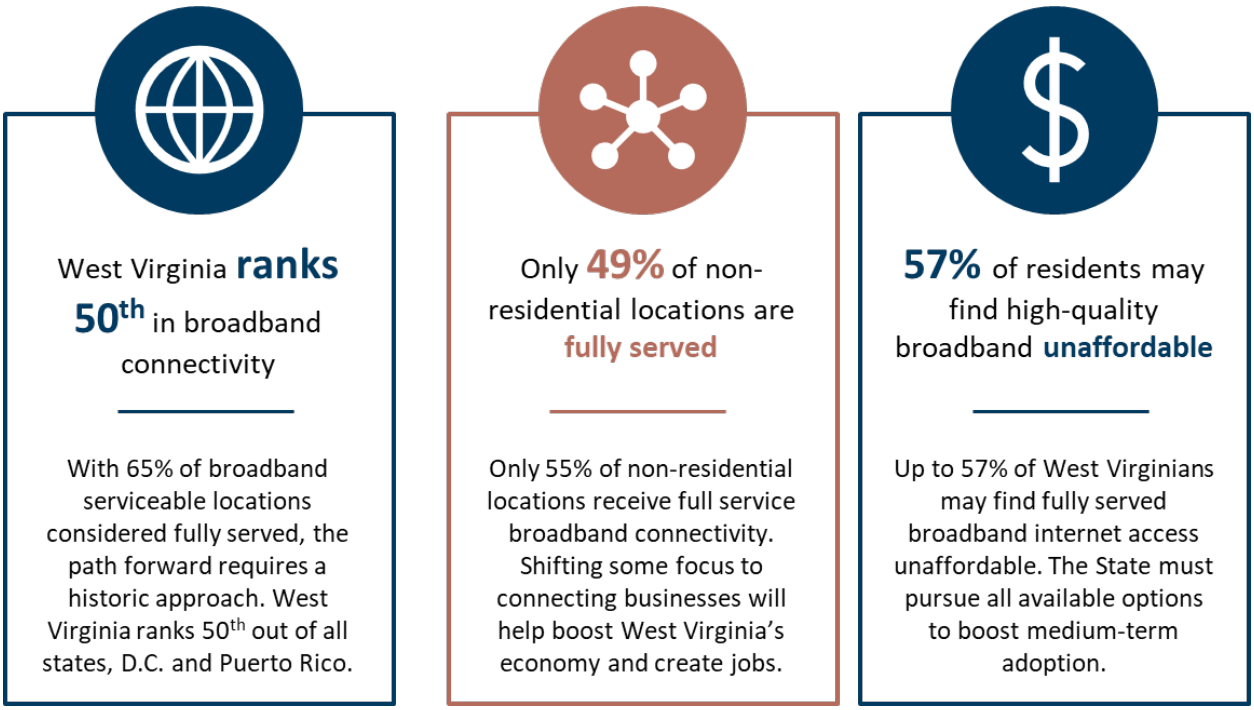
Developed with input from West Virginia's Broadband Workforce Development Council, interviews with ISPs and other key stakeholders, and listening session input, WVDED will advance the following three workforce development goals:

1. Coordinate and convene all broadband industry partners
2. Develop industry-driven training programs with work-based learning opportunities
3. Develop a career exploration program for K12 students

1.3 Current State of Broadband Deployment

Throughout the development of the Five-Year Action Plan, and in collaboration with Digital Equity planning activities, WVDED conducted a thorough examination of needs and gaps relating to broadband availability, access, and affordability across the State. Figure 1 below provides a high-level overview of these factors.

Figure 1: High-Level Overview of West Virginia Broadband Availability and Affordability



Source: See Section 3.1 for the full analysis, sources, and calculation methods.

Densely populated areas have significantly higher rates of full-service broadband availability than exurban and rural areas across the State. Only 49% of non-residential broadband serviceable locations (e.g., shops, warehouses, public sector buildings, etc.) in West Virginia received at least 100 Mbps download and 20 Mbps upload service. As discussed further in Section 3.1, closing this gap in commercial connectivity offers future economic growth opportunities for the State, and special

attention should be paid during deployment phases to ensure these future customers have their anticipated broadband availability and affordability needs met.

