Washington State Department of Commerce

INTERNET FOR ALL IN WASHINGTON

Five-Year Action Plan

Broadband Equity, Access, and Deployment Program

Table of Contents

List of Tables

List of Maps

List of Figures

Key Report Abbreviations

A-CAM I	Alternative Connect America Cost Model, 2016
A-CAM II	Alternative Connect America Cost Model, 2018
ACS	American Community Survey
ACP	Affordable Connectivity Program
ARPA	American Rescue Plan Act
BAT	Broadband Action Team
BDC	Broadband Data Collection
BEAD	Broadband Equity, Access, and Deployment
BIP	Broadband Infrastructure Program
BSL	Broadband Serviceable Location
CAF II	Connect America Fund Phase II
CAI	Community Anchor Institution
CERB	Community Economic Revitalization Board
DOC	Washington State Department of Commerce
DSL	Digital Subscriber Line
EA-CAM	Enhanced Alternative Connect America Cost Model
FCC	Federal Communications Commission
Gbps	Gigabit per second
ISPs	Internet Service Providers
IT	Information Technology
LTE	Long-Term Evolution
Mbps	Megabit per second
NTIA	National Telecommunications and Information Administration
NoaNet	Northwest Open Access Network
NOFO	BEAD Notice of Funding Opportunity
OSPI	Washington Office of Superintendent of Public Instruction
Plan	BEAD Five-Year Action Plan
PWB	Public Works Board
PUD	Public Utility District

RDOF	Rural Digital Opportunity Fund
ROW	Rights-of-Way
SBCTC	State Board for Community and Technical Colleges
SLFRF	State and Local Fiscal Recovery Fund
TBCP	Tribal Broadband Connectivity Project
WSBO	Washington State Broadband Office
WSBCTC	Washington State Board for Community and Technical Colleges
WSDOT	Washington State Department of Transportation
WSU	Washington State University
WTB	Workforce Training and Education Coordinating Board
WUTC	Washington Utilities and Transportation Commission

Definition of Key Terms

Broadband: The term broadband commonly refers to high-speed Internet access that is always on and faster than traditional dial-up access. Broadband includes several high-speed transmission technologies, such as fiber, wireless, satellite, digital subscriber line and cable. For the Federal Communications Commission, broadband capability requires consumers to have access to actual download speeds of at least 25 Mbps and actual upload speeds of at least 3 Mbps.[1]

Broadband Access: The availability of high-speed, reliable internet and related equipment, including having internet connections and technology at home or in community institutions, such as free public Wi-Fi or public computer centers.[2]

Broadband Affordability: Affordability refers to the ability to afford the costs associated with accessing the internet, including for service, devices, and fees.

Broadband Adoption: Daily access to the Internet: (1) At speeds, quality, and capacity necessary to accomplish common tasks, (2) With the digital skills necessary to fully participate online, and (3) On a personal device and secure convenient network. [3]

Broadband Backbone: High-speed transmission lines that strategically links smaller high-speed internet networks across the globe.[1]

Broadband Deployment: The development of broadband networks or infrastructure through which broadband services can be delivered.

Community Anchor Institutions: An entity such as a school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community support organization that facilitates greater use of broadband service by vulnerable populations, including, but not limited to, low-income individuals, unemployed individuals, children, the incarcerated, and aged individuals. Additionally, NTIA allows the state to propose additional types of institutions that should qualify as community anchor institutions. The state of Washington is currently finalizing a list of institutions to submit to the NTIA as part of its Initial Proposal. *(NOFO Section I.C.f)*

Covered Population/Underrepresented Communities: "Covered Population" describes the 13 population groups NTIA identified as underrepresented communities: low-income households; aging individuals; incarcerated individuals; veterans; individuals with disabilities; individuals with a language barrier, including individuals who are English learners or have low levels of literacy; individuals who are members of a racial or ethnic minority group, and individuals who primarily reside in a rural area. Additionally, we also included two population groups—children and youth in foster care and individuals experiencing housing instability—identified in Washington state law's definition of 'covered populations', when applicable. *(NOFO Section I.C.aa)*

[1] NTIA (2016), Broadband Glossary. Accessed at: BroadbandUSA: Connecting America's Communities (doc.gov)
[2] NTIA (n.d.), "What does Digital Inclusion mean?". Accessed at: What does Digital Inclusion mean? | BroadbandUSA (doc.gov)
[3] Digital Equity Act of 2021 (2021). Accessed at: 47 USC Ch. 16: BROADBAND ACCESS (house.gov)

Digital Equity: The condition in which individuals and communities have the information technology capacity that is needed for full participation in the society and economy of the United States.[2]

Digital Literacy: The skills associated with using technology to enable users to find, evaluate, organize, create, and communicate information.[2]

Digital Skills: Any skills related to operating digital devices or taking advantage of digital resources.[1]

Last Mile: The technology and process of connecting the end customer's home or business to the local network provider.[1]

Middle Mile: The hard assets need to support the connection between a local network, also call a "last mile" connection, and the backbone internet connection.[1]

Open Access: An arrangement in which a network owner offers nondiscriminatory access to and use of its network on a wholesale basis to other providers seeking to provide broadband service to end-user locations, at just and reasonable wholesale rates for the useful life of the subsidized network assets. *(NOFO Section I.C.q)*

Rights-of-Way (ROW): ROW are legal rights to pass through property owned by another. ROW are frequently used to secure access to land for digging trenches, deploying fiber, constructing towers, and deploying equipment on existing towers and utility poles.[1]

Underserved Location: An underserved location is defined as a broadband-serviceable location that is (a) not an unserved location, and (b) that the Broadband DATA Maps show as lacking access to Reliable Broadband Service offered with - (i) a speed of not less than 100 Mbps for downloads; and (ii) a speed of not less than 20 Mbps for uploads; and (iii) latency less than or equal to 100 milliseconds. *(NOFO Section I.C.bb)*

Unserved Location: An unserved location is defined as a broadband-serviceable location that the Broadband DATA Maps show as (a) having no access to broadband service, or (b) lacking access to Reliable Broadband Service offered with - (i) a speed of not less than 25 Mbps for downloads; and (ii) a speed of not less than 3 Mbps for uploads; and (iii) latency less than or equal to 100 milliseconds. *(NOFO Section I.C.dd)*

1. EXECUTIVE SUMMARY

CURRENT STATE OF BROADBAND IN WASHINGTON

Internet connection serves as a lifeline for many Washingtonians, allowing family members to connect virtually across the state, providing telehealth services for communities that are hours away from the nearest hospitals, and opening doors to digital skills training to enhance local business operations and generate economic development. Simply put, having access to the internet facilitates a more complete integration for everyone into the digital economy and society. Unfortunately, a growing digital divide has left some residents and businesses behind, and as technology continues to evolve at a rapid pace the gap may grow even wider without concerted efforts from all levels of society to address it.

"Broadband access is essential for full participation in society and the modern economy…People rely on internet service to access health care and other essential services, obtain an education and build careers. Businesses need the internet to market themselves and serve customers. Broadband can also help first responders get quickly to residents in an emergency. Yet too many Washingtonians, especially in the most rural parts of the state, lack access to affordable broadband service."

– Washington State Legislature

Based on Federal Communications Commission (FCC) data, statewide over 236,000 residential and non-residential locations are considered unserved, meaning that either there is no internet or speeds are insufficient to meet the 25/3 megabits per second (Mbps) download and upload minimum speed or reliability requirements to be considered broadband level internet.[4] Additionally, nearly 80,000 locations were also found to be underserved, which means that they have speeds greater than 25/3 but less than the 100/20 speed threshold defined in the Broadband, Equity, Access, and Deployment (BEAD) program requirements. Beyond internet access gaps, there is also an adoption gap with 9% of all Washington households that do not have a broadband subscription of any type.[5] To help address these gaps, Washington state was allocated nearly $1.23 billion in June 2023 from the National Telecommunications and Information Administration (NTIA) through the BEAD Program.[6] While this is a sizeable amount of funding that can help the state make significant progress towards the goal of universal internet access, it is still likely to be insufficient to deploy broadband infrastructure to every location due to Washington's diverse terrain and relatively low-density population outside of major urban centers. The preliminary cost estimate for universal access is more than $2 billion, leaving a funding gap of nearly $500 million, even after a mandatory 25% match from subgrantees. This funding gap will likely increase as it does not include deployment costs specific to high-cost locations which the state can more accurately calculate once the NTIA releases its 'Extremely High-Cost Threshold Support' tool.

[4] FCC Broadband Serviceable Location Fabric v2 (2023). Accessed through CostQuest license request.
[5] American Community Survey (2021) S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]. Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]
[6] This grant amount was allocated based on a formula grant that related to the number of unserved locations and the number of "high cost" unserved locations in each eligible state or territory. See BEAD Allocation Methodology for more details

While there is considerable work to be done, momentum to meet the vision for universal access over the next five years has been building throughout the state. And, as demonstrated by the momentous efforts of organizations and community members across the state to successfully submit individual and bulk challenges to tens of thousands of locations to the first version of the FCC broadband fabric, when Washingtonians work together towards a shared vision, much can be accomplished.[7]

OUR VISION AND GOALS

The scale of funding available through the BEAD provides an unprecedented opportunity to fund broadband deployment, adoption, access, affordability, and digital equity efforts. The Washington State Broadband Office (WSBO) – in close partnership with the state's widespread broadband and digital equity partners and collaborators – is ready to meet this moment and capitalize on the historic BEAD funding to achieve "Internet for All in Washington." Building upon ongoing digital inclusion efforts, extensive public engagement efforts, and insight from local and tribal governments, the WSBO developed the state's vision and goals for broadband connectivity.

VISION		
Washington is committed to investing in universal broadband access that is adoptable, affordable, reliable, scalable, and sustainable to support equitable economic development and connect every community throughout the state, enriching the lives of all Washington residents and businesses.		
Goal 1: Universal Access	**Goal 2:** Equitable Economic Development	**Goal 3:** Scalability and Sustainability

HOW WE CREATED THIS PLAN

Washington state is in the fortunate position of having an extensive community of partners and organizers in the broadband and digital equity space, allowing the WSBO to call upon their experience and expertise to understand current broadband assets, needs and gaps, and barriers, and effectively engage diverse communities across the state, as part of the development of the BEAD Five-Year Action Plan (Plan).

The engagement process included 12 listening sessions, 32 focus groups, and a statewide survey comprising over 3,400 individuals, organizations, and agencies, providing a 360-view of broadband and digital equity in Washington state, in addition to insights made in recently published Community Action Plans. Coordinated by Washington State University-Extension and local and tribal Broadband

How is this Plan related to the State Digital Equity Plan?

Washington's Plan is the first of four documents that focus on accessing and implementing the federal funding disbursed through BEAD. The State Digital Equity Plan, the BEAD Initial Proposal, and the BEAD Final Proposal will also build on the efforts outlined in this Plan, as strategies to achieve digital equity and statewide connectivity are refined. This Plan was developed concurrently with the State Digital Equity Plan – digital equity efforts are equally important to universal access as broadband deployment.

[7] Between the first and second versions of the broadband fabric released by the FCC, over 71,000 unserved location challenges were accepted, resulting in more than 238,000 unserved locations as of the BEAD allocation announcement in June 2023.

Action Teams (BATs), these Community Action Plans offer insight into the current state of broadband in Washington state counties and federally recognized tribal nations. In addition, the WSBO is actively engaging in government-to-government consultation with federally recognized tribes in Washington state.

Due to the grassroots and community-driven broadband and digital equity work that has been ongoing in the state, the WSBO has taken a bottom-up approach to this Plan, incorporating local, tribal, and nonprofit actions, strategies, and ideas whenever possible.

WHAT WE'VE LEARNED

To effectively disburse BEAD funding to unserved and underserved locations, it is crucial to understand current broadband deployment, adoption, affordability, access, and digital equity gaps and challenges. Leaning on public engagement and Community Action Plan findings and previous broadband reports, the WSBO identified the following challenges to universal broadband in the state:

- **Gaps in broadband infrastructure**: Despite strides made in broadband deployment, more than 236,000 residential and non-residential locations throughout the state are unserved.[8] Ongoing operation and maintenance costs, challenging terrain, and the high cost of installing middle mile and underground infrastructure have all been cited as barriers to broadband infrastructure.
- **Affordability**: Washington's Affordable Connectivity Program (ACP) enrollment rate is 26%, below the national average of 33%. Of the 1,125,000 eligible households in the state, less than 290,000 are enrolled in the ACP.[9]
- **Limited access to devices**: 4% of Washington households do not have access to a computing device, almost 7% of all households in Washington exclusively own a smartphone, and as many as 15% of households do not have a desktop or laptop computer.[10]
- **Digital inequity**: While much progress has been made in this area, inequities remain. Listening session and focus group participants often cited low digital literacy and/or digital skills as a reason that their household does not have a broadband subscription.

Although there are challenges and barriers to universal broadband access, there are also many assets that the state and its partners can utilize. There are 44 public or open access networks located throughout the state – including networks currently under construction – with network ownership consisting of cities, counties, and tribal nations. Additionally, 15 of the state's 28 public utility districts (PUDs) and nine of the state's 75 port districts own public networks and have provided some level of broadband service since 2000, when the Washington State Legislature changed state law to allow PUDs and port districts to offer. wholesale telecommunications. In

[8] FCC (June 2023), National Broadband Map. Accessed at: https://broadbandmap.fcc.gov/data-download/nationwide-data?version=dec2022
[9] Universal Service Administration Co. (July 2023), ACP Enrollment and Claims Tracker. Accessed at: ACP Enrollment and Claims Tracker - Universal Service Administrative Company (usac.org)
[10] American Community Survey (2021), S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]. Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]

addition to hard infrastructure assets, there are also a multitude of adoption and affordability programs offered by nonprofit, public and private organizations. For example, the WSBO in partnership with multiple nonprofit organizations helped create a Digital Navigator Program using state funds to serve all 39 counties with free digital navigation, free digital literacy skills training, and connected device acquisition assistance.[11] Cultivating partnerships will a wide array of organizations and agencies will continue to be a cornerstone of the WSBO's strategy to implement activities that will ultimately achieve the goals laid out in this Plan.

WHERE WE GO FROM HERE

Drawing from the insights gathered in this planning process and incorporating the rich digital equity and broadband work that has been done in local and tribal communities, the WSBO has synthesized this information and distilled seven priorities for BEAD funding disbursement. Together, these priorities put Washington state on the path to bridge the digital divide. It is paramount that each priority and planned action mirror the perspectives and priorities of the entities that will ultimately carry out the broadband deployment, adoption, affordability, access, and digital equity activities. Considering regional and community needs, Washington's priorities focus on:

1. **Investing in resilient broadband infrastructure** through activities that would expand last mile deployment to unserved and underserved locations.
2. **Improving broadband connectivity for community anchor institutions** and increasing utilization of public assets. Encourage access for all CAIs to receive a minimum of 1 Gbps symmetrical speeds enabling critical social and health services on resilient networks.
3. **Minimizing regulatory barriers to deployment** such as coordinating with federal, state, local, and tribal agencies to streamline permitting processes, resolve pole attachment issues, and support the development of dig-once policies.
4. **Expanding technical support and capacity for subgrantees** to support BEAD and other broadband funding opportunities.
5. **Supporting statewide workforce development efforts** such as expanding educational programs and apprenticeship programs.
6. **Accelerating adoption of broadband services** through establishment of partnerships with community organizations and local leaders to help reach underrepresented communities.
7. **Increasing affordability of broadband services** through awareness of affordability initiatives that provide direct financial assistance to consumers.

Each priority has associated activities to support and advance the priorities established. The activities laid out below reflect priorities and activities identified by a host of partners and collaborators in addition to the work conducted by the WSBO to assess gaps and needs across the state.

[11] Washington State Department of Commerce (n.d.), Digital Navigator Program. Accessed at: Digital Navigator Program

Priority 1: Invest in resilient infrastructure	• Activity 1.1: Last mile deployment • Activity 1.2 Open access middle -mile infrastructure build • Activity 1.3 Incentivize ISPs to invest in unserved and underserved areas
Priority 2: Improve broadband connectivity for CAIs	• Activity 2.1 Increase utilization of the K20 network • Activity 2:2 Work with CAIs to assess network resiliency • Activity 2.3: Continue to identity existing broadband assets
Priority 3: Minimize regulatory barriers	• Activity 3.1: Streamline right -of-way and easement permitting process • Activity 3.2: Support the WSDOT's Dig Once Policy • Activity 3.3: Work with the WUTC to refine statewide utility pole standards
Priority 4: Expand technical support & capacity development	• Activity 4.1: Reduce costs and barriers associated with grant applications and administration for subgrantees • Activity 4.2: Support a state matching fund
Priority 5: Support statewide workforce development efforts	• Activity 5.1: Establish a broadband workforce development taskforce • Activity 5.2: Coordinate with educational institutions to expand training programs • Activity 5.3: Work with ISPs to support increased access to on -the-job training programming and resources
Priority 6: Accelerate adoption of broadband services	• Activity 6.1: Support digital skills and digital literacy training • Activity 6.2: Broaden outreach to covered populations to support digital inclusion • Activity 6.3: Support statewide cybersecurity strategy
Priority 7: Increase affordability of broadband services	• Activity 7.1: Establish broadband affordability requirements for subgrantees • Activity 7.2: Increase ACP adoption • Activity 7.3: Encourage the development of ISP broadband discount programs • Activity 7.4: Establish a state -funded telecommunications discount program

The timeline for reaching universal access goals and meeting priorities is ambitious, as implied in the Five-Year Action Plan title, but aligns with previous state goals set that all Washington residences and businesses will have access to at least one provider of broadband with download and upload speeds of at least 150 Mbps by 2028.[12] As Washington state's speed goals surpass the speed requirements in the Bipartisan Infrastructure Law (BIL), the WSBO will aim to meet the established BIL goals as a minimum, while striving to achieve Washington state's speed goals. The estimated high-level timeline for the BEAD grant program is as follows:

2023: The WSBO will submit this Plan and the Initial Proposal by the end of the year.

2024: Pending the NTIA's approval of the Initial Proposal, the WSBO will begin implementing the BEAD challenge process. With approval of the Initial Proposal, WSBO may receive approval to use 20% of the total funding allocation for projects with specific criteria requirements being met.

2025: The WSBO will submit the Final Proposal at which point subgrantee awards and funding may commence.

2025 to 2028: Most of the deployment milestones should be well underway or nearing completion.

2028 to 2030: Almost all projects should be completed with evaluation for provisional extensions on a case-by-case basis. Final program evaluation and grant closeout activities will take place.

While accomplishing all priorities and planned activities in the given timeframe will be a significant undertaking, there are also many opportunities to springboard from the momentum that has been built by the hard work and dedication of numerous individual community members, community organizations, and many other public and private sector organizations who are invested in achieving the stated vision. Collectively, we can make this happen!

[12] Washington State Legislature (n.d.), RCW 43.330.536. Accessed at: Washington State Legislature RCW 43.330.536.

In the words of Governor Jay Inslee (D-WA), "Access to broadband is the single most important economic development tool in our toolkit right now, and the most necessary to our state." This Plan – and the subsequent State Digital Equity Plan, Initial Proposal, and Final Proposal – sets the stage for Washington state to fully realize the vision of universal broadband access for all Washingtonians.

1.1 Crosswalk of Five-Year Action Plan and Notice of Funding Opportunity (NOFO) Requirements

The BEAD Notice of Funding Opportunity required Washington to develop a BEAD Five-Year Action Plan (Plan) that establishes the state's broadband goals and priorities and serves as a comprehensive needs assessment that will provide a foundation for alignment with future Initial and Final Proposals.[13] To this end, the NTIA outlined 13 elements that the state must include in its Plan.[14] We identify each of these requirements and the section of the Plan that provides the corresponding information in **Appendix 7.1**.

[13] NTIA (2022), Five-Year Action Plan Guidance. Accessed at: Five-Year Action Plan Guidance (doc.gov)
[14] NTIA (2022), BEAD NOFO. Accessed at: BEAD NOFO.pdf (doc.gov)

2. OVERVIEW OF THE FIVE-YEAR ACTION PLAN

With the inception of the Washington State Broadband Office (WSBO) in 2019, the state of Washington has taken a proactive approach to expanding broadband connectivity to all unserved and underserved locations. The WSBO's legislated purpose is to encourage, foster, develop, and improve affordable, quality broadband within the state to drive job creation, promote innovation and economic vitality, and expand markets for Washington businesses; serve the ongoing needs of Washington's education, health care, and public safety systems; and improve broadband accessibility for unserved communities.

In the words of the Governor's proposed budget for the 2019 - 2021 fiscal cycle, "Broadband access is essential for full participation in society and the modern economy." Given this significance, the WSBO developed the state's vision, goals, and objectives to deliver universal, high-speed broadband to all Washingtonians utilizing the federal funding provided through the Broadband Equity, Access, and Deployment (BEAD) program. As Washington state is deeply committed to establishing digital equity, the goals and objectives in this Plan focus on building new programming capacity to advance digital equity ideas and strategy in conjunction with funding broadband infrastructure deployment.

For the state of Washington, the vision for achieved success is three-fold. First, the state will achieve universal access for every resident, business, and community, ultimately reaching statewide goals of 150 Mbps symmetrical speeds for all residents and businesses by 2028. Second, success will promote equitable and inclusive economic development. And third, success will entail "future-proofing" reliable broadband infrastructure while delivering at a scale and rate that meets access and equity goals. The objectives laid out in this Chapter support the state's vision.

2.1 *VISION*

Washington state's broadband vision, goals, and objectives in this Plan are an extension of the state's current broadband initiatives and will build off pre-established state and local efforts. Although the state has provided funding for the construction of public infrastructure – including telecommunications and broadband – since 1982, Washington renewed its commitment to improving broadband accessibility, especially for unserved communities and populations, with the creation of the WSBO in 2019. Even then, the Legislature recognized the importance of broadband access for the full participation in society and the modern economy.[15] It thereby charged WSBO with the responsibility to encourage foster, develop, and improve affordable, quality broadband throughout the state, with the overarching goal of reaching universal coverage and broadband speeds of 150 megabits per second by 2028.[16]

[15] Washington State Legislature (n.d.), RCW 43.330.532. Accessed at: RCW 43.330.532
[16] Washington State Legislature (n.d.), RCW 43.330.536. Accessed at: RCW 43.330.536

WSBO recognizes that an equitable 21st century economy cannot occur without universal broadband infrastructure providing all Washington residents and communities with the ability to take advantage of the benefits broadband provides:

- Meeting the daily demands of modern society, including healthcare, education, workforce development, civic and social engagement, access to services.
- Supporting strong economic performance and long-term prosperity for all Washingtonians.
- Encouraging innovation and research.
- Attracting global investments.[17]

It is in this spirit that Washington has identified the following vision, goals, and objectives to guide its use of federal BEAD funding.

VISION
Washington is committed to investing in universal broadband access that is affordable, reliable, scalable, and sustainable to support equitable economic development and connect every community throughout the state, enriching the lives of all Washington residents and businesses.

Washington state's vision for broadband emphasizes the following three areas:

WHAT: "Washington is committed to investing in universal broadband access that is affordable, reliable, scalable, and sustainable", referring to the need for broadband infrastructure to meet the ambitious statewide goals of 150 Mbps symmetrical to all businesses and residences by 2028.[18] As Washington state's speed goals surpass the speed requirements in the BEAD NOFO, the WSBO will aim to meet the established BEAD goals as a minimum, while striving to achieve Washington state's speed goals.

WHY: "To support equitable economic development and connect every community throughout the state," describing the end goal for broadband expansion: providing full access to the digital economy and society.

WHO: "Enriching the lives of all Washington residents and businesses," invoking the inclusive nature of the state's vision to connect all Washingtonians to broadband.

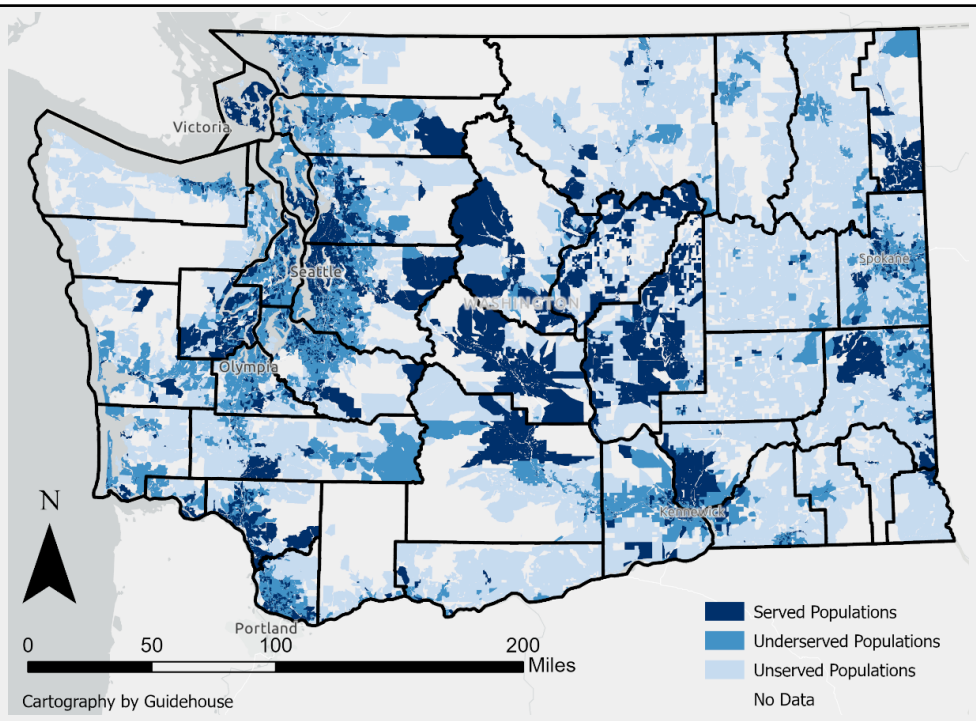
2.1.1 Connecting the vision for broadband deployment and digital equity[19]

Within the context of the new normal as established by the pandemic – where a home serves as medical office, classroom, workplace, hub of commerce and entertainment center – broadband deficiencies have become more urgent. The WSBO 2022 Biennial Legislative Report identified three primary network deficiency types, each requiring capital investment to improve:

[17] WSBO (2022), 2022 Biennial Legislative Report. Accessed at: Broadband Office 2022 Biennial Legislative Report
[18] Washington State Legislature (n.d.), RCW 43.330.536. Accessed at: RCW 43.330.536
[19] Under the BEAD Notice of Funding Opportunity, digital equity describes the condition in which individuals and communities have the information technology capacity that is needed for full participation in the society and economy of the United States.

- Bandwidth demands exceed network design and scalability.
- Currently deployed technology is incapable of scaling to universally meet state speed goals.
- Incomplete residential and business access to affordable, reliable, high-speed internet service. [20]

As informed by Federal Communication Commission (FCC) and American Community Survey (ACS) data, there are certain regions of Washington that are less connected that other parts of the state. Below, **Map 1** illustrates the unserved and underserved locations in Washington state at the census block level using the FCC data accessed in May 2023.



Map 1: FCC Service Levels by Census Block as of May 2023

Source: Analysis of FCC data as of May 2023.

Ultimately the vision is that all unserved and underserved locations, and the people living and working in these locations, have access to the baseline infrastructure, service level, and digital skills to access information and critical services like healthcare, finance, public safety; participate in civic and cultural activities; seek employment; pursue educational and training opportunities, economic development, and new opportunities unlocked by information technology.[21]

Furthermore, the unique needs of different communities and regions across the state means that while there is a statewide vision, this should be used as a guidepost rather than as the "last word" for subgrantees.

[20] WSBO (2022), 2022 Biennial Legislative Report. Accessed at: Broadband Office 2022 Biennial Legislative Report

[21] According to the Notice of Funding Opportunity, BEAD funding's principal focus will first be deploying broadband to unserved locations – locations without any broadband service at all, or with broadband services offering speeds bellow 25 megabits per second (Mbps) downstream and 3 Mbps upstream—and then underserved locations – locations with without broadband service offering speeds of 100 Mbps downstream and 20 Mbps upstream.

2.1.2 What success looks like

Success means universal access for every resident, business, and community, ultimately reaching statewide goals of 150 Mbps symmetrical speeds for all residents and businesses by 2028. At this time, conservative projections based on the 2019-2021 ACS conducted by the United States Census Bureau estimate that 248,000 households in Washington have not adopted broadband services. This equates to about 9% of total households in the state. This data is based on broadband subscriptions that include cell plans, broadband plans, satellite, cable, fiber, or Digital Subscriber Line (DSL) coverage.

Moreover, success in the state of Washington promotes equitable and inclusive economic development. To be successful, the state must support economic growth, job creation, and workforce development through expanded broadband access and adoption across all underrepresented populations.[22] This pillar of success directly ties to the state's focus on digital equity, which means closing the digital divide and developing a broadband infrastructure that is accessible to all covered populations.

Finally, success entails "future-proofing" reliable broadband infrastructure while delivering at a scale and rate that meets access and equity goals. This allows for the construction and infrastructure of today to be usable for tomorrow, reducing capital costs and environmental disturbances through the – currently in-development – 'Dig-Once' policy and ensuring broadband services can be supported after federal funding is expended.[23]

2.1.3 How the vision for the BEAD and State Digital Equity Planning Grant are aligned

The state of Washington is deeply committed to establishing digital equity throughout the state and has focused on building new programming capacity to advance digital equity ideas and strategy in conjunction with funding broadband infrastructure projects. Over the past years, the WSBO has implemented the following efforts to provide individuals and communities in Washington with the information technology capacity needed for full participation in the digital society and economy.

To increase digital equity, the WSBO started a digital navigator program, providing direct assistance to those with the greatest need in terms of access to and knowledge of how to use technology devices and services. In accordance with the National Digital Inclusion Alliance definition of a digital navigator, they are "trusted guides who can assist community members in internet adoption and the use of computing devices." Further, digital navigators help individual

[22] NTIA's BEAD Notice of Funding Opportunity includes in its definition of underrepresented populations the following communities that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, including: low-income households, aging individuals, incarcerated individuals, veterans, persons of color, Indigenous and Native American persons, members of ethnic and religious minorities, women, LGBTQI+ persons, persons with disabilities, persons with limited English proficiency, persons who live in rural areas, and persons otherwise adversely affected by persistent poverty or inequality. In addition to these communities, Washington state law also includes children and youth in foster care and individuals experiencing housing instability when defining covered populations.

[23] Current state law currently only directs Washington State Department of Transportation (WSDOT) to adopt a policy that requires it to proactively provide broadband owners of any planned state highway projects. However, if no owners are ready or able to install broadband conduit at the time of WSDOT's construction project, then WSDOT has the option to decide if it wants to hire its own contractors to lay broadband conduit. As a result, it is possible that the WSDOT could decide to not lay any fiber conduit along certain ROWs, because of a lack of broadband project readiness, and consequently, due to pavement cut moratoriums, these ROW would go unused. As a result, the WSBO will work with the Legislature to require WSDOT to lay conduit in those instances where it is planning highway construction and no broadband owners are available or able to install conduit at that time.

sign up for the Affordable Connectivity Program (ACP), connect with government and community services, acquire digital literacy skills, and more. For Fiscal Year 2024, the WSBO has announced that up to $14.5 million is available to fund Digital Navigator Programs.

In addition to the digital navigator program, the WSBO supports the Digital Equity Forum, established in the 2021 Operating Budget, in close partnership with the Washington State Office of Equity to advance digital connectivity in Washington. To date, the group has administered multiple workshops, public engagement efforts, listening sessions, a statewide survey and focus groups to listen to local communities and help identify barriers to digital equity.

These preexisting digital equity efforts are the base for the development of both the State Digital Equity Plan and the BEAD 5-Year Action Plan, demonstrating the interdependence of digital equity and broadband expansion in Washington state. With this intrinsic linkage, the state of Washington is committed to ensuring that all residents, businesses, and communities have access to sustainable high-speed internet. This encompasses the covered populations as outlined by the National Telecommunications and Information Administration (NTIA), including individuals who are low-income, aging, incarcerated, disabled, veterans, and racial and ethnic minorities; individuals who have language barriers; and individuals from rural areas. This also encompasses Washington state's additional underserved populations, which include children and youth in foster care and individuals experiencing housing instability.[24]

As exemplified by Washington state's digital equity programming, community partnerships, and extensive public engagement efforts, the state views digital equity as an essential component to full broadband coverage. In short, Washington state seeks to increase broadband access in the state for speed and accessibility, while simultaneously increasing affordability, adoption, and digital skills training for covered populations.

2.2 Goals and Objectives

The state of Washington's goals and objectives stem from a comprehensive vision that universal broadband access be affordable, reliable, scalable, and sustainable to support equitable economic development and to connect every community throughout the state, ultimately enriching the lives of all Washington residents and businesses. Within that, Washington has established the following goals identifying measurable objectives for success.

1. Universal access
2. Equitable economic development
3. Scalability and sustainability

[24] Washington State Legislature (n.d.), RCW 43.330.530. Accessed at: RCW 43.330.530

2.2.1 Goal 1 – Universal Access: Provide every business and household with the means to access broadband by 2028.

Objective 1.1 Deployment: Build a broadband network that encompasses all regions in Washington to support legislated targets:

- By 2024: 25/3 megabits per second (Mbps) scalable to all residences and businesses
- By 2026: 1/1 gigabit per second (Gbps) all anchor institutions
- By 2028: 150/150 Mbps all residents and businesses

Objective 1.2 State Coordination: Coordinate with federal, state, local, and tribal entities to minimize regulatory barriers to deployment.

Objective 1.3 Access: Ensure that community anchor institutions, businesses, and residences have reliable access to high-speed internet through at least one provider.[25]

Objective 1.4 Affordability: Every business and household in Washington state should have affordable access to the broadband they need for work, school, healthcare, etc. This includes reducing barriers to access through policy and programs, such as:

- Increase awareness of benefits and enrollment of eligible households in the Affordable Connectivity Program.
- Expand the availability of non-federally funded subsidy and grant programs to increase affordability of broadband.

Objective 1.5 Adoption: Grow the number of Washington residents subscribed to broadband services by supporting accessible digital literacy and skills building services that provide the information, support, and skills needed to successfully adopt broadband service and technology tools.

Objective 1.6 Digital Equity: Increase awareness around existing digital equity programs and strengthen partnerships with community anchor institutions and community organizations to support digital inclusion activities in their respective communities.

[25] The BEAD Notice of Funding Opportunity specifies that if states have any BEAD funding remaining after deploying broadband to unserved and underserved locations, it can then use funding to connect and upgrade community anchor institutions that lack a 1 Gbps connection. NTIA considers the following entities as community anchor institutions: school library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community support organization that facilitates greater use of broadband service by vulnerable populations. Additionally, NTIA allows the state to propose additional types of institutions, such as senior centers and public youth centers that should qualify as community anchor institutions. The state of Washington is currently finalizing a list of institutions to submit to the NTIA as part of its Initial Proposal.

2.2.2 Goal 2 – Equitable Economic Development: Support economic growth, job creation, and workforce development through expanded broadband access and adoption across all covered and underserved populations.

Objective 2.1 Equitable Workforce Development: Facilitate a more inclusive approach to workforce development so that covered populations across the state have fewer barriers and more opportunities related to broadband expansion, online training, education, and employment.

Objective 2.2 Skill Development: Work with relevant institutions such as, public libraries, educational institutions, Tribal nations, and government entities, to expand foundational digital literacy training and advanced digital skills development for residents entering the workforce, providing them with the knowhow necessary to pursue career advancement in previously out-of-reach fields.

Objective 2.3 Economic Growth: Realize local, tribal, and statewide economic growth sparked by an uptick in job creation associated with the construction and development activities related to expanding broadband infrastructure.

2.2.3 Goal 3 – Scalability and Sustainability: "Future-proof" broadband infrastructure while delivering at a scale and rate that meets access and equity goals.

Objective 3.1 Scalable Deployment: Invest in technology and infrastructure that has the capacity to adapt to meet residents and business's future technological needs, beyond the state's 2026 goal of 1/1 Gbps for all anchor institutions and the 2028 goal of 150/150 Mbps for all residents and businesses.

Objective 3.2 Sustainable Practices: Encourage integration of environmental sustainability best practices into deployment, operation, and maintenance of broadband networks and services that link with Washington state's climate policy and designing for climate resilience.

Objective 3.3 Cybersecurity: Ensure that subgrantees charged with broadband deployment adhere to cybersecurity risk management plans to maintain network infrastructure security and provide residents and businesses with cybersecurity training to increase awareness and safety when using the internet.

3. CURRENT STATE OF BROADBAND AND DIGITAL INCLUSION

Washington state has a tradition of being at the forefront of supporting broadband deployment and advancing digital equity for all of its residents. It first recognized broadband's significance back in 1996 when it established one of the first high-speed internet network in the nation to connect all educational institutions throughout the state.[26] Since then, the state – along with local governments, tribal nations, and private organizations – has continued to support broadband expansion while working to ensure all Washingtonians can harness its benefits. For example, Washington Senator Patty Murray introduced and advocated for the passage of the Digital Equity Act under the Bipartisan Infrastructure Law, to support digital inclusion programs.[27]

What is digital inclusion?

Digital inclusion describes the activities that are necessary to ensure that all individuals have access to, and the use of, affordable information and technology, including access to digital literacy training, provision of quality technical support, and basic awareness of measures to ensure online privacy and cybersecurity.

Source: 47 U.S.C. §1721(11).

Additionally, Seattle and King County are frequently cited as case studies for their work on expanding broadband affordability, adoption, and access, in addition to offering digital skills building to community members in need.[28] The state has also supported local and tribal organizing for increased broadband services through Broadband Action Teams (BATs). These community-driven collaborations identify the connectivity and accessibility needs for their communities and liaise with the Washington State Broadband Office (WSBO), providing a foundation for community-centric planning.

Historically, statewide broadband deployment initiatives have primarily been coordinated through the Community Economic Revitalization Board (CERB) and the Public Works Board (PWB), and the WSBO. Although state law only established the WSBO in 2019, it has been tasked with the responsibility of overseeing the administration of BEAD funding through its role as the central broadband planning body for the state of Washington. The state of Washington has benefited from multiple federal, state, and local grant and loan programs. This funding has supported broadband deployment projects and other broadband adoption, affordability, access, and digital equity activities which are implemented through various partnerships, at a state, local, regional, and tribal level.

A summary of the corresponding hard assets – include towers, buildings, utility poles – and soft assets or efforts – include programs, activities, strategies, skills, technical assistance – can ultimately be classified into five distinct categories, focusing on deployment, adoption, affordability, access, and digital equity. The state has already deployed an extensive broadband

[26] The K20 Network is discussed in more detail in **Section 3.2.1**.
[27] National Digital Inclusion Alliance (n.d.), Digital Equity Act. Accessed at: Digital Equity Act | The Digital Equity Act will create two new federal grant programs to help promote digital equity in communities across the country.
[28] National Digital Inclusion Alliance (2016), National Digital Inclusion Alliance Names the City of Seattle's David Keyes the Charles Benton Digital Equity Champion. Accessed at: https://www.digitalinclusion.org/blog/2016/04/21/ndia-names-david-keyes-digital-equity-champion/

network through investments in various broadband stakeholders, such as internet service providers (ISPs), public utility districts (PUDs), port authorities, and other state actors, to name a few. Yet, getting people to connect to this network requires support from organizations and programs that provide skills and devices needed to connect to these networks at an affordable cost. The consistent theme connecting all of these programs is the emphasis on digital equity, to ensure that everyone is able to participate in all aspects of economic, social, and civic life.

However, the WSBO acknowledges that there is still substantial work to be done in order to achieve universal coverage. According to the Federal Communication Commission (FCC) 2023 data, more than 236,000 businesses and residents are considered unserved by broadband level speed and reliability in Washington state, with an additional nearly 80,000 considered underserved. Based on feedback from engagement activities, bridging this gap to universal coverage will require the WSBO to build on existing broadband infrastructure that will expand ISPs networks and access to CAIs. Additionally, the state will need to provide additional digital skill training and increase the number of affordable programs to offset the high costs in some areas.

3.1 *Existing Broadband Resources*

To distill what work needs to be done to bring broadband to all residences, businesses, and communities, it is important to document Washington's pre-existing efforts to increase broadband access, affordability, and adoption. The following sections highlight broadband-related efforts already underway in Washington, providing detail on the contributors to the current state of broadband and digital inclusion in Washington state:

- **3.1.1 Roles and Responsibilities** – Provides an overview of the Washington State Broadband Office's mission and responsibilities.
- **3.1.2 Broadband Funding Throughout the State of Washington** – Offers an overview of broadband funding throughout the state.
- **3.1.3 Programs Administered by State Entities** – Outlines the broadband programs administered by Washington state entities.
- **3.1.4 Washington State Broadband Office Staffing** – Details current and future staff in the Washington State Broadband Office.
- **3.1.5 Contractor Support** – Identifies any contractor support that the state will engage with to effectively distribute funding.
- **3.1.6 Local and Regional Activities** – Outlines current local and regional activities related to broadband, distinct from state administered programs.
- **3.1.7 Tribal Programs** – Provides an overview of the tribal broadband programs in the state of Washington.
- **3.1.8 Partnerships** – Presents formal and informal partnerships critical to bringing dependable, high-speed broadband to all businesses, residents, and communities across the state.

3.1.1 Roles and Responsibilities

In recognition that broadband access is critical to the residents of Washington, state law established the WSBO in 2019 and tasked it with promoting access and achieving download/upload speed goals for residences, businesses, and communities.[29] The Office's mission is to enrich the lives of all Washington state residents and businesses by ensuring they have access to affordable, reliable, redundant, and scalable broadband technologies ensuring the economic viability of both urban and rural Washington state today and into the future.

The WSBO provides funding for broadband infrastructure, technical support, and digital equity related programs to local governments, tribal nations, public and private entities, nonprofit organizations, and consumer-owned and investor-owned utilities. Broadband infrastructure grant programs to date, include:

- State Broadband Matching Grants funded with state appropriations for the 2021-23 biennium,
- Infrastructure Acceleration Grants funded through American Rescue Plan Act's (ARPA) State and Local Fiscal Recovery Funds and Capital Projects Funds (SLFRF), and
- Broadband Infrastructure Program grants funded through the NTIA.

Technical support grant programs to date include funding for:

- Developing Rapid Design Studies for local governments and tribal nations to design and evaluate alternative broadband deployment strategies to expand services to unserved and underserved locations. WSBO funded studies for twenty-six counties for $104,000 and studies for four tribes for $16,000, totaling $120,000.
- Supporting Washington State University Extension efforts to support counties in developing Community Action Plans that identify needs and gaps in broadband coverage.
- Providing grant writing services to local governments and tribal nations interested in applying for federal infrastructure grants for broadband development. WSBO funded services for three local governments for $24,000 and twelve tribes for $49,500, totaling $73,500.

The primary digital equity related grant program, to date, is the Digital Navigator Program, through which community partners provide free digital navigation, digital literacy skills training, devices, and assistance with affordable internet access, for income qualified individuals or households.

In addition to the work that the WSBO does to expand broadband infrastructure, the Department of Commerce also houses two additional offices that fund broadband projects: CERB and PWB. The Washington State Legislature created CERB in 1982 to promote local economic development – particularly in rural areas of the state – by providing grants and loans to fund public infrastructure projects, including telecommunications and broadband projects. CERB has

[29] Washington State Legislature (n.d.), RCW 43.330.532. Accessed at: RCW 43.330.532

awarded more than $15 million for rural and tribal broadband projects since 2016.[30] Similarly, in 1985 the Legislature established the PWB to provide technical assistance and issue low-interest loans to address infrastructure needs. In 2019, the Legislature created the PWB broadband construction grant and loan program, which PWB can use to award funding to non-profit and some for-profit businesses, unlike CERB which can only provide funding to local governments. Since the creation of this program, the PWB has awarded nearly $58 million to expand broadband availability.[31]

The Washington State Department of Transportation (WSDOT) is a trusted partner of the WSBO and plays an important role in expanding broadband infrastructure. Due to the state mandated development of a 'Dig-Once' policy and WSDOT's capacity to install conduit, WSDOT is key to broadband deployment coordination. Beginning in 2021, changes to state law required WSDOT to establish and implement a 'Dig-Once' policy that encourages greater coordination between WSDOT and WSBO, by requiring WSDOT to proactively notify broadband facility owners with information about construction projects, allowing these owners to efficiently install broadband infrastructure – such as fiber optic cables – at the same time.[32] Additionally, if no owners are ready or able to participate in the installation of broadband infrastructure concurrently with state highway projects, WSDOT may enlist its contractors to install broadband conduit as part of road construction projects.[33] According to a study by the US Government Accountability Office, coordinated timing of transportation and broadband projects can create taxpayer savings on labor, equipment, and materials up to 16% per mile in rural areas and up to 33% per mile in urban areas, demonstrating the potential benefits of a 'Dig-Once' policy.[34]

Although the state relies on all three offices – WSBO, CERB, and PWB – and the Washington Utilities and Transportation Commission to help it meet its broadband goals, it has designated the WSBO as the administrative entity for Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity grant funding.

3.1.2 Broadband Funding Throughout the State of Washington

The state of Washington has benefitted from multiple federal, state, and local grant and loan programs through various funding recipients, including state and local governments or private ISPs, to name a few. **Table 1** outlines most of these programs, total allocation amounts, and funding recipients, based on publicly available information. A more detailed version of this table for state administered programs, including more information on project-specific funding amounts, and intended outcomes, is in **Appendix 7.5**.