Community Anchor Institutions play a critical role in maintaining community.[4] As documented in both this Five-Year Action Plan and the Digital Equity Plan, Community Anchor Institutions provide quality-of-life services like healthcare and education, drive growth in economically depressed areas, and offer safe gathering places to foster a sense of connection to neighbors. These Community Anchor Institutions must have reliable, high-throughput, and high-speed access to broadband internet, yet nearly three quarters of individuals in unserved homes and businesses live outside of a reasonable commute to a community anchor institution with this type of connection. This distance barrier in primarily rural communities further reinforces the existing individual broadband gap in West Virginia. As such, connecting Community Anchor Institutions closer to these unserved individuals will be a critical part of the BEAD program.

1.4 Obstacles and Barriers

Through its extensive discussions with community representatives, internet service providers, government leaders, and other key stakeholders, WVDED identified obstacles and barriers in nine subject areas:

1. Legislative and regulatory barriers
2. Labor shortages
3. Supply chain issues
4. Materials availability
5. Industry participation
6. Lack of local digital inclusion programs/expertise
7. Topography
8. Digital literacy
9. Procurement or contracting issues

Of these nine subject areas, both the “legislative and regulatory barriers” and “labor shortages” subject areas stood out as opportunities where the State could have some of the greatest direct policy impact and use momentum gained from the BEAD program to implement long-term statewide change.

1.4.1 Legislative and Regulatory Barriers

While already strong in certain areas, West Virginia can further strengthen its current legislative and regulatory environment to speed deployment of broadband. Section 4.1 examines the causes and impacts of these barriers in detail across eight areas of focus, as well as proposes recommendations to expedite broadband deployment statewide.

[4] As defined by NTIA, “Community Anchor Institution” means a school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, community support organization, or public housing organization.

1.4.2 Labor Shortages

For West Virginia to achieve internet for all, it will need a well-trained, highly skilled workforce of broadband industry professionals spanning many disciplines. Yet the ongoing and highly documented shortage of trained fiber-optic installers, front-line electrical workers, and network & cybersecurity professionals poses a serious obstacle to the universal broadband deployment activities being asked of the fiber industry in the next five years.[5,6]

This shortage stems from a combination of a tight labor market nationally, a skills gap, and a shortage of standardized training and credentialing for fiber optic technicians.[7] Policymakers and employers nationwide continue to grapple with these challenges.

West Virginia is known for its loyal workforce. West Virginia's lower cost of living, high rate of home ownership, and plentiful opportunities for outdoor recreation, make the State an attractive location for growing economic sectors, including advanced manufacturing, automotive, technology, and aviation.

Like many rural states, West Virginia faces challenges—such as a lack of public transportation options in rural areas and reduced population in certain regions due to the decline of major industries.

In keeping with its economic development strategy, West Virginia must be intentional in its efforts to train, attract, and retain a sufficient workforce. The opportunities presented by the BEAD program increase the demand for skilled labor. This demand is intensified by other large-scale federal and state infrastructure investments.

A concerted effort to prepare for infrastructure project demands is needed, but these challenges should not be viewed as insurmountable obstacles. For successful implementation, industry best practices, education, and training systems already in place across West Virginia must be leveraged to their utmost potential.

Additional details are available in Section 4.2.

1.4.3 Other Barriers

For details on additional supply chain, middle mile infrastructure, and internet service provider financing requirements, as well as local digital inclusion programs, please see Section 4 of the Five-Year Plan.

1.5 Plan Development Process

This Five-Year Action Plan, its goals, and its objectives were developed through the following processes:

1. Collecting data and mapping the current state of broadband
2. Determining needs and gaps
3. Inventorying hard and soft assets
4. Assessing legislative and regulatory barriers

[5] Fiber Broadband Association (FBA)

[6] Telecommunications Interagency Working Group Report January 2023

[7] ibid FBA

5. Understanding West Virginia's workforce development landscape and needs
6. Engaging partners, stakeholders, and members of the public

In compliance with federal requirements, WVDED coordinated processes and efforts across both BEAD and Digital Equity planning. WVDED staff and partners worked together across grant programs to ensure alignment and efficient use of staff time and planning funds.

Meeting West Virginia's ambitious connectivity goals also requires coordination across the public and private sectors to ensure that publicly funded projects are data-informed, contribute to the common good, and are an effective use of taxpayer funds. To achieve its goals and objectives, WVDED commits to:

a. ongoing collaboration and communication with all stakeholders
b. ensuring BEAD investments strengthen and promote existing broadband programs
c. collecting Geographic Information System (GIS) data that broadband internet service providers can use to plan and estimate the cost of their networks

True partnership means committed, continuous engagement for the development of a more connected and equitable West Virginia.