[30] Community Economic Revitalization Board (2022), CERB 2022 Legislative Report. Accessed at: https://deptofcommerce.app.box.com/v/CERB2022LegReport
[31] Public Works Board (2022), PWB 2022 Legislative Report. Accessed at: PWB_2022_Legislative_Report.pdf (wa.gov)
[32] Washington State Legislature (n.d.), RCW 47.44.160. Accessed at: https://app.leg.wa.gov/RCW/default.aspx?cite=47.44.160
[33] **Note**: Current state law currently only directs WSDOT to adopt a policy that requires it to proactively provide broadband owners of any planned state highway projects. However, if no owners are ready or able to install broadband conduit at the time of WSDOT's construction project, then WSDOT has the option to decide if it wants to hire its own contractors to lay broadband conduit. As a result, it is possible that the WSDOT could decide to not lay any fiber conduit along certain ROWs, because of a lack of broadband project readiness, and consequently, due to pavement cut moratoriums, these ROW would go unused. As a result, the WSBO will work with the Legislature to require WSDOT to lay conduit in those instances where it is planning highway construction and no broadband owners are available or able to install conduit at that time.
[34] U.S. Government Accountability Office (June 27, 2012), Planning and Flexibility Are Key to Effectively Deploying Broadband Conduit through Federal Highway Projects. Accessed at: https://www.gao.gov/products/gao-12-687r

Table 1: Broadband Funding Invested in the State of Washington, as of June 2023

Program Name	Purpose	Total Allocation
	FEDERAL FUNDING SOURCE	
Rural Digital Opportunity Fund	An FCC initiative designed to invest $20.4 billion in grant funding to develop rural broadband networks.	$215,768,532[35]
Infrastructure Acceleration Grant	An ARPA – SLFRF program, administered by the WSBO, to fund broadband infrastructure construction projects designed to deliver broadband service as part of a contiguous network.	$138,836,515[36]
Broadband Infrastructure Grant	An ARPA, Capital Projects Fund, program, administered by the WSBO, to fund broadband infrastructure construction projects designed to deliver broadband service as part of a contiguous network.	$121,523,711
PWB Broadband Construction Federally Funded Grants	A PWB administered program that used funding from the ARPA, Capital Projects Fund, to fund additional broadband planning and construction projects through low-interest loans or grants, to local governments, federally recognized tribes, nonprofit organizations, cooperative associations, multiparty entries, LLCs, and incorporated businesses or partnerships, to provide high-speed, open-access broadband services to unserved populations in rural and urban communities across the state.	$44,676,617
Broadband Infrastructure Program (BIP)	An NTIA funded program, administered by the WSBO, to fund broadband infrastructure construction projects designed to deliver broadband service as part of a contiguous network.	$30,000,000
CERB Rural Broadband Projects	A CERB administered program that used funding from the ARPA, Capital Projects Fund, to support additional broadband construction projects through low-interest loans or grants, to local governments and federally recognized tribes, to provide high-speed, open-access broadband services to unserved and underserved populations in rural communities across the state.	$23,544,200
FCC Connect America Fund Phase II - Auction 903	An FCC program that uses competitive bidding to allocate up to $1.98 billion over 10 years to typically larger telephone providers for voice and broadband service at or above specific performance levels in high-cost areas.	$19,943,507
ReConnect Broadband Program	A Rural Development Investment to deploy a fiber-to-the-premises network to connect 4,330 people, 61 businesses and 21 farms to high-speed internet in rural Cowlitz County. Kalama Telephone Company will make high-speed internet affordable by participating in the FCC's Affordable Connectivity and Lifeline programs.	$8,637,540

[35] Funding originally included $7 million for a project overseen by the ISP St. John's Telco, but after the federal government awarded funding, the ISP declared bankruptcy. Since this funding will be returned to the FCC, we have removed it from the Rural Digital Opportunity Fund's total allocation amount. However, this figure does still include more than $80 million in funding for satellite service through Starlink and an additional $7.7 million for Commnet Wireless projects that will rely on unlicensed fixed wireless. According to the BEAD NOFO, both delivery systems do not meet the criteria for reliable broadband service, and, therefore, project locations will still be considered unserved.

[36] This amount only includes funding that the WSBO has awarded for broadband projects. Overall, the WSBO received more than $145 million from the federal government from the ARPA SLFRF. Not included in this amount is $2.1 million for program administration and $5 million that the WSBO has reserved to cover any increase in project material costs.

Program Name	Purpose	Total Allocation
USDA Community Connect Grants	A program that provides financial assistance to eligible applicants that will provide broadband service in rural, economically challenged communities where service does not exist.	$4,001,885
ReConnect Broadband Program	A Rural Development Investment to provide Mason County Public Utility District No. 3 with the opportunity to use funding to provide necessary broadband services to the Three Fingers community in Grapeview, WA.	$2,476,279
Distance Learning and Telemedicine Grants	A program that uses competitive grants to help rural communities use advanced telecommunications technology to connect to each other - and the world - overcoming the effects of remoteness and low population density.	$1,048,433
ReConnect Broadband Program	A Rural Development investment to deploy fiber-to-the-premises broadband service in rural Washington. The funded service area includes 144 households spread over 0.16 square miles.	$596,781
Alternative Connect America Cost Model	A program that provides set monthly payments, based on a cost model, to Rate of Return carriers to build broadband to a specific number of fixed locations in areas eligible for funding.	Providers receive variable monthly payments based on a cost-model[37]
Broadband Loop Support	A program that provides support for voice and broadband service, including stand-alone broadband. The fund helps carriers recover the difference between loop costs associated with providing voice and/or broadband service and consumer loop revenues.	Providers receive variable monthly payments based on a cost-model[38]
STATE FUNDING SOURCE		
State Match Program	A state program that provides matching grant funding for federal broadband infrastructure funding opportunities.	$21,090,934
OSPI Digital Equity and Inclusion Grant	A state program that provides grants to schools or school districts to help close opportunity gaps related to educational technology by attaining a 1:1 student to learning device ratio, expanding technical support and training for educators, and develop district or school-based capacity to assist families and students.	$18,606,030
CERB Rural Broadband Projects	A CERB administered program that funds broadband construction projects through low-interest loans or grants, to local governments and federally recognized tribes, to provide high-speed, open-access broadband services to unserved and underserved populations in rural communities across the state.	$11,748,361

[37] Universal Service Administrative Co. (July 2023), Detailed Payment Data Search. Accessed at: Detailed Payment Data Search - High-Cost Program - USAC.org
[38] Ibid

Program Name	Purpose	Total Allocation
PWB Broadband Construction State Funded Grants	A PWB administered program that funds broadband planning and construction projects through low-interest loans or grants, to local governments, federally recognized tribes, nonprofit organizations, cooperative associations, multiparty entries, LLCs, and incorporated businesses or partnerships, to provide high-speed, open-access broadband services to unserved populations in rural and urban communities across the state.	$10,067,553
Washington Universal Communications Services Program	A program established by the Washington legislature to help small rural telecommunications companies maintain voice services and provide and enhance broadband services in high-cost areas.	$4,850,000
CERB Planning Program	A program that provides grants for planning projects that lead to economic development. Activities can include feasibility studies, environmental planning work, and pre-construction engineering.	$1,767,225
Rapid Design Study	A program to provide counties and tribes, that volunteer to participate, with a technical review that analyzes the costs of up to six different broadband buildout options need to expand broadband with the participant's jurisdiction.	$120,000

3.1.3 Programs Administered by State Entities

The recent increase in funding has directly resulted in an increase in state administered programs. As **Table 2** describes, the state has used this funding to aggressively address issues broadband availability and close the digital divide.

Table 2: Current Broadband Activities the State Administers or Oversees

Activity Name	Description	Intended Outcome(s)
Digital Equity Forum	A group of appointed members that develop recommendations to advance digital equity in Washington state.	Provide feedback on the digital equity plan, review grant applications, and determine priority for new programs.[39]
Statewide Digital Equity Plan	Worked conducted by the WSBO to create a statewide digital equity plan as part of the federal broadband infrastructure requirements under the Infrastructure Investment and Jobs Act.	Develop Washington's first statewide digital equity plan.
BEAD Program Grants	A program to fund broadband deployment through grants to public and private organizations in unserved and underserved locations.	Increase access to affordable and reliable broadband in unserved and underserved locations throughout the state of Washington.

[39] The Digital Equity Forum reviews grant applicants, but programs are currently unfunded to date.

Activity Name	Description	Intended Outcome(s)
Broadband Action Teams	Community-driven collaborations that identify the connectivity and accessibility needs of their communities.	Helps communities centralize broadband conversations with the WSBO and develop relations between participants to achieve community and project-specific goals.
Connect Washington Coalition	A collaboration of public and private partners to build statewide strategies for universal, affordable, and sufficient internet access and digital participation.	Provide affordable, robust internet service and access to digital literacy training, internet-enabled devices, and technical support, designed to enable self-sufficiency and collaboration.
CERB Rural Broadband Program	A program that funds broadband construction projects through low-interest loans or grants, to local governments and federally recognized tribes, to provide high-speed, open-access broadband services to unserved and underserved populations in rural communities across the state.	Increase community development and access to broadband services.
PWB Broadband Construction Funding	A program that funds broadband planning and construction projects through low-interest loans or grants, to local governments, federally recognized tribes, nonprofit organizations, cooperative associations, multiparty entries, LLCs, and incorporated businesses or partnerships, to provide high-speed, open-access broadband service, to unserved populations in rural and urban communities across the state.	Increase community development and access to broadband services.
Public Retail Broadband	A town, second class city, county or public utility district or port district may construct, purchase, acquire, develop, finance, lease, license, provide, contract for, interconnect, alter, improve, repair, operate, and maintain telecommunications services or telecommunications facilities.	Purpose of furnishing its inhabitants with telecommunications services.
Digital Navigators Program	A program to help Washington residents navigate the Internet, provide free digital literacy skills training, and connect with government and community services, among other digital services.	Help community members improve internet adoption and their use of computing devices.
Rapid Design Study	A program to provide counties and tribes, that volunteer to participate, with a technical review that analyzes the costs of up to six different broadband buildout options need to expand broadband with the participant's jurisdiction.	Provides participating counties and tribes with a broadband infrastructure cost assessment.
Grant Writing Assistance	A program that provides contracted grant writing services to local governments and tribes seeking funding from a federal agency for broadband infrastructure development.	Helps participants apply to federal broadband funding opportunities.

3.1.4 WSBO Staffing

To support the state's urgency to provide universal broadband throughout Washington state, the WSBO has assembled a dedicated team to coordinate broadband activities, including the distribution of BEAD and Digital Equity funding. As of July 2023, there are currently nine full-time staff who manage and oversee statewide broadband and digital equity programming, as **Table 3** shows, and an additional two full time staff that the WSBO plans to hire.

Table 3: WSBO's Current and Planned Full-Time Employees

Current/ Planned	Position	Description of Role
Current	Director of WSBO	Oversees the growth of broadband infrastructure within Washington
Current	Deputy Director of WSBO	Oversees internal programmatic operations, processes, staffing, and overall office strategy
Current	Administrative Assistant	Supports all broadband staff with meeting coordination, documentation, travel, etc.
Current	Broadband Infrastructure Programs Manager	Manages BEAD Contract, Reporting and Federal Requirements
Current	Broadband Infrastructure Programs Supervisor	Manages Broadband Infrastructure Team, oversees BEAD work performed by the project managers and technical assistance
Current	Broadband Infrastructure Project Manager (2)	Manage the BEAD contracts with recipients and provide technical assistance, monitoring, and compliance with federal requirements
Planned	Broadband Infrastructure Engineer	Expert determining availability and feasibility of deploying new and emerging technologies in broadband internet service. Conduct site inspections and verification
Current	Strategic Planning Manager	Oversees all planning operations and projects, stakeholder outreach, and WSBO-related digital equity work, particularly as it relates to BEAD
Current	Planning Lead	Leads all WSBO planning efforts
Planned	Policy and Legislative Manager	Lead stakeholder and partner communications to update on broadband funding opportunities, project status, digital equity efforts, etc.
Current	Broadband Engagement Coordinator	Leads external stakeholder engagement, particularly with Broadband Action Teams
Current	Managing Director of Digital Equity	Leading engagement with the Digital Equity Forum, collaborating with community partners, state partners, and other stakeholders to focus on community-led solutions for reaching digital equity goals
Current	Digital Navigator Program Manager	Managing the Digital Navigator Program and supporting statewide digital equity-related initiatives

3.1.5 Contractor Support

To supplement existing WSBO staffing levels, the state currently utilizes contractors to assist with the implementation of state broadband development goals. As illustrated in **Table 4**, the state is using the services of consultants to analyze the current state of broadband in the State and identify the needs and gaps that need to be filled. Moreover, consultants will help develop and implement a thorough stakeholder engagement plan to build out the plan for investing federal and state funds, by assessing the needs of different communities and providers. Additionally, given the anticipated increase in available funding, the WSBO intends to hire an additional contractor to provide technical assistance to BEAD applicants.

Table 4: Current and Planned Contractor Support

Current or Planned	Full-Time or Part-Time	Position	Description of Role
Current	Full-Time	Consulting Team	The firm provides industry expertise, supports stakeholder coordination and engagement, and assists with developing a strategic view of the current and future state for Washington.
Planned	Part-Time	Consultant	Technical analysis of project area and evaluation on BEAD applicant's project feasibility, cost, and priorities.

3.1.6 Local and Regional Activities[40]

Local and regional activities are equally as important to broadband expansion as federally and state funded activities. Besides filling the gaps in state administered programs, local entities and organization are better able to identify and address their specific community's needs. **Table 5** identifies current and planned activities undertaken by local and regional authorities, with the understanding that this list may not include those activities that are not known to the WSBO or finalized at the time of this report.

Table 5: Examples of Current Activities that Local or Regional Authorities Administer Independent of the State

Activity Name	Description	Intended Outcome(s)
Boosting Pierce County	Pierce County received $15 million under the ARPA which it must spend by 2026 on broadband infrastructure projects.	Pierce county intends to award funding to any internet service or infrastructure providers to bridge the broadband gaps across the county and encourage the expansion of broadband service.
Broadband to Pierce County	A public-private partnership between Pierce County and Comcast that combines County funding with broadband service providers to build infrastructure that will expand the availability of high-speed internet services on the Key Peninsula.	Comcast will construct the infrastructure and make available a fast and reliable fiber-rich network and full suite of services to over 526 Key Peninsula homes and businesses, including multi-gig broadband speeds for residential customers and speeds up to 100 Gbps for business customers.

[40] Local and regional activities as outlined in **Section 3.1.6** refer to activities that are not affiliated with any state-run program or that local authorities initiated themselves using local funding sources or by applying directly for federal funding.

Activity Name	Description	Intended Outcome(s)
City of Anacortes Investments for Public Works and Economic Development Facilities	The city received $2,253,731 from the Economic Development Administration for broadband deployment.	City-wide installation of a fiber optic broadband network to expand broadband coverage in the designated opportunity zone in Skagit County.
City of Seattle Technology Matching Fund	City dollars are matched by the community's contribution of volunteer labor, materials, professional services, or cash to increase internet access and adoption.	Provide digital navigator services, digital literacy skills training, devices and technical support, access to the internet, and/or Affordable Connectivity Program outreach and enrollment.
Internet for All Seattle Initiative	Framework that serves as a roadmap for Seattle to move closer to its goal of universal internet adoption for all residents.	Support Seattle Public Schools' efforts to increase and improve student-household internet access and quality; foster up to 20,000 internet connections and devices for underserved; for the 2023 Technology Access and Adoption Study, the data points toward universal internet adoption; significantly increase the internet adoption rate for households with annual incomes under $25,000.

In addition to the 12 tribes that submitted independent Community Action Plans, four tribes partnered with counties in developing a Community Action Plan. In total, 16 tribes participated. Additional information about tribal Community Action Plans in **Appendix 7.2**.

3.1.7 Tribal Programs

In addition to the activities and programs on the local, state, and federal level as detailed in the tables above, tribes are also working towards expanding access to broadband with their own programs. **Table 6** identifies broadband programs administered by tribes with the understanding that this list may not include those activities that are not known to the WSBO or finalized at the time of this report.

Table 6: Current Activities that Tribal Governments Administer Independent of the State

Tribal Nation	Description	Intended Outcome(s)	Funding
Confederated Tribes of the Colville Reservation	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	The Broadband Infrastructure Deployment project proposes to install fiber directly connecting 2,867 unserved Native American households with qualifying broadband with the following speeds: Fiber: 1 Gbps symmetrical; wireless: 300/30 Mbps.	$48,405,831
Cowlitz Indian Tribe	NTIA Tribal Broadband Connectivity-Use and Adoption	This project proposes to increase broadband use and adoption among Native American Tribal citizens and community members in Longview, Washington through the implementation of affordable broadband services, distribution of enabled devices, digital literacy and skills training programs, and the launch of a Tribal platform for the delivery of tribal services.	$7,580,564
Hoh Indian Tribe	NTIA Tribal Broadband Connectivity-Planning, Engineering, Feasibility, and Sustainability	This Planning, Engineering, Feasibility, and Sustainability project will fund pre-construction activities, including network design engineering, permitting, and an environmental review, to provide future fiber broadband service to 30 Tribal households and three Tribal Community Anchor Institutions.	$500,000
Lummi Nation	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	The Broadband Infrastructure Deployment project proposes to install fiber directly connecting 2,273 unserved Native American households, 193 Tribal businesses, and 23 anchor institutions with 1 Gbps symmetrical speeds.	$15,942,129
Port Gamble S'Klallam Tribe	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	The project proposes to construct both aerial fiber and underground Fiber-to-the-Home to 69 unserved households, in addition to 118 households that are under construction and scheduled for occupancy in early 2022. Once completed, the project will provide Internet service to the community at speeds five times greater at the same price that is currently available through commercial vendors.	$443,321

Tribal Nation	Description	Intended Outcome(s)	Funding
Quinault Indian Nation	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	This Broadband Infrastructure Deployment project proposes to purchase conduit reels that will be used for the installation of a future fiber network that will provide service to 475 unserved Tribal households, 11 businesses, and 25 community anchor institutions.	$500,000
Samish Indian Nation	NTIA Tribal Broadband Connectivity-Use and Adoption	This project proposes to address the current digital divide by conducting an analysis of internet assets, digital literacy skills, and the availability of broadband equipment and devices for Samish Tribal citizens.	$584,800
Sauk-Suiattle Indian Tribe	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	The Broadband Infrastructure Deployment project proposes to construct a Technology Office which will hold a server room and be outfitted to protect the equipment for future growth.	$500,000
Shoalwater Bay Indian Tribe of the Shoalwater Bay Indian Reservation	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	The Broadband Infrastructure Deployment project proposes to deploy a 1.8-mile fiber connection to connect unserved Tribal government buildings and 46 Tribal homes, and purchase Customer Premises Equipment as part of a 2.5 GHz deployment.	$498,102
Spokane Tribe of Indians	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	The Broadband Infrastructure Deployment project proposes to install fiber directly connecting 800 unserved Native American households, 10 businesses, and 28 anchor institutions with fiber-to-the-home 100 Mbps/100 Mbps service.	$16,837,920
The Suquamish Tribe	NTIA Tribal Broadband Connectivity-Use and Adoption	This Broadband Use and Adoption Project proposes to improve community anchor institutions' digital readiness and the development of workforce training and digital literacy programs aimed to increase digital inclusion among Tribal members. The implementation of this project will enable broadband adoption activities, including telehealth, distance learning, affordable broadband programs, workforce development, and digital inclusion efforts.	$1,093,385
Upper Skagit Indian Tribe	NTIA Tribal Broadband Connectivity-Infrastructure Deployment	The Broadband Infrastructure Deployment project proposes to install fiber directly connecting 76 unserved Native American households to qualifying broadband service with up to 1 Gbps symmetrical speeds.	$1,507,590

3.1.8 Partnerships

State and local programs cannot address broadband issues comprehensively without partner support and insight. In a state as diverse as Washington, formal and informal partnerships are critical to bringing dependable, high-speed broadband to all businesses, residents, and communities across the state. Partnerships may take the form of both formal agreements and informal working relationships depending on the partner and nature of work being conducted.

Table 7, below, outlines examples of public-private partnerships in the state of Washington, outside of publicly funded programs that have advanced broadband expansion to residents around the state. Public-private partnerships complement exclusively government-funded activities and create buy-in, especially from internet service providers, and the opportunity to leverage more funding sources and assets.

Table 7: Public-Private Partnerships in Washington Related to Broadband

Activity Name	Partners	Description	Funding
Broadband to Pierce County	Pierce County Comcast	A public-private partnership between Pierce County and Comcast that combines County funding with broadband service providers to build infrastructure that will expand the availability of high-speed internet services on the Key Peninsula. Comcast will construct the infrastructure and make available a fast and reliable fiber-rich network and full suite of services to over 526 Key Peninsula homes and businesses, including multi-gig broadband speeds for residential customers and speeds up to 100 Gbps for business customers.	$5 million total, with $3.75 million coming from Pierce County
Broadband to City of Winlock	Lewis county ToledoTel	This is a public-private fiber deployment plan in cooperation with regional ISP ToledoTel and Lewis County to expand high-speed internet services in and around Winlock. The project aims to bring fiber access to 1,800 residents in and around the City of Winlock by the end of 2026.	$25.8 million total, $23.5 million in federal funded grant, with $2.35 million coming from Toledo Tel
Lift Zones	Comcast and multiple community organization partners and local governments	Approximately 24 Lift Zones provide thousands of Washington residents with locations to access online education, healthcare, and employment resources. Some of Lift Zones have also received state-of-the-art technology makeovers from Comcast, including new laptops and technology that will help community partners offer job skills training, education, computer classes, internships, and more.[41]	Unspecified amount from Comcast

[41] Comcast Digital Equity in Washington (2023). Accessed at: https://washington.comcast.com/digital-equity/

Activity Name	Partners	Description	Funding
Whatcom County Broadband	Port of Bellingham Whatcom County Broadband Pogo Zone	Secured funding to address challenges to accessing high speed internet in the Port of Bellingham and Whatcom County. Extend 30 miles of open access fiber to 1,100 underserved homes and businesses and lease publicly owned infrastructure to ISPs competing to provide affordable, high-quality services	$5 million total, $4 million in federal funded grant, with $1 million coming from Whatcom County
Adams County	Adams County Inland Cellular	The project connects to an existing open access backbone fiber infrastructure owned by NoaNet to serve Lind, Ritzville, and Othello. The project will construct ap-proximately 15 miles of mid-mile infrastructure, between the town of Lind to connect to NoaNet's backbone. The system architecture foundation will be an open access colocation facility centrally homed in each town. The project will upgrade existing building spaces for colocation facilities in Lind and Ritzville. Upgrades will include installation of racks to house provider owned equipment, back-up power, climate control and 24/7 access, including network operations center monitoring of door entry, temperature, and power. Environmental cabinets will be placed for cost savings to serve the Othello project areas. There will be approximately 2,496 Number of last mile connections, or passings, for this project area.	$25.8 million total, $10.3 million in federal funded grant, with $357,000 coming from Adams County ARPA batch.
Clallam County Broadband	Clallam County Astound	Broadband Project to design and construct the build which will serve the premises going through the areas along Hwy 112 including Coville, Ramapo, and the unincorporated town of Joyce in Clallam County. The last mile construction will serve approximately 923 premises. This project will tie into a current project that brings backhaul to Hwy 112. The fiber to the premise design of this project will have internet service providers offering speeds of 1 Gbps to the businesses and residences in the project area.	$17.9 million total, $16.1 million in federal funded grant, with $1.8 million coming from Clallam County
Confederated Tribes of the Colville Reservation Broadband	Confederated Tribes of the Colville Reservation Bigfoot Communications in partnership with NoaNet	This Project is a wireless project that involves adding towers to the reservation and completing a 2.5 Ghz Private LTE broadband delivery system. This project also includes constructing new access roads, commercial power, and buildings. The towers will provide service to the Swawilla Basin, Swahili Basin, Nespelem, and the Twin Lakes residences of Inchelium.	$4.5 million total, $4.1 million in federal funded grant, with $400,000 coming from Colville Reservation.

Activity Name	Partners	Description	Funding
Connecting Lincoln County	Lincoln County LocalTel Communications, Inland Cellular, Ptera and WiFIBER	For the city of Davenport and the town of Wilbur. Fiber-to-the-home aerial and underground construction providing approximately 1,439 passings.	$4.5 million total, $4.1 million in federal funded grant, with $400,000 coming from Colville Reservation.
Nisqually Thurston Co OAN Phase II	Nisqually Indian Tribe	The Phase II Thurston County OAN Buildout will consist of an OAN originating at the town of Rochester in southern Thurston County, and running north along public roadways (Moon Road, Littlerock Road, Mima Gateway Road) to serve the Littlerock and Gate areas, as well as additional areas near the town of Rochester. The proposed Phase II OAN Buildout will feed off of the Nisqually/Rochester OAN that will be constructed in 2022-3. The project aims to bring fiber access to 800 residents and 36 miles of fiber.	$6.8 million in federal funded grant.
King County	King County Broadband Ziply	To Design and construct a Fiber to the Premise network to unserved locations in the Duvall/Snoqualmie area. The project area excludes downtown Duvall; it will connect several unincorporated neighborhoods. The proposed project will enable fiber connectivity to approximately 1,421 addresses.	$13.1 million total, $11.8 million in federal funded grant, with $1.3 million coming from Ziply.
Snohomish County and Ziply - SR 530	Snohomish county Ziply	The project will construct a Fiber to the Premise network along the State Route 530 Corridor. The communities to be connected include Trafton, Cicero, Oso, Rowan, Hazel, Whitehorse and Darrington. The proposed project will enable fiber connectivity to approximately 4,510 addresses.	$25.7 million total, $16.7 million in federal funded grant, with $9 million coming from Ziply.
Spokane Tribe's Broadband Acceleration	Spokane Tribe of Indians NoaNet	The project will construct a Fiber to the Home, emergency services and businesses within the Spokane Reservation boundary, including the areas of Ford, Drum Road, and Wellpinit. The project will connect approximately 600 households, 12 businesses, and 26 anchor institutions in the service area of the project.	$16.5 million total, $14.7 million in federal funded grant, with $1.8 million coming from Spokane Tribe.

Activity Name	Partners	Description	Funding
Washington Independent Telecommunications Association (WITA) Member	WITA Hood Canal Communications Whidbey Telecom	WITA is the lead for the overall projects to construct broadband on the following areas: Hood Canal Telephone will be constructing a fiber to the home solution to bring broadband access to unserved residents located in Mason County on Anthony Rd, Benson Loop, Carman, Eells Hill, Geist Point, Hanks Lake, Little Egypt, Mikkelsen, and Old Farm Rd project locations. Estimated 344 homes in this build out area with an average construction of 200' from the road to home. Whidbey Telephone Company will be constructing a fiber to the home solution to bring broadband access to unserved residents located in Island County on South Central Whidbey (Coupeville and Greenbank locations), Goss Ridge, Pioneer Park Place, and Newman Road project locations. There are approximately 989 homes in this build out area with an average construction of 300'-350' from the road to home.	$16.5 million total, $14.9 million in federal funded grant, with $1.6 million coming from Internet Service Providers.
Port of Whitman County Broadband	Port of Whitman County St. John Telephone Company	The FTTx construction to serve approximately 25 homes in Diamond extends from an existing vault in Diamond where existing Port owned backbone fiber connects to St. John Telephone's network in both Colfax and St. John. In Diamond, a cabinet will be installed, and last mile fiber built to each home. To serve the approximately 118 homes in Steptoe, approximately five miles of underground fiber will be constructed in conduit to connect from the backbone to a CO facility in the community. The mid-mile construction will serve approximately 6 homes along the path. In both communities, fiber infrastructure will be constructed to each customer premise. The all-fiber network achieves Gigabit performance capability and low latency for all of the premises in the project area.	$583,000 total, $438,000 in federal funded grant, with $145,000 coming from the WSBO.

Activity Name	Partners	Description	Funding
Ellensburg Fiber Extension and Fixed Wireless Broadband	City of Ellensburg Central Connect NoaNet	Connect two wells to its existing fiber network. The wells are located approximately 5 miles Northwest of Ellensburg City limits in rural Kittitas County. Both wells are located in census blocks that have no providers reporting fixed broadband services at 25/3 Mbps on FCC Form 477. This project would connect rural homes and farms to fiber broadband along the 5-mile route. There are approximately 30 households in these unserved census block service areas and approximately 708 households in the proposed service area. The households along the fiber run will have the ability to connect at 1 Gbps/1 Gbps and the households connected via wireless will have minimum speeds of 50/50 Mbps	$1.3 million total, $1 million in federal funded grant, with $300,000 coming from St. John Telephone.

The success of government efforts depends on a broad coalition of partnerships to raise awareness of ongoing broadband programs and to keep Washingtonians involved. The WSBO has developed an extensive list of engaged partners with whom they work to understand community needs, received feedback from residents regarding broadband and digital equity needs, and have a direct line of communication to those impacted the most by limited broadband. Considering that broadband expansion will impact the lives of all Washingtonians, the list of partnerships outlined in **Table 8** is by no means exhaustive.

Table 8: WSBO's Existing and Planned Partnerships

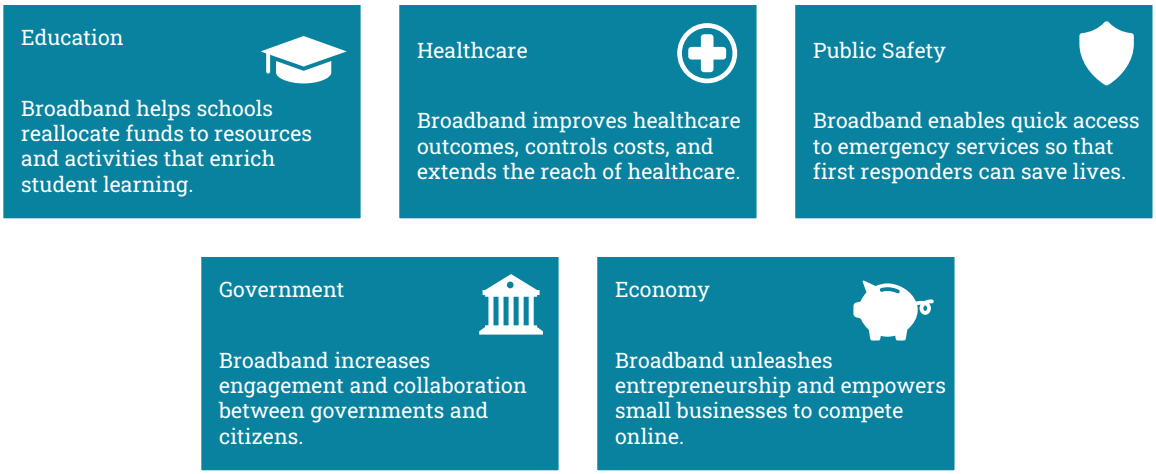
Partner	Description of Current or Planned Role in Broadband Deployment and Adoption
Department of Children, Youth, and Families	Planning to consult on needs for underserved populations (as defined by HB 1723 state digital equity legislation)
Department of Corrections	Planning to consult on needs for underserved populations (as defined by HB 1723 state digital equity legislation)
Department of Health	Serving on the steering group for the BEAD Five-Year Action Plan and Digital Equity plan
Department of Social and Health Services	Serving on the steering group for the BEAD Five-Year Action Plan and Digital Equity plan
Department of Transportation	Serving on the steering group for the BEAD Five-Year Action Plan and Digital Equity plan; trusted partner for broadband deployment coordination and Dig-Once Policy roll-out
Digital Equity Forum	Created through state legislation to help advance digital equity throughout the state –members include tribal governments, state legislators, state agencies, underserved and unserved community members and organizations serving those communities

Partner	Description of Current or Planned Role in Broadband Deployment and Adoption
Digital Equity Learning Network of Seattle & King County	Consulting on digital equity needs and leading practices
Digital Navigators	Helping Washingtonians navigate the internet through activities such as, signing up for the Affordable Connectivity Program (federal low-income internet assistance), connecting with government and community services, and acquiring digital literacy skills.
Equity in Education Coalition	Supporting community engagement, serving as a member of the Digital Equity Forum, serving on the steering group for the BEAD Five-Year Action plan and Digital Equity plan
Goodwill Connect	Helping Washingtonians by providing job seekers with access to Goodwill's free job training programs and career pathway services through an online learning portal
Health Care Authority	Supporting with understanding telehealth needs and potentially programs
National Digital Inclusion Alliance	Consulted in subject matter expert and advisory role
Office of Equity	Co-leading the Digital Equity Forum and serving on the steering group for the BEAD Five-Year Action plan and Digital Equity plan
Office of Superintendent of Public Instruction	Provides grants focused on digital equity and inclusion to educational institutions and supporting with understanding education needs and potentially programs
Poverty Reduction Work Group	Planning to consult on needs for underserved populations (as defined by HB 1723 state digital equity legislation)
State Board of Community and Technical Colleges	Supporting with engaging with educators on understanding workforce and education needs
Utilities and Transportation Commission	Serving on the steering group for the BEAD Five-Year Action plan and Digital Equity plan
Washington State Association of Counties	Consulting on broadband deployment and digital equity planning and coordinating state and county activities
Washington State Library | SOS	Conducting a statewide digital skills assessment, supporting with outreach for community engagement
Washington Statewide Reentry Council	Planning to consult on needs for underserved populations (as defined by HB 1723 state digital equity legislation)
Washington State University Extension	Supporting the coordination of digital equity and broadband deployment planning
Washington Workforce Association	Supporting with understanding workforce and education needs and potentially programs

3.2 Asset Inventory

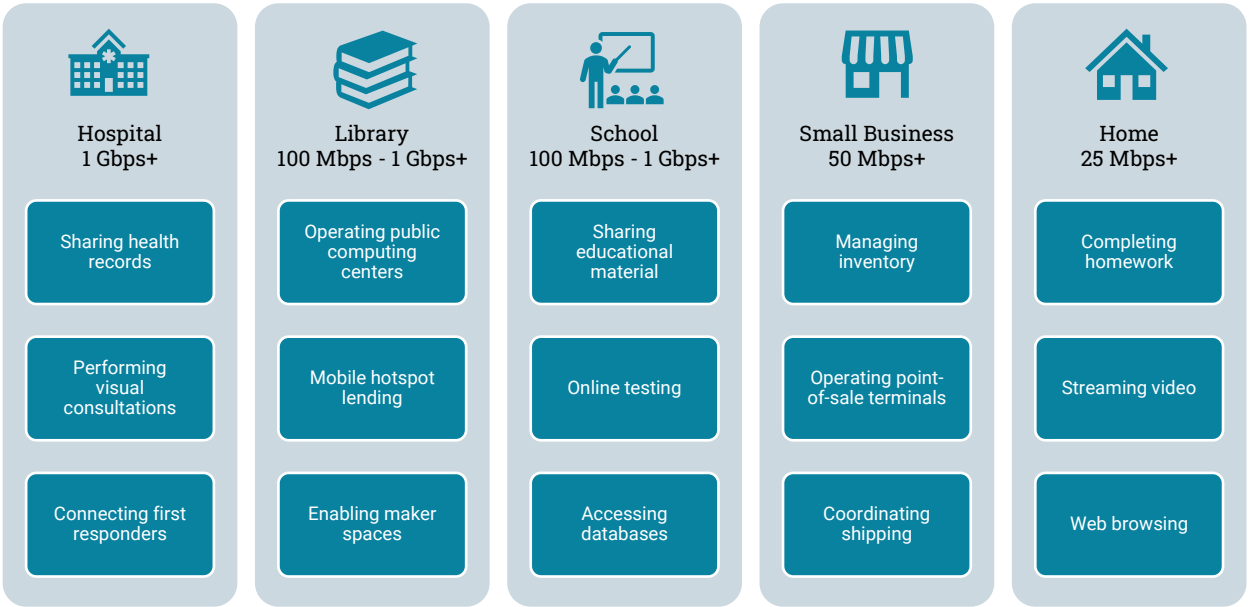
Broadband has become an essential service that is intertwined with nearly aspect of life today, as **Figure 1** describes.

Figure 1: Broadband's Impact on Everyday Life[42]



However, broadband's benefits may not be fully realized depending on the broadband speed in a given area. Specifically, different activities require different download speeds in order to take full advantage of broadband's potential, as **Figure 2** demonstrates.

Figure 2: Broadband Download Speed Requirements for Various Activities[43]



[42] NTIA (2023), "Why does broadband matter?". Accessed at: BroadbandUSA: Why Does Broadband Matter? (doc.gov)
[43] NTIA (2023), "What speed do you need?". Accessed at: BroadbandUSA: What Speed Do you Need? (doc.gov)

BROADBAND EQUITY, ACCESS, AND DEPLOYMENT (BEAD) PROGRAM OBJECTIVES

Given today's broadband speed requirements, and in anticipation of greater needs in the future, BEAD funding, as outlined in the Notice of Funding Opportunity (NOFO), prioritizes funding for projects that focus on deploying broadband services to unserved and underserved locations. Once the state addresses broadband deployment for unserved and underserved locations, it can use funding to help provide broadband speeds of 1 gigabit per second (Gpbs) to all community anchor institutions (CAIs).[44] The state could use any remaining funds for other access, adoption, and digital equity uses.

What is an unserved location?

A business or residential location that either has no access to broadband or internet with speeds less than 25 megabits per second (Mbps) downstream and 3 Mbps upstream.

Source: BEAD NOFO

BROADBAND IN WASHINGTON

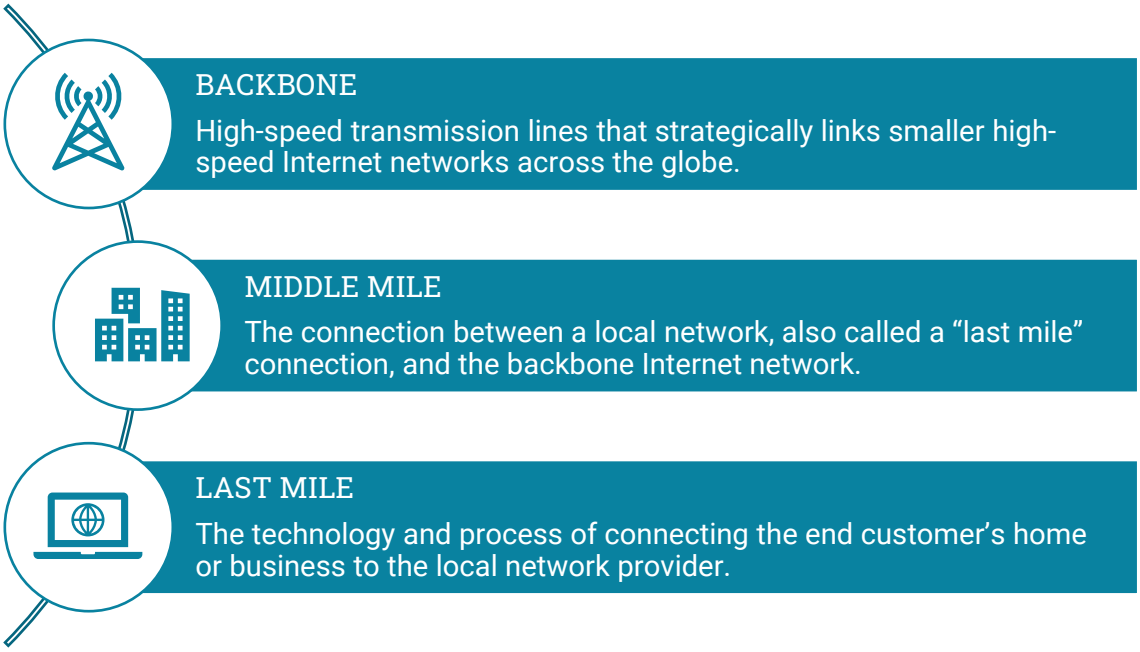
The delivery of high-speed download and upload services to all residences, businesses, and communities across the state of Washington requires some level of infrastructure. This section will document the hard assets that underpin existing broadband infrastructure availability, while also describing ongoing deployment projects and workforce development within Washington state.

Hard assets refer to the physical broadband structures, such as towers, buildings, or utility poles that make up broadband infrastructure within the state. This infrastructure can be broken into three distinct classifications: backbone, middle mile, and last mile, as **Figure 3** illustrates. Broadband backbone infrastructure describes the high-speed transmission lines that strategically link high-speed internet networks around the world.[45] End-users are eventually able to connect to the information distributed along the broadband backbone through middle mile networks that serve regional or local areas, transmitting broadband data between data centers, or interconnection points, which an internet service provider (ISP) can then use to connect directly to a home or business through what is known as the last mile.[46, 47]

BEAD funding is primarily intended for last mile projects but can be used for some middle mile projects in or through any area that needs to reach interconnection points or when middle mile deployment is otherwise required to provide service to an unserved location, underserved location, or an eligible CAI.[48]

[44] NTIA considers the following entities as community anchor institutions: school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community support organization that facilitates greater use of broadband service by vulnerable populations. Additionally, NTIA allows the state to propose additional types of institutions that should qualify as community anchor institutions. The state of Washington is currently finalizing a list of institutions to submit to the NTIA as part of its Initial Proposal.
[45] NTIA (2016), Connecting America's Communities. Accessed at: BroadbandUSA: Connecting America's Communities (doc.gov)
[46] NTIA (2022), Introduction to Broadband and High-Speed Internet. Accessed at: Introduction to Broadband and High-Speed Internet (doc.gov)
[47] In a rural area, the middle mile would likely connect the town's network to a larger metropolitan area where it interconnects with major carriers.
[48] NTIA (2022), BEAD NOFO. Accessed at: BEAD NOFO.pdf (doc.gov)

***Figure 3: Types of Broadband Networks*[49]**



The actual delivery of broadband services can rely on a variety of technology. Yet, according to the National Telecommunications and Information Administration (NTIA)'s Notice of Funding Opportunity, reliable broadband service is that which is provided to a location through one of four fixed broadband delivery systems.[50] These four fixed broadband delivery systems are detailed below:

Fiber: A system that uses glass, or plastic, to carry light to transmit information. Typically, each side of the fiber is attached to a laser that sends the light signals. When the connection reaches capacity, the lasers may be upgraded to send much more information along the same strand of fiber.

Cable: A form of broadband Internet access that uses the same infrastructure as a cable television. Also known as coaxial cable deployment.

Digital Subscriber Line (DSL): A family of technologies used to transmit digital data over telephone lines.[51]

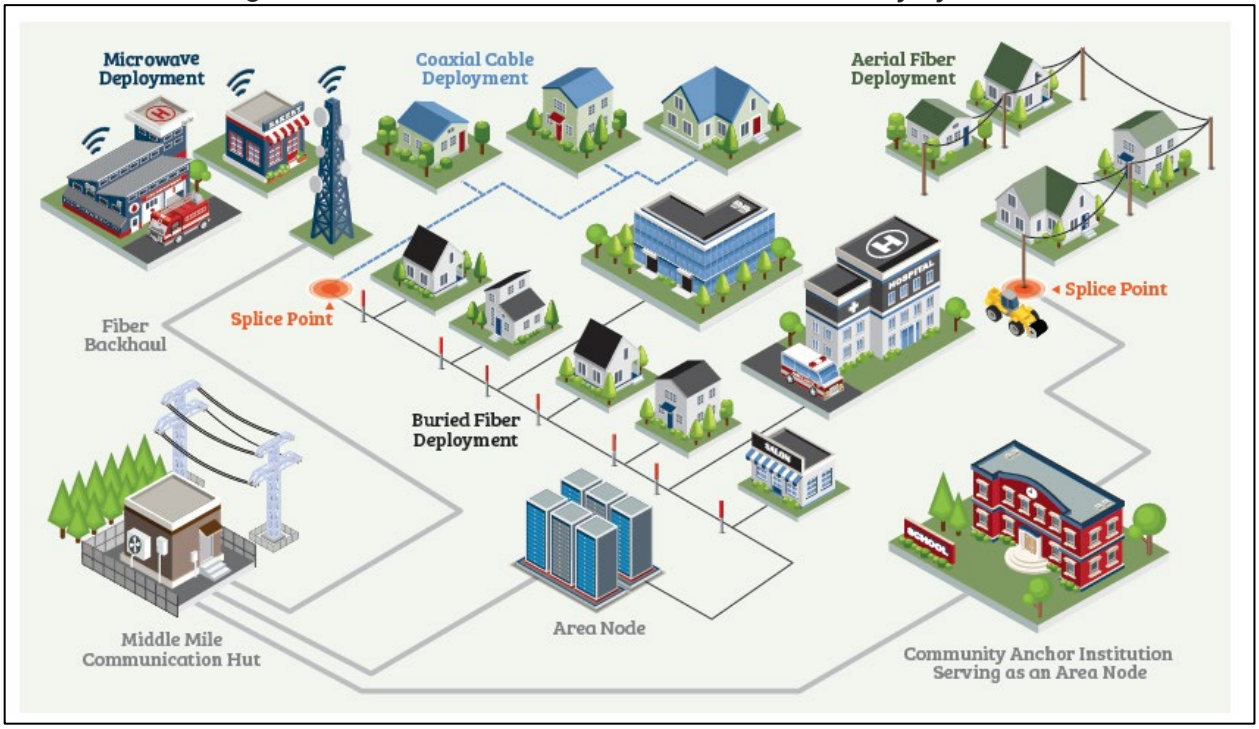
Fixed Wireless: A connectivity model that uses stationary wireless technology to bridge the "last mile" between the internet backbone and the subscriber. Also known as microwave deployment.

[49] NTIA (2016), Broadband Glossary. Accessed at: BroadbandUSA: Connecting America's Communities (doc.gov)
[50] NTIA (2022), BEAD NOFO. Accessed at: BEAD NOFO.pdf (doc.gov)
[51] In its Notice of Funding Opportunity, the NTIA acknowledges that in some instances DSL fails to provide consistent access to advertised speeds. Therefore, locations where DSL does not have the speeds necessary to be considered served – 100 Mbps for downloads and 20 Mbps for uploads – could challenge the corresponding location's service status during the challenge process that the state of Washington will outline in its Initial Proposal.

According to the Notice of Funding Opportunity, BEAD funding should prioritize projects that use end-to-end fiber to connect end-users to middle mile connection points. However, the BEAD program does allow the state to select subgrantee projects that use other reliable delivery systems under certain conditions, such as instances where the cost to deploy fiber exceeds the extremely high cost per location threshold, which will be determined by the WSBO in the forthcoming Initial Proposal.[52] The state will provide additional information related to its subgrantee selection process in its Initial Proposal.

Due to the differences in the types of technology, each delivery system relies on a different set of broadband infrastructure and hard assets. **Figure 4** below illustrates how governments and organizations deploy these delivery systems to provide broadband to various end users.

Figure 4: Visualization of Various Broadband Delivery Systems[53]



In addition to these fixed broadband mediums, alternative technologies exist to provide broadband services, particularly in areas that are not conducive to construction due to their remoteness or terrain. One example of these alternative broadband delivery systems is satellite broadband. However, the NTIA does not consider broadband provided exclusively by satellite as reliable broadband service, and therefore, classifies any corresponding locations as unserved. Moreover, NTIA only allows states to use BEAD funding for projects involving satellite broadband if the cost of deploying any of the reliable broadband delivery options, described above, exceeds the state's extremely high cost per location definition.[54]

[52] NTIA (2022), BEAD NOFO. Accessed at: BEAD NOFO.pdf (doc.gov)
[53] NTIA (May 2017), "Costs at-a-Glance: Fiber and Wireless Networks". Accessed at: Costs at-a-Glance Networks
[54] The WSBO is in the process of defining 'Extremely High Cost Per Location' according to the information outlined in this five-year action plan and intends to include the definition in its Initial Proposal.

Similarly, a significant portion of the population, ~15% according to Pew research, may rely primarily or solely on mobile wireless technologies to access broadband.[55] Given that mobile wireless broadband delivery is not considered in NTIA's definition of reliable broadband service, this Plan only briefly discuss the use of LTE wireless in **Section 3.2.4**.

OVERVIEW OF ASSET INVENTORY

The state of Washington has a variety of hard and soft assets that contribute to broadband coverage, expansion, and use in the state, and can be leveraged to close the digital divide. Building upon preexisting infrastructure, the state will be able to leverage existing state and local assets to extend broadband access to underserved and unserved parts of the state. In accordance with the NTIA's definition, hard assets include towers, buildings, utility poles, whereas soft assets—or efforts – include programs, activities, strategies, skills, technical assistance.

The following sections outline the inventory of assets according to the themes of deployment, access, adoption, affordability, and digital equity. Although some assets may fall in multiple categories, they will only be represented once in accordance with suggested considerations from the NTIA.

The remainder of this section details broadband and digital inclusion assets in Washington state:

- **3.2.1 Asset Inventory: Broadband Deployment** – Identifies the physical assets and underlying workforce supporting existing broadband deployment throughout the state.
- **3.2.2 Asset Inventory: Broadband Adoption** – Describes existing programs intended to improve broadband subscription rates and increase the availability of devices needed to connect to broadband networks.
- **3.2.3 Asset Inventory: Broadband Affordability** – Discusses affordability as a barrier to broadband adoption and examples of existing discount and subsidy programs.
- **3.2.4 Asset Inventory: Broadband Access** – Identifies programs designated to provide residents with the tools, services, and equipment necessary to use broadband networks.
- **3.2.5 Asset Inventory: Digital Equity** – Describes other organizations, programs, and partnerships currently in place to advance digital equity.

[55] Pew Research (2021), Mobile Technology and Home Broadband 2021. Accessed at: Mobile Technology and Home Broadband 2021 | Pew Research Center

3.2.1 Asset Inventory: Broadband Deployment[56]

EXISTING BROADBAND HARD ASSETS

> **What is open access?**
>
> An arrangement in which a network owner offers nondiscriminatory access to and use of its network on a wholesale basis.
>
> **Source**: BEAD NOFO

Knowing the location of current broadband infrastructure will help the state, and other public and private entities, better plan for deployment expansion by identifying assets these entities could use. Leveraging existing infrastructure can help reduce capital expenditure costs, thereby reducing the overall deployment costs, especially when compared to networks built entirely from scratch.[57,58] As **Table 9** shows, there are 44 public or open access networks located throughout the state – including networks currently under construction – with network ownership consisting of cities, counties, and tribal nations. Additionally, 15 of the state's 28 public utility districts (PUDs) and nine of the state's 75 port districts own public networks and have provided some level of broadband service since 2000, when the Washington State Legislature changed state law to allow PUDs and port districts to offer wholesale telecommunications. [59,60]

Table 9: List of Public Networks by Owner and Type

(Networks shaded grey are members of the Northwest Open Access Network (NoaNet) which is discussed later in this section.)

Network Owner	Network Type	Description
City of Anacortes	Fiber Optic- Lit	Municipal ISP Retail
City of Ellensburg	Fiber Optic- Lit, Dark and Wireless	Open Access Wholesale
City of Mount Vernon	Fiber Optic- Dark	Open Access Wholesale
Adams County	Fiber Optic- Dark	Awarded- to be built*
Kittitas County	Fiber Optic- Dark	Awarded- to be built*
Lincoln County	Fiber Optic- Dark	Open Access Wholesale
Yakima County	Fiber Optic- Lit	Awarded- to be built
Tri-County Economic Development District	Fiber Optic- Lit	Awarded- to be built
NoaNet	Fiber Optic- Lit	Open Access Wholesale
Rock Island	Fiber Optic	Municipal ISP Retail
Port of Bellingham	Fiber Optic- Dark	Open Access- IRU with provider
Port of Clarkston	Fiber Optic- Dark	Open Access Wholesale
Port of Columbia	Fiber Optic- Dark	Open Access Wholesale
Port of Garfield	Fiber Optic- Dark	Open Access Wholesale

[56] Although this section discusses the inventory of broadband deployment assets from a state perspective, we have included local maps for counties and tribes that provided Community Action Plans in **Appendix 7.6**.
[57] NTIA (2022), Economics of Broadband Networks. Accessed at: Economics of Broadband Networks PDF.pdf (doc.gov)
[58] USTelecom (February 2, 2022), State Broadband Best Practices. Accessed at: State Broadband Best Practices – USTelecom
[59] Washington State Legislature (2023), RCW 54.16.330. Accessed at: RCW 54.16.330: Telecommunications facilities—Purposes—Limitations—Provision of telecommunications services—Eminent domain (as amended by 2021 c 293). (wa.gov)
[60] Washington State Legislature (2023), RCW 53.08.370. Accessed at: RCW 53.08.370: Telecommunications facilities—Construct, purchase, acquire, etc.—Purposes—Limitations—Eminent domain (as amended by 2021 c 293). (wa.gov)

Network Owner	Network Type	Description
Port of Ridgefield	Fiber Optic- Dark	Open Access Wholesale
Port of Whitman	Fiber Optic- Dark	Open Access Wholesale
Port of Coupeville	Fiber Optic- Dark	Awarded- to be built
Port of Walla Walla	Fiber Optic- Dark	Awarded- to be built*
Port of Woodland	Fiber Optic- Dark	Awarded- to be built*
Skagit Net	Fiber Optic- Dark	Open Access Wholesale
BroadLinc	Wireless and Fiber Optic- Lit	Open Access Wholesale
Benton PUD #1	Fiber Optic- Lit	Open Access Wholesale
Chelan PUD #1	Fiber Optic- Lit	Open Access Wholesale
Clallam PUD #1	Fiber Optic- Lit	Open Access Wholesale
Douglas PUD #1	Fiber Optic- Lit	Open Access Wholesale
Franklin PUD #1	Fiber Optic- Lit	Open Access Wholesale
Grant PUD #1	Fiber Optic- Lit	Open Access Wholesale
Grays Harbor PUD #1	Fiber Optic- Lit and Dark	Open Access Wholesale
Jefferson PUD #1	Fiber Optic- Lit	Open Access Wholesale and Retail
Kitsap PUD #1	Fiber Optic- Lit	Open Access Wholesale
Lewis County PUD #1	Fiber Optic- Lit and Dark	Open Access Wholesale
Mason PUD #3	Fiber Optic- Lit	Open Access Wholesale
Okanogan PUD #1	Fiber Optic- Lit	Open Access Wholesale
Pacific PUD #2	Fiber Optic- Lit	Open Access Wholesale
Pend Oreille PUD #1	Fiber Optic- Lit	Open Access Wholesale
Whatcom PUD	Fiber Optic- Dark	Awarded- to be built*
Town of Washtucna	Fiber Optic- Dark	Awarded- to be built*
Colville Confederated Tribes	Fiber Optic- Lit	Open Access Wholesale and Retail
Kalispel Tribe	Fiber Optic	Tribal Retail
Lummi Nation	Fiber Optic	Awarded- to be built*
Nisqually Tribe	Fiber Optic- Lit	Tribal Retail
Spokane Tribe of Indians	Fiber Optic- Lit	Open Access Wholesale and Retail
Tulalip Tribe	Fiber Optic	Tribal Retail
Yakama Power	Fiber Optic- Lit	Tribal Retail

Source: Table adapted from information NoaNet provided.

*Note: After an initial three-year period permitting exclusive rights following construction completion, all projects funded by the WSBO through ARPA funds are required to become open access networks.

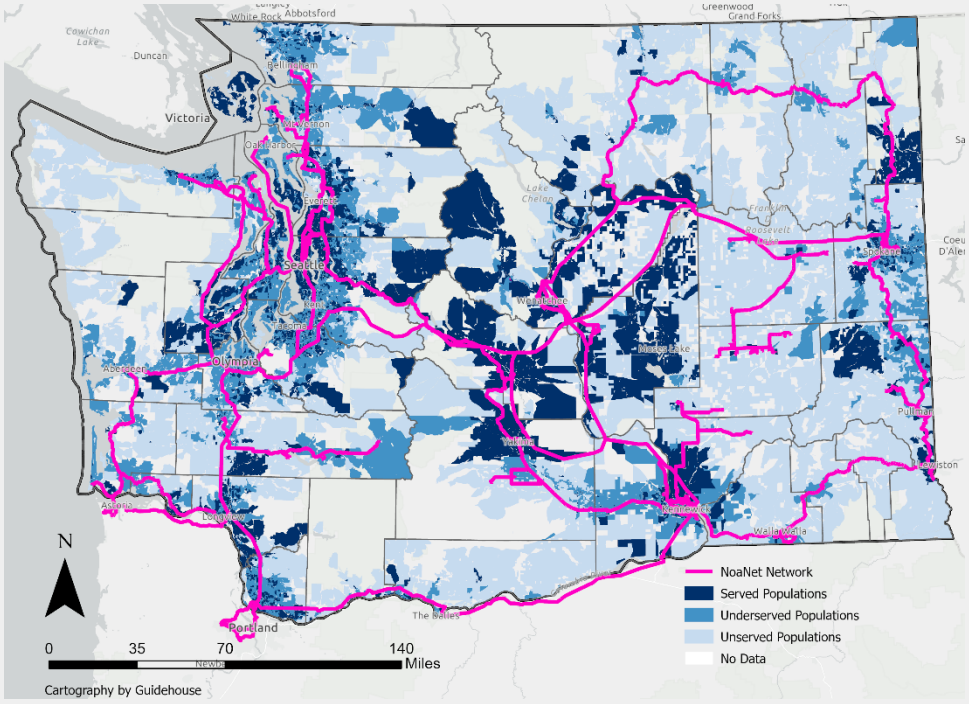
For PUDs in particular, this change to state law resulted in PUDs investing more than $1 billion in telecommunications infrastructure, with investments primarily going towards the creation of an extensive middle mile network.[61] As a wholesale provider, PUDs would be responsible for constructing, operating, and maintaining the broadband network, but would not provide internet services directly to the end user. Instead, a PUD would lease its "open access" network out to ISPs to provide services on a non-discriminatory basis without needing to build redundant infrastructure.[62] **Map 2** illustrates the location of PUDs that provide wholesale services. In 2021, changes to state law allowed PUDs, and other public entities, such as port districts, to provide internet services to end-users in unserved areas.[63] However, according to conversations with the Washington Public Utility District, only Jefferson PUD provides this service.

Map 2: PUDs Providing Telecommunications Services

Source: Washington Public Utility District Association website, Telecommunications (wpuda.org)

[61] Public Works Board (October 4, 2019), Broadband in Washington State. Accessed at: KPUD_Broadband_101_100319.pdf | Powered by Box
[62] NoaNet (February 24, 2021), What is an "Open Access" Network? Accessed at: What is an "Open Access" Network? - NoaNet
[63] Washington State Department of Commerce (n.d.), Public Retail Broadband. Accessed at: Public Retail Broadband - Washington State Department of Commerce

To help manage their expanding middle mile network, PUDs formed the Northwest Open Access Network (NoaNet) to oversee the operation and maintenance of members' networks. As **Map 3** displays, NoaNet currently operates a fiber network totaling more than 3,300 fiber miles throughout Washington state.[64] This fiber network connects the local PUD anchor institutions and other independent communications networks to each other and to the major carrier connection points in Seattle and Spokane.

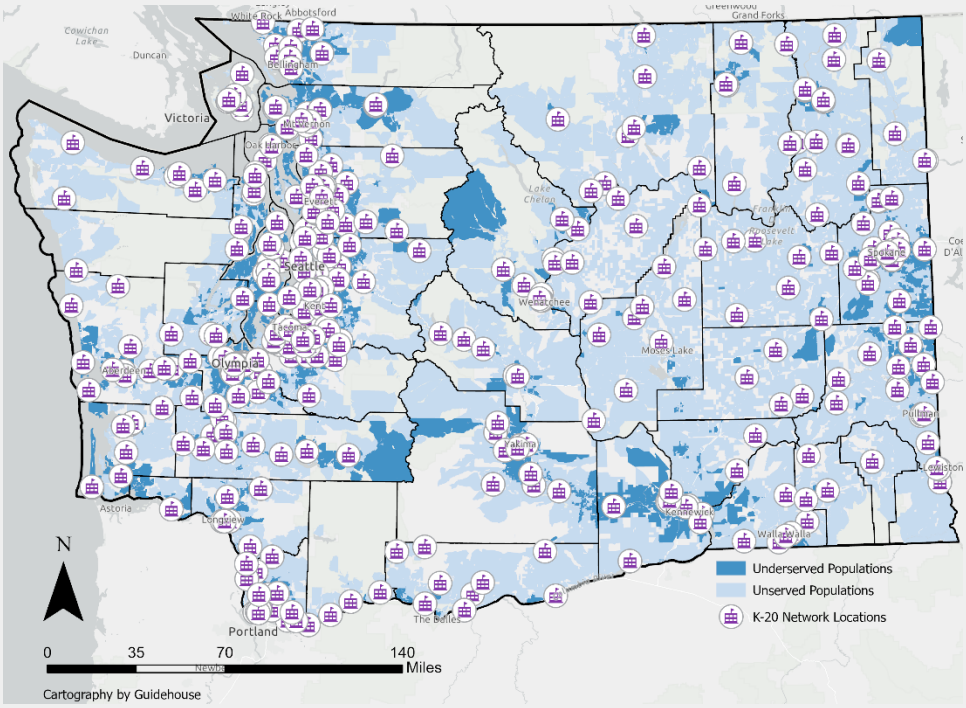


Map 3: NoaNet Network

Source: Analysis of NoaNet's 2023 data and FCC's 2023 service level data.

[64] NoaNet (n.d.), How the Northwest Connects. Accessed at: Our Story | High-Speed Broadband Technology Products | WA State Broadband Solutions (noanet.net)

In addition to open access infrastructure, or infrastructure owned by PUDs, Washington state is also responsible for overseeing a broadband network to education institutions, as **Map 4** below displays. State law authorized the Office of Financial Management to oversee the implementation and operation of the K20 network, with day-to-day operations run through a non-profit cooperative.[65] Eligible educational institutions include public school districts, public libraries, community and technical colleges, and universities.[66] However, these educational institutions are not required to participate in the K20 network, as it is a voluntary service.[67] As such, although the K20 network can connect to every school district office within the state, individual school districts retain the authority to decide if they will join the K20 network and, if so, whether they will expand network access to its individual schools.[68] Currently, 390 community anchor institutions participate in the K20 network, including 280 K-12 school district offices, 17 libraries, 50 community and technical colleges, and 62 university campuses.



Map 4: School Districts, Libraries, Colleges, and Universities Connected Through Washington's K20 Network

Source: Analysis of K20's 2023 location data and FCC's 2023 service level data.

Funding for the K20 network comes primarily from the state, through the state's Education Technology Revolving Fund and general appropriations. Additionally, participating school districts must pay a flat fee calculated by the Washington Office of Superintendent of Public Instruction (OSPI).[69] The K20 network administrator also applies for federal funding on behalf of

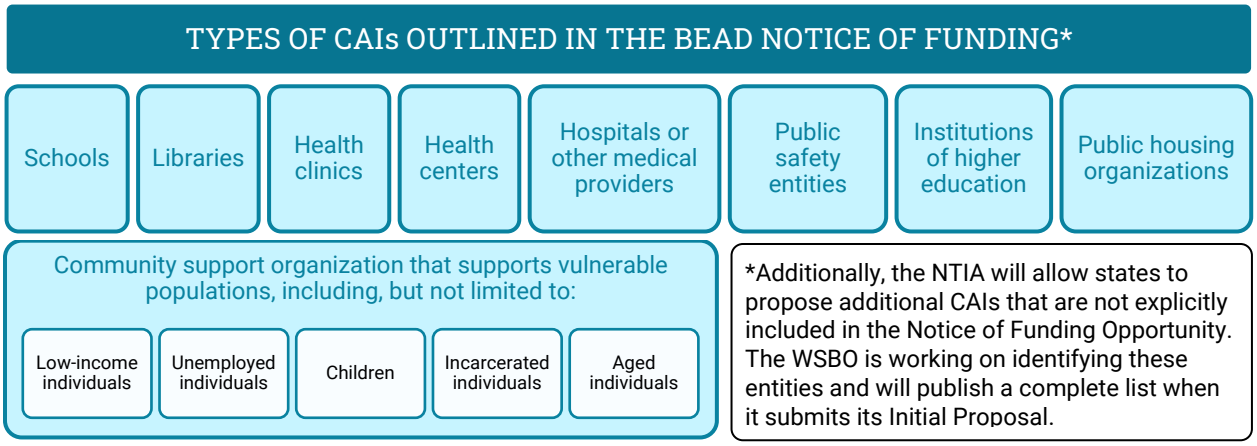
[65] Washington State Legislature (n.d.), RCW 43.41.391. Accessed at: RCW 43.41.391
Washington State Legislature (n.d.), RCW 43.41.392. Accessed at: RCW 43.41.392
[66] Washington State Office of Financial Management (April 3, 2023), Efficient, Effective and Accountable Government. Accessed at: Efficient, Effective and Accountable Government | Office of Financial Management (wa.gov)
[67] Data.WA (2019), Broadband in Washington. Accessed at: Broadband in Washington | Data.WA | State of Washington
[68] Washington State Legislature (n.d.), RCW 43.41.394. Accessed at: RCW 43.41.394: Oversight of technical aspects of K-20 network. (wa.gov)
[69] Washington Office of Superintendent of Public Instruction (n.d.), K-20 Network in Washington State. Accessed at: K-20 Network in Washington State | OSPI (www.k12.wa.us)

participating schools and libraries through the Federal Communications Commission (FCC) e-rate program – a program that provides financial assistance to primary and second schools and libraries depending on the level of poverty and urban or rural designation at the school district level.[70] The K20 administrator will deposit any subsequent funding back into the state's education technology revolving fund.[71] The use of the FCC's e-rate funding is limited, however, to only cover the cost of internet services on-site; meaning that schools would not be able to use funding to provide wireless access to students at home who may not otherwise have broadband.[72,73] During the COVID-19 pandemic, the OSPI used federal funding to administer a K-12 Internet Access Program and an Emergency Connectivity Fund, both of which included funding for school districts that provided broadband access to students and teachers.[74,75] However, both of these programs have since expired.

COMMUNITY ANCHOR INSTITUTION (CAI)

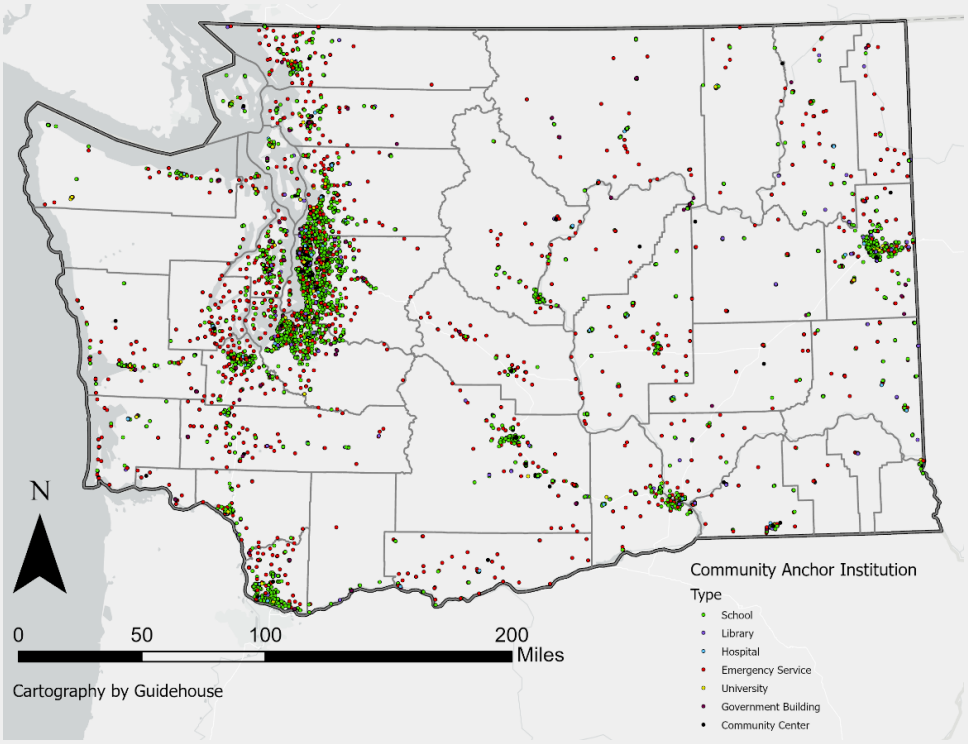
As the K-20 network suggests, CAIs are the backbones of their communities, providing essential services, as **Figure 5** outlines. Recognizing their importance, BEAD funding prioritizes projects to provide the infrastructure required to ensure all CAIs have at least 1 GB of broadband once the state has addressed its unserved and underserved populations.

Figure 5: Types of CAIs



[70] Universal Service Administrative Co. (February 2019), Schools and Libraries (E-rate) Program. Accessed at: E-rate Program Overview (usac.org)
[71] Washington State Legislature (n.d.), RCW 43.41.399. Accessed at: RCW 43.41.399: Education technology revolving fund. (wa.gov)
[72] Federal Communications Commission (December 14, 2022), Modernizing the E-Rate Program for Schools and Libraries. Accessed at: Orders TOC by Paragraph.dot (fcc.gov)
[73] U.S. Government Accountability Office (July 29, 2019), Wireless Internet: FCC Should Assess Making Off-School-Premises Access Eligible for Additional Federal Support. Accessed at: Wireless Internet: FCC Should Assess Making Off-School-Premises Access Eligible for Additional Federal Support | U.S. GAO
[74] NonStopLOCAL Tri-Cities and Yakima (October 1, 2020) K-12 Internet Access Program Allows more Students to Learn from Home. Accessed at: K–12 Internet Access Program Allows More Students to Learn from Home | Back To School | nbcrightnow.com
[75] Washington Office of Superintendent of Public Instruction (n.d.), Educational Technology Federal Programs. Accessed at: Educational Technology Federal Programs | OSPI (www.k12.wa.us)

As **Map 5** shows, the vast network of CAIs makes these locations potentially useful as broadband connection points. This would allow local entities to tap into a CAI's existing available broadband to expand availability to nearby unserved or underserved areas, through installing fiber from the CAI to identified locations or installing fixed wireless technology. This Plan discusses examples of schools and libraries currently providing wireless broadband services in **Section 3.2.4**.



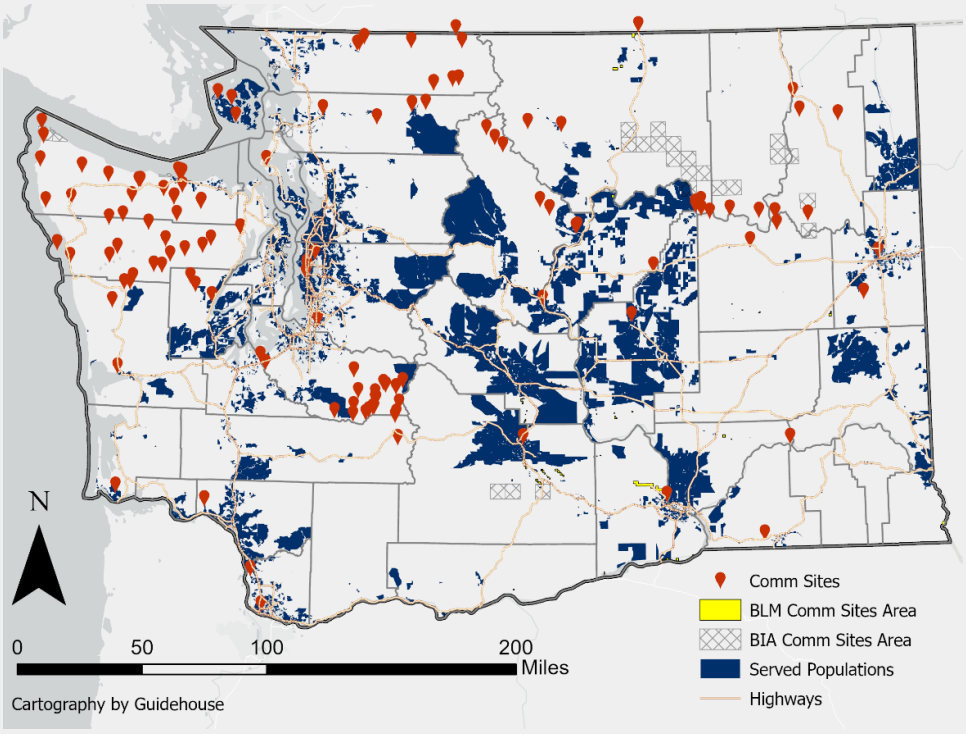
Map 5: Community Anchor Institutions Throughout the State

Source: Analysis of Washington State data as of 2015.

OTHER HARD ASSETS

Ultimately, for areas without broadband access, additional infrastructure will need to be built out. In these instances, it will be easier to place new broadband infrastructure in areas where existing infrastructure and assets exist, even if not currently being utilized for broadband. Determining where these hard assets are in relation to unserved and underserved areas has the potential to help jumpstart deployment, but these assets will continue to need to be catalogued and assessed for viability to use for broadband as project areas are selected.

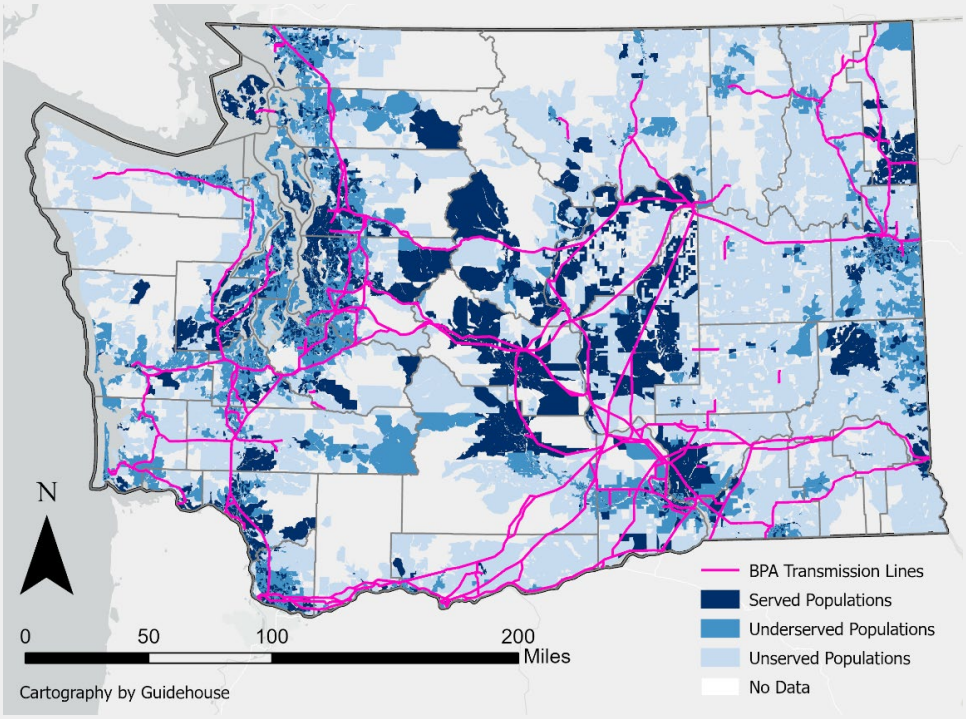
Given the vast amount of publicly owned land, both federal and state, throughout Washington state, and the remoteness of some of these areas, there are likely to be numerous unserved broadband locations adjacent to wilderness areas. These are areas where infrastructure already exists, and they could prove vital for additional broadband deployment. Currently, federal agencies oversee communication structures – fiber lines, telephone lines, radio towers – on federal land, including the Bureau of Indian Affairs, the Bureau of Land Management, the Bureau of Reclamation, Fish and Wildlife Services, General Services Administration, and the National Park Service, as **Map 6** shows. The location of these structures could potentially make them ideal to use for additional broadband expansion. Expansion in these areas either adjacent to or on federal land is beneficial from the perspective of emergency response during wildfires to ensure that public safety workers have sufficient connectivity.



Map 6: Communications Structures on Federal and State Land

Source: Analysis of Bureau of Land Management and Department of the Interior data as of 2023.

Existing infrastructure is also present throughout the state as a part of the Bonneville Power Administration, a federal agency responsible for selling and distributing electricity generated from 31 dams throughout the Pacific Northwest.[76] As **Map 7** shows, the agency's transmission lines transverse the state, including areas without broadband service. Over the years, several large ISPs have entered into agreements with the Bonneville Power Administration to install fiber cables and other communication along its right of way corridors.[77] This suggests that it could be possible to build out additional broadband infrastructure along any areas that remain underutilized for broadband deployment.

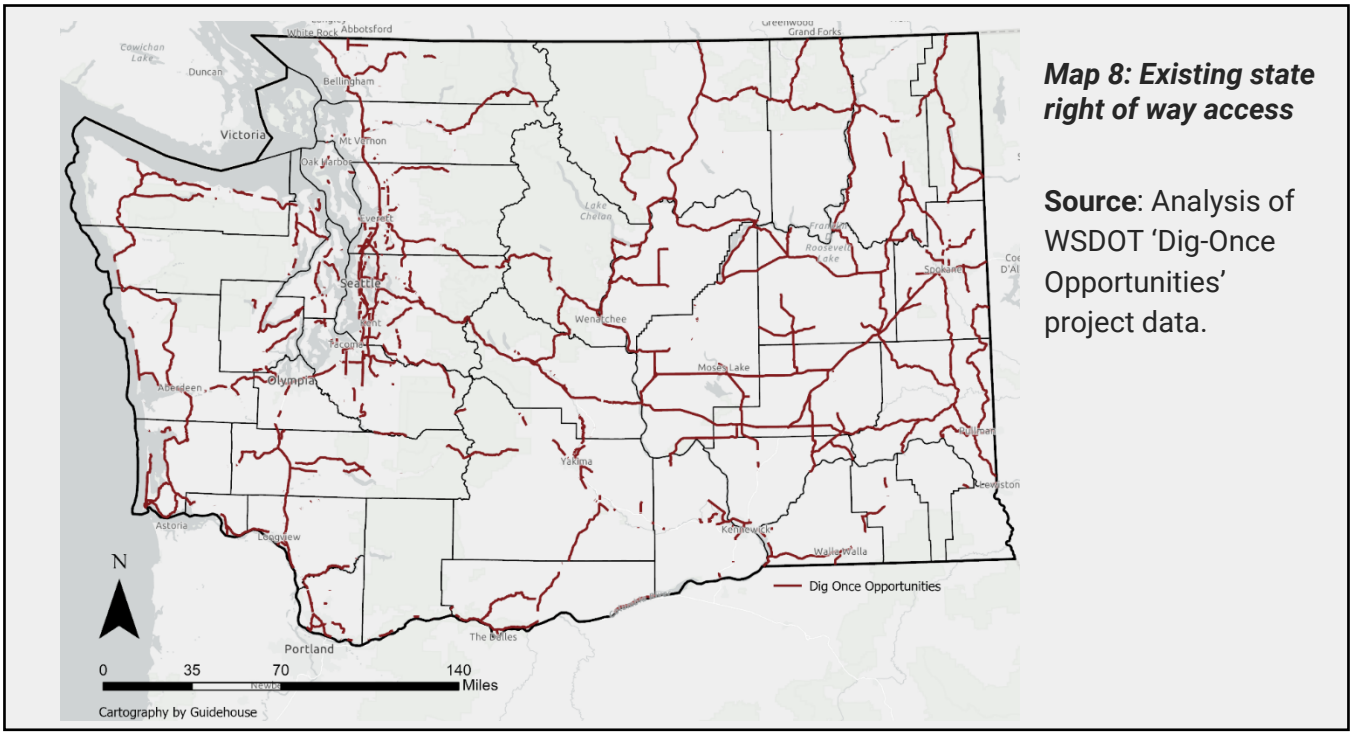


Map 7: Bonneville Power Administration Electric Transmission Lines

Source: Analysis of Bonneville Power Administration data as of 2022.

[76] Bonneville Power Administration (n.d.), About. Accessed at: https://www.bpa.gov/about
[77] Bonneville Power Administration (April 2020), Categorial Exclusion Determination. Accessed at: 20200415---CX---Longview-Washington-Way-Fiber-Installation.pdf (bpa.gov);
Bonneville Power Administration (June 2018), Categorical Exclusion Determination. Accessed at: Verizon Fiber Optic Upgrade CX (bpa.gov);
Bonneville Power Administration (January 2018), Categorial Exclusion Determination. Accessed at: BPA / Doe Memo Template

Broadband expansion can also be achieved by utilizing existing state right of way, as **Map 8** displays. As we previously discussed in **Section 3.1.1**, state law now requires Washington State Department of Transportation (WSDOT) to establish and implement a 'Dig-Once' policy that encourages greater coordination between WSDOT and the WSBO, by requiring WSDOT to proactively notify broadband facility owners with information about construction projects. Therefore, knowledge of existing right of way access is important for identifying potential project areas that could benefit from this policy.[78] In order to provide WSDOT with information regarding broadband expansion funded by the WSBO, PWB, or CERB, WSDOT has been part of review committees that judge broadband grant applications administered by the state's three funding agencies.



Map 8: Existing state right of way access

Source: Analysis of WSDOT 'Dig-Once Opportunities' project data.

[78] Current state law currently only directs WSDOT to adopt a policy that requires it to proactively provide broadband owners of any planned state highway projects. However, if no owners are ready or able to install broadband conduit at the time of WSDOT's construction project, then WSDOT has the option to decide if it wants to hire its own contractors to lay broadband conduit. As a result, it is possible that the WSDOT could decide to not lay any fiber conduit along certain ROWs, because of a lack of broadband project readiness, and consequently, due to pavement cut moratoriums, these ROW would go unused. As a result, the WSBO will work with the Legislature to require WSDOT to lay conduit in those instances where it is planning highway construction and no broadband owners are available or able to install conduit at that time.

PROJECT APPROVAL PROCESS

Broadband deployment projects can require multiple approvals and permits from various government agencies, and, at times, even private entities, with the complexity influenced by the broadband deployment location and the type of deployment infrastructure. In general, a broadband project must first submit requests to various federal or state governments to use any public rights-of-way (ROW), obtain approval from tribal nations to access tribal lands, or coordinate with private entities if it requires access private land – such as using railway ROW.[79,80] This step of the process may also include obtaining a franchise agreement with utilities or local governments to use any existing broadband infrastructure.[81,82] Aerial deployment projects using utility poles or wireless transmission projects using public infrastructure would require an additional step for negotiations with utility providers or the WSDOT, respectively.[83,84]

To comply with regulations in the National Environmental Policy Act, all projects must conduct an environmental analysis. In some cases, additional environmental permits may be required to ensure compliance with environmental protection law. [85] For example, the U.S. Fish and Wildlife Services would need to give approval for projects involving river crossings and the Washington State Department of Natural Resources would need to approve construction through state forest land. [86]

Overall, the state has made efforts to make the project approval process easier to navigate, focusing on streamlining the permitting process more broadly. For example, PWB provides technical assistance through the Infrastructure Assistance Coordinating Council to help all infrastructure projects undertaken by public jurisdictions, tribal nation, or non-profit community water systems to help with the planning process.[87,88] Other resources include WSDOT's Community Planning Portal which provides data on the state's transportation system to help integrate local, regional, tribal, and state land use planning.[89] WSDOT also provides information to help projects determine permitting requirements if the project occurs in wetlands or other waters, which, although this resources is more specific to transportation-related projects, could serve as a resource to certain broadband projects.[90] The Governor's Office for Regulatory

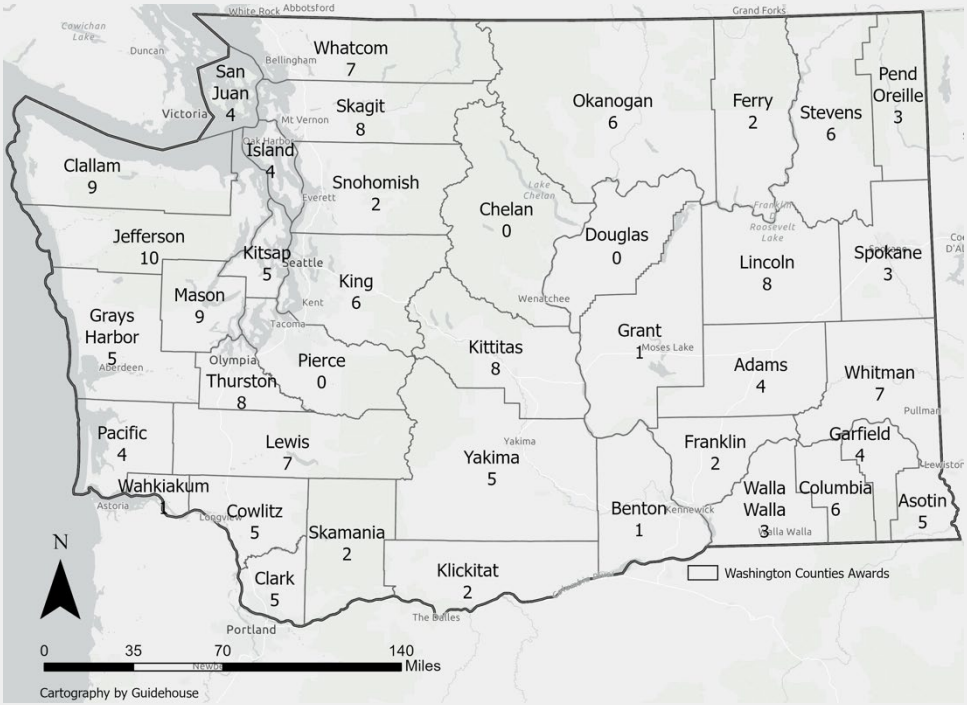
[79] NTIA (December 2022), What is Permitting? Accessed at: What is Permitting? (doc.gov)
[80] CBG Communications (June 27, 2008), Broadband Study Report Prepared for the Washington Utilities and Transportation Commission. Accessed at: Microsoft Word - 48663698-3079-0809D1.doc (wa.gov)
[81] David Daugherty (October 2021), A Franchise Model May Be the Key to Providing Rural Broadband. Accessed at: A Franchise Model May Be the Key to Providing Rural Broadband (bbcmag.com)
[82] King County (September 6, 2013), Cable System Franchise and Agreement between WaveDivision I, LLC, and King County, Washington. Accessed at: Franchise-Agreement-WAVE-June-2016.ashx (kingcounty.gov)
[83] WSBO (January 2021), State Broadband Office 2020 Report. Accessed at: Legislative Report v1.6 (wa.gov)
[84] Washington State Legislature (2021), House Bill Report ESHB 1457. Accessed at: 1457-S.E HBR PL 21 (wa.gov)
[85] NTIA (December 2022), What is Permitting? Accessed at: What is Permitting? (doc.gov)
[86] CBG Communications (June 27, 2008), Broadband Study Report Prepared for the Washington Utilities and Transportation Commission. Accessed at: Microsoft Word - 48663698-3079-0809D1.doc (wa.gov)
[87] Washington State Department of Commerce (n.d.), Public Works Board – Technical Assistance, Training and Resources. Accessed at: Public Works Board - Technical Assistance (wa.gov)
[88] Infrastructure Assistance Coordinating Council (n.d.), IACC- Infrastructure Technical Assistance. Accessed at: infrafunding.wa.gov/techAssistance.html
[89] Washington State Department of Transportation (May 2017), WSDOT Community Planning Portal. Accessed at: WSDOT-Community-Planning-Portal-May-2017 (wa.gov)
[90] Washington State Department of Transportation (n.d.), Wetlands & other waters. Accessed at: Environmental guidance - Wetlands & other waters | WSDOT

Innovation and Assistance provides permit schematics for various permitting processes.[91] Although it does not include any broadband or ISP-specific publication, it does provide a breakdown of the State Environmental Policy Act process.[92]

While the state provided supports described above are helpful, this approach does not specifically target the broadband construction process. However, the Washington State Legislature recently took additional steps to streamline the permitting and approval process for new clean energy projects. [93] Although this improved process does not apply directly to broadband, it may serve as a model for streamlining the broadband deployment approval process. **Chapter 4** provides a more in-depth synthesis of the permitting process challenges affecting broadband deployment.

EXISTING PLANS AND PROJECTS

As discussed in **Section 3.1** above, the WSBO and other state departments continue to support broadband expansion throughout the state, through various loan and grant programs. As of July 2023, CERB, PWB, and the WSBO were administering nearly 180 broadband planning or construction projects, as **Map 9** shows. The Washington Utilities and Transportation Commission also administers and oversees broadband expansion, with participating companies deploying broadband to over 2,965 locations. It is important to identify and understand the scope of these projects so that funding fully maximizes all available broadband resources. In practice, this means awarding BEAD funding to areas that may not have previously received broadband funding and areas where there are greater challenges and barriers to broadband expansion.



Map 9: CERB, PWB, and WSBO Broadband Projects Awarded in Each County

Source: Analysis of existing CERB, PWB, and WSBO broadband projects as of July 2023.

[91] Governor's Office for Regulatory Innovation and Assistance (n.d.), Permit Schematics. Accessed at: ORIA - Publications (wa.gov)
[92] Governor's Office for Regulatory Innovation and Assistance (June 7, 2022), State Environmental Policy Act (SEPA) (For Non-GMA Agencies. Accessed at: State Environmental Policy Act Non GMA Agencies Process Schematics (wa.gov)
[93] Washington State Legislature (July 23, 2023), Engrossed Second Substitute House Bill 1216. Accessed at: 1216-S2.SL.pdf (wa.gov)

Table 10 below expands upon the broadband project funding amounts described in **Map 9** above, outlining grants and loans awarded from CERB, PWB, the WSBO, and the total amount of funding as of June 2023. To ensure that project areas are not funded twice, the WSBO will complete a de-duplication process, which will be outlined in the forthcoming Initial Proposal. The deduplication process refers to removing locations that are subject to enforceable commitments to provide qualifying broadband service.

Table 10: CERB, PWB, and WSBO Broadband Funding by County[94]

County	CERB Funding	PWB Funding	WSBO Funding	Total
Adams	$0	$788,946	$10,587,871	$11,376,817
Asotin	$1,570,455	$3,719,663	$4,000	$5,294,118
Benton	$0	$0	$4,000	$4,000
Clallam	$627,350	$4,907,970	$16,078,985	$21,614,305
Clark	$498,927	$50,000	$4,000	$552,927
Columbia	$2,026,625	$1,165,000	$1,177,596	$4,369,221
Cowlitz	$2,756,496	$0	$662,832	$3,419,328
Ferry	$50,000	$0	$4,000	$54,000
Franklin	$0	$0	$4,858,610	$4,858,610
Garfield	$873,482	$3,827,365	$4,000	$4,704,847
Grant	$0	$1,361,488	$0	$1,361,488
Grays Harbor	$2,050,000	$49,350	$6,920,366	$9,019,716
Island	$50,000	$4,842,933	$1,618,311	$6,511,244
Jefferson	$87,350	$2,958,087	$31,970,129	$35,015,566
King	$50,000	$647,373	$13,604,981	$14,302,354
Kitsap	$4,565,363	$0	$8,000	$4,573,363
Kittitas	$90,000	$3,381,694	$11,917,049	$15,388,743
Klickitat	$50,000	$0	$4,000	$54,000
Lewis	$50,000	$9,962,520	$36,208,421	$46,220,941
Lincoln	$2,001,420	$4,162,072	$16,226,071	$22,389,563
Mason	$3,840,782	$606,612	$33,839,175	$38,286,569
Okanogan	$100,000	$0	$20,046,942	$20,146,942
Pacific	$147,500	$5,050,000	$0	$5,197,500
Pend Oreille	$50,000	$5,026,198	$0	$5,076,198
San Juan	$0	$0	$14,952,927	$14,952,927
Skagit	$3,550,000	$2,152,791	$8,662,251	$14,365,042

[94] Funding outline in **Table 10** includes grant and loans awarded for projects within a county's jurisdiction.

County	CERB Funding	PWB Funding	WSBO Funding	Total
Skamania	$50,000	$0	$4,000	$54,000
Snohomish	$0	$34,110	$16,713,615	$16,747,725
Spokane	$100,000	$0	$4,000	$104,000
Stevens	$0	$0	$36,948,972	$36,948,972
Thurston	$2,616,459	$0	$7,428,847	$10,045,306
Wahkiakum	$50,000	$0	$0	$50,000
Walla Walla	$2,035,000	$0	$4,000	$2,039,000
Whatcom	$3,312,656	$0	$7,150,000	$10,462,656
Whitman	$3,759,921	$0	$2,635,205	$6,395,126
Yakima	$50,000	$50,000	$11,318,004	$11,418,004
Total	**$37,059,786**	**$54,744,171**	**$311,571,160**	**$403,375,118**

Source: Analysis of broadband funding provided by the WSBO.

BROADBAND WORKFORCE

Building out a vast broadband network requires many different types of jobs, each with their own educational and professional requirements. Unfortunately, the U.S. Department of Labor has yet to develop job classifications unique to the broadband industry, and uniform credentialing for specific job titles within the Broadband industry do not exist.[95] However, considering that the jobs associated with broadband deployment is similar to other communication jobs, such as telecommunication equipment installers or radio, cellular, and tower equipment installers and repairers, we can still get a general idea of the current workforce available for broadband projects within the state. For more information on workforce needs related to broadband deployment, please find Washington state's workforce plan in **Appendix 7.7**.

3.2.2 Asset Inventory: Broadband Adoption

Facilitating the adoption of broadband services is an essential component of providing reliable, universal, high-speed internet for residents, communities, and businesses across the state of Washington. According to federal law, broadband adoption equates to "daily access to the Internet:

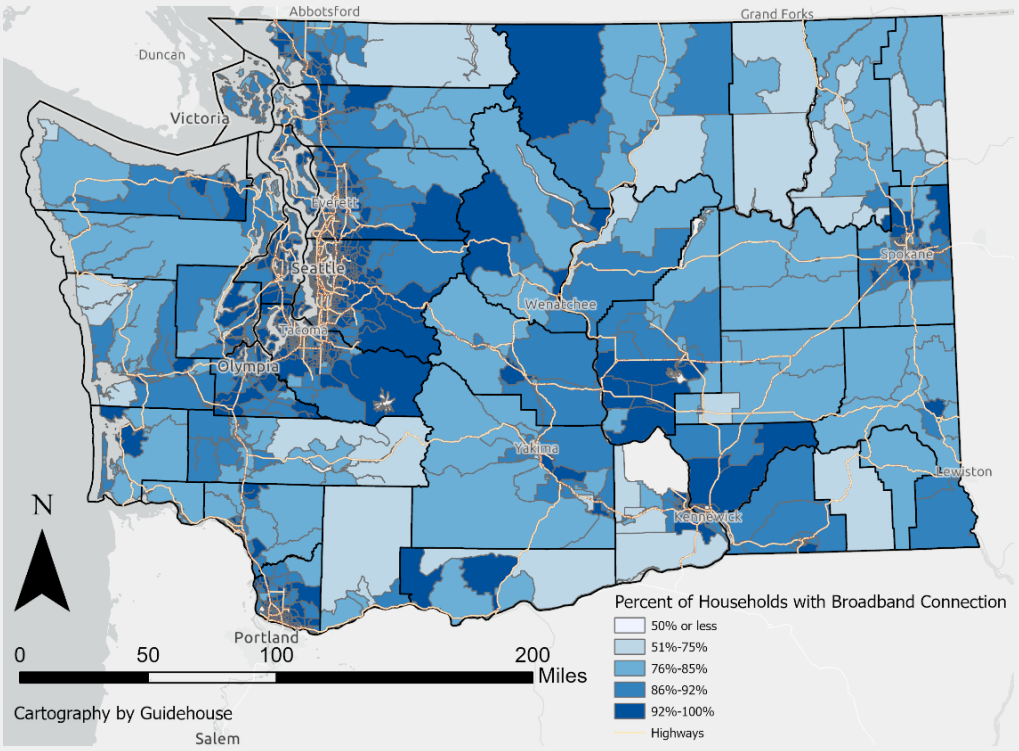
(1) At speeds, quality, and capacity necessary to accomplish common tasks,

(2) With the digital skills necessary to fully participate online, and

(3) On a personal device and secure convenient network."[96]

[95] Federal Communications Commission (October 2020), Broadband Infrastructure Deployment Job Skills and Training Opportunities Working Group. Accessed at: Broadband Infrastructure Deployment Job Skills and Training Opportunities Working Group, FCC, October 29-30, 2020.
[96] Digital Equity Act of 2021 (2021). Accessed at: 47 USC Ch. 16: BROADBAND ACCESS (house.gov)

Using ACS data, an average of 92% of households within the state have a broadband internet subscription and 96% have digital devices.[97] However, as **Map 10** displays, broadband subscription is not uniform throughout the state, as some areas have household broadband subscription rates well below this average. Moreover, household broadband subscription rates in counties such as Ferry, Columbia, and Pend Oreille counties are as low as 71%, 75%, and 78%, respectively. The inequitable distribution of broadband subscription rates across Washington state can be attributed in part to limited access to broadband services, but there are also many Washingtonians who do not adopt broadband services because they do not have the digital literacy skills to use the internet, do not see the need for internet access, or they do not have a device to access the internet. Fortunately, a wide array of collaborators in local governments, tribes, community anchor institutions, and nonprofits are continuing efforts to expand broadband and invest in digital equity programs.



Map 10: Percent of Households with a Cable, Fiber, or DSL Broadband Subscription by Census Tract[98]

Source: Analysis of ACS's broadband subscription data accessed on May 24, 2023.

[97] American Community Survey (2021), S2801: Types of Computers and Internet Subscriptions [5 Year Estimates]. Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]

[98] Although satellite services are not a reliable source of broadband, in accordance with NTIA definition, it may be the only viable option for some households in Washington that are in extremely high-cost locations. Please note that as fixed wireless is considered broadband by the FCC, it is captured in the ACS broadband subscription data on this map.

Many Internet Service Providers (ISPs) in Washington state are involved in promoting broadband adoption to counteract low subscription rates. ISPs promote access to broadband adoption through campaigns, low-cost plans, or digital inclusion initiatives. As providers of broadband across the state, ISPs are integral to the broadband expansion partner ecosystem. Collaborative partnerships exist among several ISPs and entities who provide internet connectivity and navigation services. In fact, multiple digital navigator programs across the state received discounted digital devices with connective service plans from AT&T, T-Mobile, and Comcast. The following partnership examples are only a sample, and not inclusive of all ISPs recent partnerships across Washington state.

One example of this is the WSBO-funded digital navigation services offered by Washington's Department of Veterans Affairs in collaboration with T-Mobile, which provides veterans with discounted wireless service.

Another example of a private ISP promoting adoption is Comcast, who has partnered with Goodwill of the Inland Northwest to expand its low-income internet and technology. Together, the organizations opened the Comcast Digital Training Classroom in Spokane for Goodwill's job training and placement program, which helps people increase their digital skills and workforce opportunities, giving participants the skills needed to facilitate broadband adoption. Comcast and Goodwill also announced the expansion of Comcast's Internet Essentials broadband adoption program, which allows internet to be more easily accessible to low-income households in Comcast's Washington service area and includes training resources and guidance for individuals on internet basics and how to stay safe online.[99]

Furthermore, AT&T and Digitunity selected InterConnection to provide refurbished computers and technical support to two thousand Seattle-based students through their 10-City Project.[100] This collaboration provides funding to eleven nonprofit refurbishing organizations from Digitunity's Alliance for Technology Refurbishing and Reuse Network to award devices directly to local K-12 students and their families, addressing one of the causes of low broadband subscription rates.

In addition to efforts by ISPs to improve subscription rates, many state and community organizations are addressing broadband adoption by focusing on improving digital literacy and augmenting digital skills. As **Table 11** shows below, programs range from those that promote digital inclusion or provide skills training, to those that offer subsidized or low-cost device distribution. It is worthwhile to note that the Washington State Legislature identified two additional underserved populations in the Digital Equity Act, namely individuals experiencing housing instability and youth in foster care.

[99] Comcast (October 7, 2019), Comcast, Goodwill Celebrate Internet Essentials Washington State Expansion. Accessed at: https://washington.comcast.com/2019/10/07/comcast-goodwill-celebrate-internet-essentials-wa-state-expansion/
[100] InterConnection (n.d.), InterConnection Partners with AT&T and Digitunity to Bridge Digital Divide Among Students. Accessed at: InterConnection Partners with AT&T and Digitunity to Bridge Digital Divide Among Students | Charitable Computer Recycling & Reuse

Table 11: Examples of Programs Supporting Broadband Adoption

Organization Names	Asset Description	Asset Type	Target Covered Populations[101]
The Asian Counseling and Referral Service's Ready to Work	A comprehensive program serving people with limited English overcome language barriers, gain digital literacy skills, find meaningful employment, and achieve economic self-sufficiency. [102]	Digital Literacy Program	• Individuals with a language barrier; • Individuals who are members of a racial/ethnic minority group
The Community Health Network of Washington's Link to Care Program	A program that serves patients in 39 counties across Washington remotely. It provides free digital navigation; free digital literacy skills training; affordable internet access assistance and connected device acquisition assistance for residents or households at or below 135% of the Federal Poverty Guidelines. [103]	Digital Navigator Program	• Individuals who live in low-income households
Computing for All	A program that seeks to break down cultural and systemic social barriers that prevent young adults of all races, genders, and abilities from exploring computer science as a potential career. These employer-mentored, project-based work programs support practicing the application of critical thinking and problem-solving to real-world work scenarios.[104]	Digital Skills Training Program	• N/A
Goodwill Connect	A statewide collaboration of all the independent Goodwill locations in Washington to increase digital equity to individuals furthest from opportunity by offering free digital skills training, devices, and broadband connectivity.[105]	Digital Navigator Program	• N/A
HelpingLink	A program that offers iPad lessons and training for adults and seniors, from beginner basics to advanced features of iPads. Enrollment in the class is free and provides students with everything they need to know about using an iPad for translation, navigation, and communication.[106]	Digital Literacy Program	• Aging individuals

[101] "Target Covered Populations" describes the 13 population groups NTIA identified as underrepresented communities: low-income households; ageing individuals; incarcerated individuals; veterans; individuals with disabilities; individuals with a language barrier, including individuals who are English learners or have low levels of literacy; individuals who are members of a racial or ethnic minority group, and individuals who primarily reside in a rural area. Additionally, we also included two population groups—children and youth in foster care and individuals experiencing housing instability—identified in Washington state law's definition of 'covered populations', when applicable.
[102] Asian Counseling and Referral Service (n.d.), Ready to Work. Accessed at: https://acrs.org/services/employment-and-training-services/ready-to-work/
[103] Community Health Network Washington (n.d.), Link to Care WA. Accessed at: https://www.linktocarewa.org
[104] Computing for All (n.d.), Launch Your Tech Career. Accessed at: https://www.computingforall.org/
[105] Goodwill Connect (n.d.). Accessed at: https://goodwillconnect.com/
[106] Helping Link (n.d.). Accessed at: https://www.helpinglink.org/about/

Organization Names	Asset Description	Asset Type	Target Covered Populations[101]
InterConnection	A program that enables digital equity by providing technology and connectivity to underserved communities through sustainable refurbishment and re-use of digital devices.[107]	Discounted Device Program	• Underserved communities in general
Microsoft LEARN (formerly Microsoft Imagine Academy)	Microsoft's centralized training and professional development platform for K12, where educators and school leaders can explore free learning and skills resources and learn about programs, professional development offerings, and Microsoft technologies that advance teaching and learning practices.	Digital Skills Training Program	• N/A
The Office of Superintendent of Public Instructure Digital Equity and Inclusion Grants	A grant program that allocates state funds, with the aim to support digital learning environments, grow and support 1:1 device program, provide access to training in inclusionary practices, and more.[108]	Digital Literacy Program	• N/A
The Seattle Housing Authority Digital Navigation	A program that offers digital navigation services to Seattle Housing Authority residents. Digital navigation services include learning how to set up a computer, signing up for discounted internet services, navigating the internet, using contemporary meeting apps such as Zoom, Microsoft Teams and Google Meet, and using Microsoft Office to create documents with word processing and spreadsheet software.[109]	Digital Navigator Program	• Individuals experiencing housing instability
The TechConnect Washington Community Helpdesk (Equity in Education Coalition)	A program that provides free technical support to Washington residents to help them engage in a virtual environment. Helpdesk Technicians are standing by to provide technical guidance, digital navigation support, and connections to other community resources to support parents, students, elders, and all community members during this time. The team is available to provide guidance via chat, email, or phone in the languages listed below.[110]	Digital Navigator Program	• N/A

[107] InterConnection (n.d.). Accessed at: https://interconnection.org/
[108] OSPI (2023), Digital Equity and Inclusion Grant. Accessed at: https://www.k12.wa.us/policy-funding/grants-grant-management/digital-equity-and-inclusion-grant
[109] Seattle Housing Authority (n.d.), Technology Training. Accessed at: https://www.seattlehousing.org/supportive-services/education-and-job-training/technology-training
[110] TechConnect Washington (n.d.). Accessed at: https://techconnectwa.org/

Organization Names	Asset Description	Asset Type	Target Covered Populations[101]
Washington 4-H Tech Changemakers	A program that helps adults and other learners by supporting digital literacy, digital equity, tech adoption, and promoting tribal or rural broadband. 4-H Youth are helping adults find jobs, understand remote work, and how to access or adopt new technology.[111]	Digital Literacy Program	• N/A
The Washington State Department of Veteran's Affairs Digital Navigator Program	The program provides eligible Veterans or their families with devices like a laptop and a smartphone with a mobile hotspot through a partnership with T-Mobile. The program includes digital literacy training as well to connect more veterans with their earned benefits like disability compensation, pension, healthcare, and other services.[112]	Digital Navigator Program	• Veterans

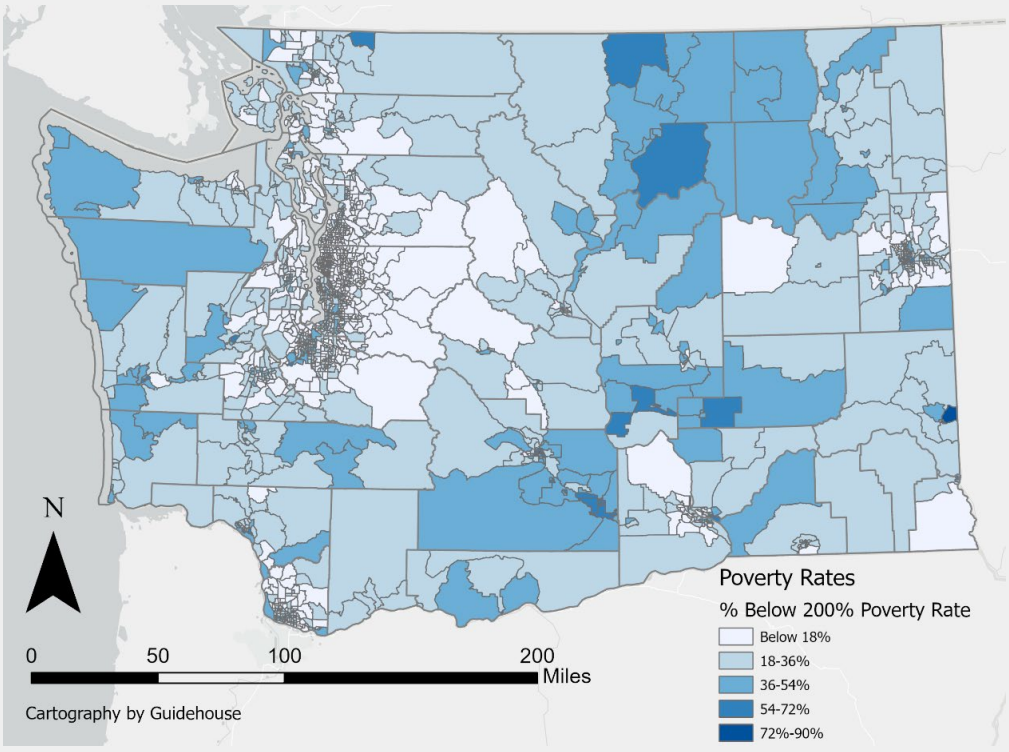
The volume of diverse actors in the broadband adoption space provides multiple avenues to reach Washingtonians without broadband subscriptions. Although the programs and opportunities related to broadband adoption listed here are not comprehensive, this section demonstrates the breadth of assets related to adoption within Washington state. Organizations working in the digital equity space have the potential to effectively improve subscription rates and reduce the number of unserved households within the state.

[111] Washington State University (n.d.), 4-H Youth Development Program – Ferry County. Accessed at: https://extension.wsu.edu/ferry/4-h-youth-families/

[112] Chris Cashman (2023) Washington veterans can get free tech, digital literacy training under new program. Accessed at: https://www.king5.com/article/news/local/washington-veterans-free-technology-digital-literacy-training/281-0523ffb3-7b02-4857-a835-dbcd5b8d829d

3.2.3 Asset Inventory: Broadband Affordability

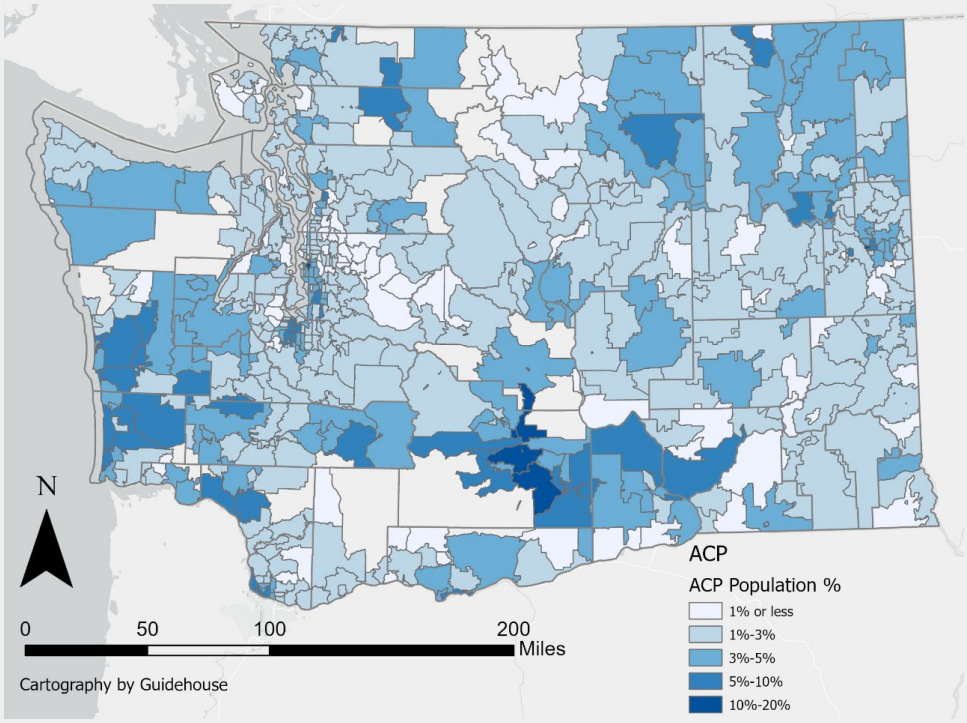
The WSBO recognizes that affordability is a significant barrier for many community members when it comes to broadband internet adoption, especially in areas where a high proportion of the population live at or below 200% of the Federal Poverty Guidelines, as **Map 11** shows. In approaching this obstacle to universal adoption, it is important to look to the existing ecosystem of affordability programs and incentives that can reduce the cost burden for consumers throughout the state.



Map 11: Percent of Population Living at or Below 200% of the Federal Poverty Guidelines by Census Tract

Source: Analysis of 2021 ACS data.

To address concerns surrounding broadband affordability, the federal government requires BEAD funding recipients to ensure that consumers benefitting from subsequent broadband projects have access to affordable internet options, including the Affordable Connectivity Program (ACP). The ACP is an FCC program that provides different internet service discount options according to tiers of eligibility for individuals living at or below 200% of the Federal Poverty Guidelines or participating in various assistance programs can apply to the ACP program. **Map 12** shows the percentage of the population enrolled in ACP for each zip code. As the administering entity, the WSBO is committed to ensuring that all subscribers within BEAD project areas can utilize the ACP to increase the affordability of broadband services.



Map 12: Percent of Population Enrolled in ACP by Zip Code

Source: Analysis of Universal Service Administrative Company and NoaNet ACP data.

Although the ACP is the primary program for subsidizing broadband subscriptions, it is not the sole subsidized or discounted broadband service and equipment program available to consumers throughout the state, as outlined in **Table 12** below.

Table 12: Examples of Broadband Affordability Programs Throughout the State

Organization Name	Asset Description	Asset Eligibility	Asset Type
The Affordable Connectivity Program (ACP)	An FCC program that helps families and households afford internet service. The program benefits include up to $30 per month discount on internet service; up to $75 per month discount for households on qualifying tribal lands; and a onetime discount of up to $100 for a laptop, desktop computer, or tablet through a participating provider.	Enrollment in the ACP is open to households that meet specific criteria, which can include having an income that is at or below 200% of the Federal Poverty Guidelines or participating in assistance programs, such as Supplemental Nutrition Assistance Program, Medicaid, Federal Public Housing, Supplemental Security Income, Special Supplemental Nutrition Program for Women, Infants, and Children, or Lifeline. [113]	Subsidy Program
Connect All powered by InterConnection	A program that provides low-cost internet for $14.95 per month on the T-Mobile LTE Plus network through Mobile Citizen. There is a one-time cost fee of $99 to purchase an LTE modem hotspot, but the program includes unlimited LTE plus data with no overage charges. The program also offers refurbished laptops available for a low-cost with software (Windows, Microsoft Office, Microsoft Security Essentials) and a one-year warranty.	Residents can qualify if they are a DSHS recipient or have an annual income no greater than $54,000.[114]	Discount Program
The Internet Essentials Program from Comcast	The program provides download speeds up to 50 Mbps, free installation and in-home Wi-Fi, and other benefits. Eligible households are also able to purchase refurbished laptops for $149.99 + tax.	This program provides internet service at no cost if customers are qualified for and enrolled in the ACP.[115]	Discount Program

[113] Washington State Department of Commerce (n.d.), Affordable Connectivity Program (ACP) and Lifeline. Accessed at: https://www.commerce.wa.gov/building-infrastructure/washington-statewide-broadband-act/affordable-connectivity-program-acp-and-lifeline/
[114] InterConnection (n.d.), Connect All. Accessed at: https://connectall.org/
[115] Xfinity (n.d.), Internet Essentials. Accessed at: https://www.xfinity.com/learn/internet-service/internet-essentials

Organization Name	Asset Description	Asset Eligibility	Asset Type
Lifeline	A federal program that lowers the monthly cost of phone or internet service. Eligible consumers can get up to $9.25 off the cost of phone, internet, or bundled services. If you live on tribal lands, you can receive a discount of up to $35.25 per month, and up to a $100 reduction for first time connection charges.	Eligible residents can get Lifeline if their income is 135% or less than the federal poverty guidelines. The guideline is based on their household size and state. Residents may also qualify if they or someone in their household gets SNAP, Apple Health (Medicaid), or other federal assistance programs.[116]	Subsidy Program
The Simply Internet by Astound (by Wave)	A program in Seattle that is open to current or new Astound powered by Wave customers who live in an area where Astound is available. The service provides service levels of 50/5 Mbps for $9.95 per month + tax, free installation, and in-home Wi-Fi.	Eligibility includes those who quality for the Seattle Utilities Discount Program, those who qualify for low-income subsidized housing, or those who have a child who qualifies for the free or reduced school lunch program.[117]	Discount Program
Spectrum Internet Assist (Charter Communications)	Spectrum Internet Assist is an affordable, reliable Internet option for low-income households.	To qualify for Spectrum Internet Assist, a household member must be receiving one of these assistance programs: (1) National School Lunch Program, (2) Community Eligibility Provision of the NSLP, or (3) Supplemental Security Income (for applicants age 65+ only).	Discount Program

According to the Universal Service Administrative Co. ACP Enrollment and Claims Tracker, Washington has an estimated 1,125,000 eligible households, however, as of July 2023, less than 290,000 are enrolled.[118] Yet, despite its benefits, many households eligible for ACP in Washington state do not take advantage of program – only about 26% of households eligible for ACP enrolled in the program.[119] To address this, the Washington State Department of Commerce has expanded its efforts to increase recognition of the ACP and subsequent enrollment, providing resources on its homepage to assist residents with the application process. Additionally, many city, county, and nonprofit organization websites link to the ACP to boost awareness and provide details on how residents can apply for the program.

[116]Universal Service Administrative Co. (n.d.), Lifeline Support. Accessed at: https://www.lifelinesupport.org/
[117]Wave (n.d.), Simply Internet. Accessed at: https://wavesimplyinternet.com/
[118] Universal Service Administrative Co. (July 2023), ACP Enrollment and Claims Tracker. Accessed at: https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/#enrollment-by-state
[119] Universal Service Administrative Co. (July 2023), ACP Enrollment and Claims Tracker. Accessed at: https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/#enrollment-by-state

Supplementing these state and local government outreach efforts, some private ISPs in Washington state are also implementing programs intended to increase ACP enrollment. For example, Comcast recently announced that residents can now visit Xfinity Retail Stores throughout Washington state to enroll in ACP to get internet service for free via Internet Essentials Plus, a service that includes 100 Mbps speeds, a cable modem, access to Wi-Fi hotspots, and unlimited data for $29.95 per month.[120] This program provides eligible households with the opportunity to have someone walk them through the application process step by step: a crucial service considering that our interviews with digital equity professionals within the state identified the multi-step application process as a barrier to program entry. Other nonprofit organizations, such as Goodwill and the Equity in Education Coalition, also regularly promote the ACP to eligible constituents and provide them with the information needed to apply to the program.

In addition to state subsidy and discount programs, recent changes to state law now allow some utility services providers to include broadband discounts as part of existing utility discount programs. Signed into law by Governor Jay Inslee in 2021, the Public Broadband Act allows local governmental entities—including Public Utility Districts (PUDs) and port districts—the unrestricted authority to provide Internet services to end-users, thereby classifying broadband as a basic utility, such as water and electricity.[121] This expansion of services utilities can provide to their customers creates an opportunity to make broadband services more affordable, as broadband can be incorporated into existing utility discount programs.

One such state administered utility discount program is the Low-Income Home Energy Assistance Program (LIHEAP) offered by the Washington State Department of Commerce, which provides funds from a federal block grant program to help low-income households in Washington maintain affordable, dependable utility services and avoid disconnection.[122] Through a network of community action agencies and local partners, local partner agencies send payments directly to eligible residents' energy utility provider, which could potentially be replicated for internet services. In 2021 and 2022, LIHEAP saw a 10% increase in applications in Washington state, demonstrating an increase in need for utility discount programs for low-income households.[123]

On the local level, Jefferson County's PUD #1 offers low-income rates for its electric and water customers and will be automatically extending discounted rates to eligible internet service customers as well, which will be available to customers who earn either 150% of the median federal poverty level or less or are over age 62 with a household income not exceeding $30,000 per year. Eligible customers can receive both ACP and JPUD low-income benefits, meaning some low-income customers could receive 150/150 Mbps internet for only $15 per mo. Additional information on other planned affordability programs from PUDs, port districts, and tribal and local government entities is included in **Appendix 7.8**.

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[120] Comcast (May 11, 2022), Comcast Makes ACP Program Available at Washington State Retail Locations. Accessed at: https://washington.comcast.com/2022/05/11/comcast-makes-acp-program-available-at-washington-state-retail-locations/#:~:text=According%20to%20U.S.%20Census%20Data,apply%20for%20the%20ACP%20program.

[121] Washington Public Utility Districts Association (2021), New laws take effect in Washington State aimed at bridging the digital divide. Accessed at: https://www.wpuda.org/retail-broadband-laws-go-into-effect-july-25--2021#:~:text=%E2%80%9CWashington%20State%20will%20finally%20allow,Public%20Broadband%20Act%20(HB1336).

[122] Washington State Department of Commerce (n.d.), Low-Income Home Energy Assistance Program (LIHEAP). Accessed at: https://www.commerce.wa.gov/growing-the-economy/energy/low-income-home-energy-assistance/

[123] Farrah Jadran (February 1, 2023), More people applied for Washington's low-income utility bill assistance program in 2021, 2022. Accessed at: More apply for Low-Income Home Energy Assistance Program (LIHEAP) | king5.com

Ultimately, there are a range of programs and initiatives underway in Washington state that the WSBO will continue to leverage to promote and expand broadband affordability. This section is not an exhaustive overview of every broadband affordability asset in the state, but it provides insight as to where BEAD funding may be disbursed to maximize community impacts. Scaling affordability programs, expanding assistance for ACP applications, and building awareness of the program, increasing public recognition of affordability resources, and working with local and tribal governments to identify opportunities to work with ISPs to decrease service costs are all ways the WSBO can endeavor to improve broadband affordability.

3.2.4 Asset Inventory: Broadband Access

Within the context of BEAD funding, broadband access refers to the availability of high-speed, reliable internet and related equipment, including having internet connections and technology at home or in community institutions through free public Wi-Fi or public computer centers.[124]

The Washington State Department of Commerce (DOC) recognizes the importance of broadband access and the statewide need to provide an alternative method to access the internet. In fact, during the COVID-19 pandemic, DOC provided a map with the locations of public Wi-Fi access points throughout the state. Although the map is no longer updated, it served as an important accessibility asset for many Washingtonians without reliable internet service. Of the public Wi-Fi locations detailed, many of the public access spots are in community libraries, public libraries, and K-12 and higher education institutions.

Beyond serving as public Wi-Fi access spots across Washington state, local libraries also serve as access hubs for devices. As shown by the Public Libraries Survey data from Fiscal Year 2020, many residents and communities access the internet through their public libraries. Consulting the Public Libraries Survey from Fiscal Year 2020, data shows that there were about 6,500 internet computers used by the public and roughly 1,475,000 uses of public internet computers per year.[125] Additionally, there were over 33,265,000 total annual wireless sessions provided by library wireless service. The Public Libraries Survey data enumerates how important libraries are in providing access to Washingtonians who many not otherwise be able to use the internet.

Some libraries across Washington have also created programs that provide mobile hotspots for checkout. In an interview conducted with the Director of the Libraries of Stevens County, the Mobile Hotspots for Checkout program was mentioned as a successful program for increasing broadband access. Run by the Libraries of Stevens County, the program offers hotspots for checkouts for library card users, providing internet access via a cellular connection to your devices through Verizon or AT&T networks.[126] Library card users can check out a mobile hotspot for 28 days and the devices are intended to help county residents with limited or no internet access with connectivity and/or test coverage at their home for the network. Similar hotspot programs are also run by the Seattle Public Library and the Tacoma Public Library.[127, 128]

[124] NTIA (n.d.), What does Digital Inclusion mean? Accessed at: https://broadbandusa.ntia.doc.gov/about-us/frequently-asked-questions/what-does-digital-inclusion-mean
[125] Public Libraries Survey (2020). Accessed at: https://www.imls.gov/sites/default/files/2022-07/pls_fy2020_csv.zip
[126] Libraries of Stevens County (n.d.), Mobile Hotspots for Checkout. Accessed at: https://thelosc.org/mobile-hotspots/
[127] The Seattle Public Library (n.d.), SPL HotSpot. Accessed at: https://www.spl.org/using-the-library/reservations-and-requests/reserve-a-computer/computers-and-equipment/spl-hotspot
[128] Tacoma Public Library (n.d.), Mobile Hotspots. Accessed at: https://www.tacomalibrary.org/mobile-hotspot/

In addition to providing internet access through public library branches, Washington school buildings also serve as access points across the state. As noted in the OSPI's 2020-21 Annual Technology Survey, 99.7% of Washington school buildings have at least a 10 Mbps connection to the internet, with 98.7% having at least a 100 Mbps connection. Additionally, 99.7% of Washington school buildings provide some degree of wireless access to the internet. Of those buildings, over 97% provide access throughout the entire building. For students or community members without internet access at home, 276 districts (about 94%) allow students or staff to connect personal devices to their district network. Of those 276 districts, only 61 of them limit personal device connection to staff access only, allowing students or staff without broadband at home to participate in the digital economy and society.

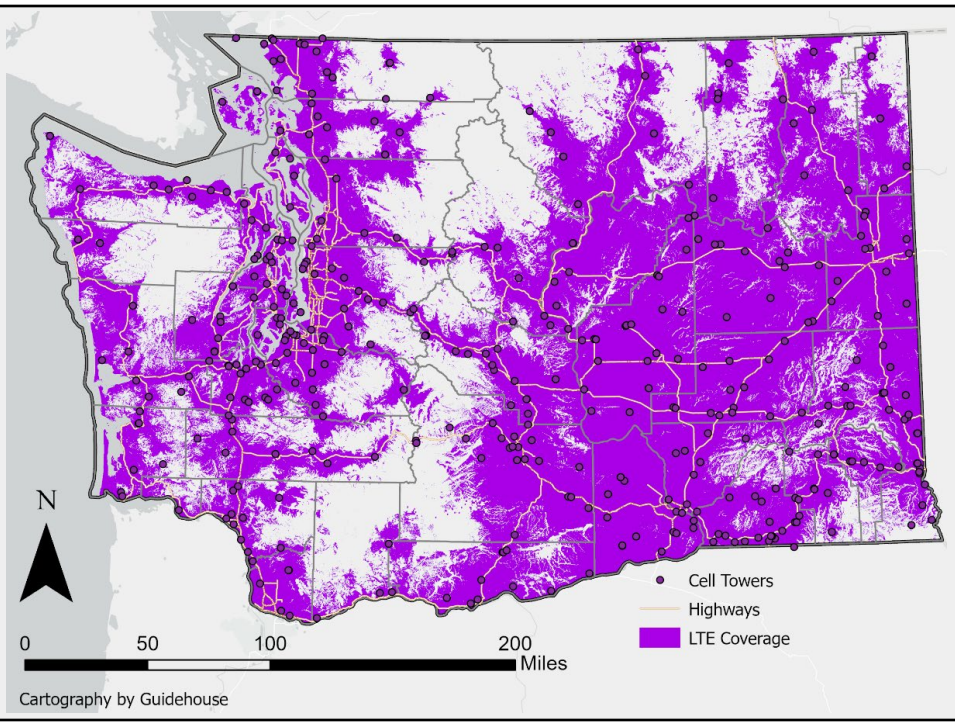
Various nonprofit organizations have also developed mobile classrooms or computer labs that can travel to communities where internet access may be limited, or where individuals have challenges reaching publicly available internet services. These mobile classrooms also double as hotspots. For example, Evergreen Goodwill launched a "Digital Equity Bus" in 2022, which features SMART Board technology, Wi-Fi access, adjustable desk seating for 9-12 people, an accessible ramp, and room for multiple instructors to help bring their computer classes, workforce development programs, and wraparound support services to rural and historically under-resourced communities across Northwest Washington.[129] Book mobiles are also being used by some libraries like Clallam Bay library to offer mobile library services and serve as mobile Wi-Fi hotspots to reach under-connected communities.

Building off the usefulness of mobile hotspots and computer labs to increase resident and community access to broadband, it is worthwhile to consider cellular connectivity across the state. A growing number of cellular providers, including T-Mobile and Verizon, across the U.S. are responding to internet service gaps by introducing residential internet plans. Cellular internet uses a router or hotspot to connect to a provider's cellular network, just like your mobile phone. Network speeds are usually slower than what a fiber or cable connection could achieve, but it offers an alternative for communities and residents who are currently unserved.[130]

As **Map 13** shows, LTE data covers large areas of the state resulting in some areas to form of access depending on the carrier, inclusive of minimum speeds of 5 Mbps download and 1 Mbps upload. Although the LTE data coverage speeds are not equal to Washington state's broadband speed goals, it illustrates that some rural communities may be able to access limited internet where broadband services are inaccessible. Unfortunately, regions that are highly mountainous (most of the gray areas on the map that do not have coverage) still struggle with cellular connectivity due to the difficulty of building infrastructure in that terrain.

[129] Ryan Hodges (May 16, 2022), Evergreen Goodwill Unveils "Digital Equity Bus." Accessed at: https://evergreengoodwill.org/blog/597-evergreen-goodwill-unveils-digital-equity-bus

[130] Sean Jackson and Trey Paul (March 31, 2023), Cellular Home Internet: Who's Got It and What It Could Mean for You. Accessed at: https://www.cnet.com/home/internet/cellular-home-internet-overview/



Map 13: LTE Data Coverage

Source: Analysis of FCC data with coverage as of May 15, 2021.

Fundamentally, broadband access is integral to universal internet service provision in Washington state. To support the availability of high-speed, reliable internet and related equipment for all residents, businesses, and communities, the WSBO can look to established public device access assets, public Wi-Fi access spots, and mobile hotspot checkout programs.

3.2.5 Asset Inventory: Digital Equity

There is a vast and extremely dedicated ecosystem of digital equity advocates across the state of Washington, informing the incorporation of and dedication to digital equity in every aspect of this Plan. In accordance with the NTIA definition, digital equity refers to the condition in which individuals and communities have the information technology capacity that is needed for full participation in the society and economy of the United States.[131] Particularly, this relates to increasing full participation for underrepresented communities. As defined by the NTIA, the term "underrepresented communities" refers to groups that have been systematically denied a full opportunity to participate in all aspects of economic, social, and civic life. These include low-income households, aging individuals, incarcerated individuals, veterans, persons of color, Indigenous and Native American persons, members of ethnic and religious minorities, women, LGBTQI+ persons, persons with disabilities, persons with limited English proficiency, persons who live in rural areas, and persons otherwise adversely affected by persistent poverty or inequality. In addition to the underrepresented and covered populations identified by the NTIA in both the BEAD and Digital Equity Notice of Funding Opportunities, Washington state legislation identifies

[131] NTIA (n.d.), What Does Digital Inclusion Mean? Accessed at: https://broadbandusa.ntia.doc.gov/about-us/frequently-asked-questions/what-does-digital-inclusion-mean

two additional underserved populations that require supplementary resources to achieve digital equity, namely individuals experiencing housing instability and youth in foster care.[132]
Although Washington's Digital Equity Plan will provide a more in-depth analysis of the state's digital equity assets, there are a few initiatives that Washington state has already begun that merit discussion in this Plan. The Washington State Legislature recently passed into law HB 1723, an act intended to close the digital equity divide by increasing the accessibility and affordability of telecommunications services, devices, and training, demonstrating the state's commitment to digital equity on all fronts.

One of these initiatives began in 2021 when the state Legislature provided one-time funding to the WSBO to convene a Digital Equity Forum in partnership with the Washington State Office of Equity to develop recommendations for the Legislature to advance digital equity in Washington state. The forum includes representation by tribal governments, state agencies, and underserved and unserved communities, including historically disadvantaged communities.[133]

Washington State University (WSU) Extension represents another strong partnership for the state of Washington's efforts for digital equity, working with community residents, businesses, and organizations to establish regional Broadband Action Teams (BATs). BATs work with their local communities to increase their ability to provide better and more equitable access to reliable, high-speed internet. This collaboration has resulted in the creation of BATs in every county.

The BAT Implementation and Support project aids county and community broadband efforts with training, planning support, and resources coordinated through Extension offices to improve internet access in underserved, primarily rural communities. In 2022, the WSBO contracted with WSU Extension by providing funding to help counties and tribal nations develop locally created plans that identify needs and gaps in broadband coverage. BATs also provide funding support for local digital equity efforts.[134] Ultimately, these plans will better position communities to obtain broadband funding by advocating for projects that address their unique broadband benchmarks.

In addition to the state-facilitated initiatives mentioned above, **Table 13** below outlines some of the community-driven organizations and task forces across Washington state that are supporting digital equity initiatives. For more detail, please find a more extensive list of assets by covered population served located in the state's Digital Equity Plan.

[132]Washington State Legislature (2022) HB 1723. Accessed at: https://app.leg.wa.gov/billsummary?BillNumber=1723&Year=2021 [*Note: Washington uses the term "underserved population" in its state legislation.]*
[133] Washington State Legislature (n.d.), RCW 43.330.5395. Accessed at: https://app.leg.wa.gov/rcw/default.aspx?cite=43.330.5395
[134] Washington State Department of Commerce (August 15, 2022), WSU Extension, Commerce partner to expand rural broadband access, equity. Accessed at: https://www.commerce.wa.gov/news/wsu-extension-commerce-partner-to-expand-rural-broadband-access-equity/

Table 13: Examples of Organizations and Task Forces Supporting Digital Equity

Organization Name	Asset Description	Asset Type
The Connect Washington Coalition	A collaborative of digital access stakeholders across the state working to increase develop statewide strategies to improve digital access for Black, Indigenous, Communities of Color, low-income communities, students, and elders. It builds statewide strategies for digital equity, responding to our communities' urgent digital access needs, and working towards a Washingtonian where everyone has universal, affordable, and sufficient internet, devices, and the skills to participate in our communities.[135]	Community Task Force
The Digital Equity Forum	A forum that was established in 2021 through state legislation whose stated purpose is to develop recommendations to advance digital connectivity in Washington by engaging and collaborating with private, governmental, and community organizations.[136]	State Task Force
The Digital Equity Learning Network of Seattle & King County	A coalition for organizations to learn and exchange information about helping the community with digital equity.[137]	Coalition
The Equity in Education Coalition	A statewide coalition working towards a more targeted and comprehensive approach to improve educational achievement and growth as well as closing the opportunity gap throughout the State of Washington, particularly regarding digital equity.[138]	Coalition
King County Digital Equity Asset Map	An online map tracking digital literacy and inclusion resources in King County so that community members can locate programs related to digital skills training, access to affordable devices, and technical support.[139]	Digital Equity Asset Map
North Central Washington Digital Access and Equity Coalition (In partnership with: Community Health Network of Washington, Thriving Together NCW, and Bigfoot Telecommunications of the Colville Reservation)	The coalition is still in its early stage of development with a plan to fully launch Fall 2023. The initiative serves Chelan, Douglas, Grant, and Okanogan Counties and is funded by the WSBO.	Place-based Coalition

[135] Education in Education Coalition (2020), Connect Washington Coalition Proposal. Accessed at: https://eec-wa.org/wp-content/uploads/2020/09/Connect-Washington-Coalition-Proposal-2.pdf
[136] Washington State Legislature (2022), HB 1723. Accessed at: https://app.leg.wa.gov/billsummary?BillNumber=1723&Initiative=false&Year=2021
[137] City of Seattle IT (October 4, 2022), Online resources for Seattle residents. Accessed at: https://techtalk.seattle.gov/2022/10/04/online-resources-for-seattle-residents/
[138] Equity in Education Coalition (n.d.), Who We Are. Accessed at: https://eec-wa.org/who-we-are/
[139] Workforce Development Council of Seattle-King County (2023), Digital Equity Asset Map. Accessed at: https://www.seakingwdc.org/digital-equity-asset-map

As previously discussed in **Section 3.2.3**, **Table 11** identifies some digital equity programs that provide digital skills training and digital inclusion technical assistance and identifies whether the programs support a specific covered or underserved population.

In all, there are a myriad of state initiatives, digital skills and literacy training programs, community task forces, and community organizations that seek to advance digital equity throughout Washington state, and the WSBO intends to utilize every digital equity asset at its disposal to bridge the digital divide.

3.3 Needs and Gaps Assessment

Broadband plays an outsized role in current society, delivering both immense economic and social outcomes to individuals and communities. Consequently, individuals in locations currently served by broadband experience numerous benefits that remain unavailable to those living in unserved and underserved locations.

3.3.1 Needs and Gaps: Broadband Deployment

Although the state of Washington has made strides in providing funding to expand broadband deployment, large areas of the state remain unserved or underserved. The NTIA defines underserved locations as business or residential locations with broadband speeds less than 100 Mbps downstream and 20 Mbps upstream, whereas unserved locations have no broadband service available.[140] According to 2023 Federal Communications Commission (FCC) data, more than 236,000 households throughout the state are in unserved locations. **Table 14** shows the number of serviceable business and residential locations with no internet access in Washington.

Table 14: Number of Business and Residential Locations with No Internet Access

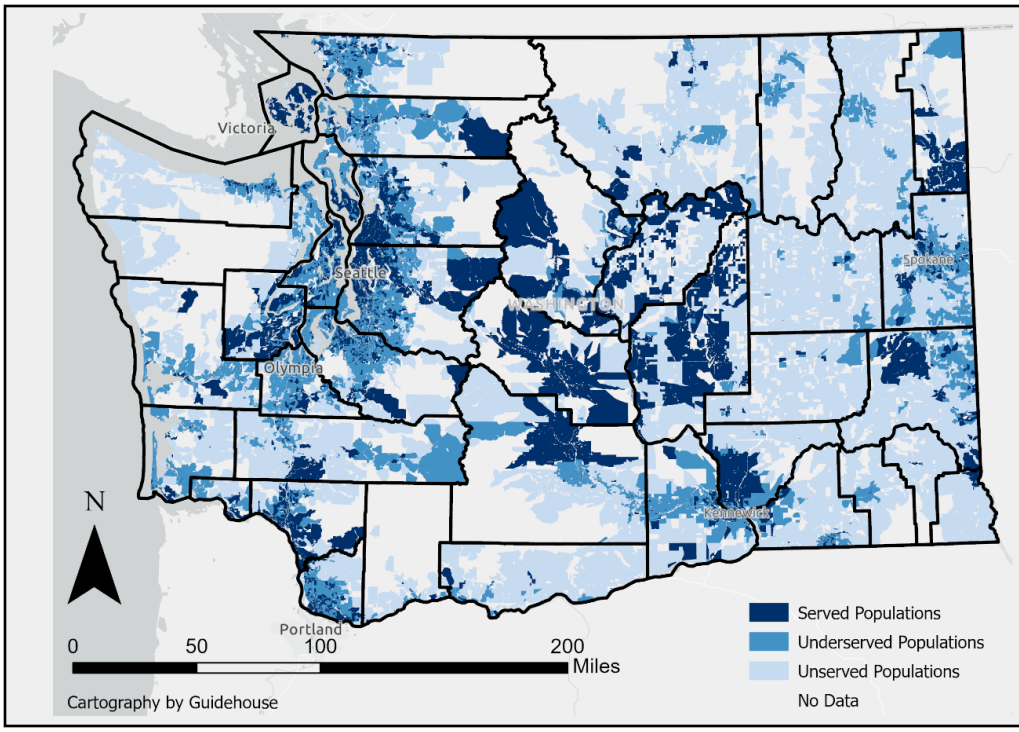
County	Unserved	Underserved	Served
Washington state	236,757	87,017	2,204,124
Spokane	17,754	8,008	156,885
Snohomish	14,801	5,940	230,164
Okanogan	14,385	1,592	6,567
Stevens	14,264	1,888	7,614
Pierce	12,044	5,325	265,442
Clark	11,714	5,332	144,086
Whatcom	11,647	1,962	70,196
Clallam	10,457	2,420	23,019
Lewis	10,249	7,928	18,361
Whitman	7,328	855	11,504
Thurston	7,267	3,306	94,337
Skagit	7,177	1,379	43,291

[140] NTIA (2022), BEAD NOFO. Accessed at: BEAD NOFO.pdf (doc.gov)

County	Unserved	Underserved	Served
Cowlitz	6,379	2,269	33,982
Kittitas	6,325	4,647	11,958
Lincoln	6,092	1,551	52
King	6,019	6,074	585,273
Kitsap	5,732	1,396	89,567
Mason	5,711	741	28,424
Klickitat	5,678	1,677	4,105
Grant	5,262	1,845	31,837
Jefferson	5,075	857	12,375
Island	5,018	749	33,351
Pend Oreille	4,265	15	4,290
Adams	3,973	405	3,182
San Juan	3,952	342	7,669
Grays Harbor	3,852	732	32,009
Yakima	3,818	5,314	73,847
Chelan	3,680	535	30,086
Skamania	3,345	562	1,732
Ferry	2,872	600	1,205
Pacific	2,870	389	13,858
Franklin	2,109	2,659	23,675
Douglas	1,553	255	14,965
Benton	954	3,631	63,433
Wahkiakum	805	95	1,607
Columbia	678	418	1,558
Garfield	677	19	884
Walla Walla	515	2,815	19,173
Asotin	461	490	8,561

Source: Analysis of FCC broadband data as of June 2023.

Even urban counties which overall are comparatively well served do still have underserved locations, which become especially apparent when looking at the distribution of unserved and underserved locations throughout the state, as **Map 14** shows. Although some rural areas, particularly in central Washington are considered served, large swathes of the state's rural areas contain unserved and underserved locations with the additional challenge of having relatively low population densities.



Map 14: FCC Service Levels by Census Block as of May 2023

Source: Analysis of FCC data as of May 2023.

EXPANSION OF BROADBAND HARD ASSETS

Although the state already has an extensive broadband network owned and operated by public and private organizations, this network will need to be further expanded to reduce the number of unserved locations. However, simply extending off existing broadband infrastructure may not result in complete coverage with 100/20 Mbps broadband speeds for all households. Grid resiliency will play a big factor in determining the network's reliability. As the state begins adding onto existing broadband infrastructure to increase the number of connections and broadband subscriptions, the accompanied increase in usage will take up more of the network's bandwidth, resulting in slower network speeds.[141] As a result, the state will need to increase the bandwidth of its broadband backbone and middle mile networks to keep up with the increase in traffic and to provide long-term capacity.

Ensuring that projects have a longevity of 20 years will be made more difficult by anticipated climate changes. New construction projects will need to be built according to climate forecasts that predict hotter drier weather — increasing the likelihood of wildfires — along with periods of intense rainfall and wind. Both will play a large part in determining how to deploy new broadband

[141] CBG Communications, Inc. (June 27, 2008), Broadband Study Report Prepared for the Washington Utilities and Transportation Commission. Accessed at: Broadband Study Report,

infrastructure, particularly fiber lines, in areas with a greater risk of being impacted. Many times, the areas with the greatest risk of impact are rural areas that lack broadband altogether. Ultimately, there is a need to ensure that broadband constructed with BEAD funding will be resilient in the face of climate change.

Adequate oversight will be vital to ensure that construction projects fulfil the NTIA's requirement that all new or retrofitted infrastructure have the expected lifetime of 20 years. During several engagement events, individuals and organizations discussed local broadband construction projects that were completed incorrectly or poorly, requiring newly installed network lines be taken back up and replaced. Such issues prevent individuals from taking full advantage of broadband's benefits and the duplicative construction efforts take money away from other broadband infrastructure projects. Administering BEAD funding through the WSBO will allow for better monitoring of these local projects, while also providing technical assistance and administrative support to bolster project management and oversight.

In addition to ensuring a robust backbone and middle mile network, supporting the development of last mile connections in unserved and underserved areas is a primary focus of the BEAD program. This can be one of the more complex and challenging parts of deploying broadband because it depends on the participation of the end-user. Since these projects bring broadband directly to a designated location, the navigation of individual property geographical conditions, while trying to minimize disruptions, may add to costs, especially if a wired technology is deployed, even if that technology would provide the highest speed and reliability for end users. One example of a last mile project is the installation of service drops, wherein an ISP installs cables to residences for service. Although this may seem straight forward, organizations discussed the high cost to install this final step in establishing broadband access at several public engagement events. In one instance, an ISP indicated that the cost to install a service drop from the street to a customer's door can cost $1,500 or more per location. Covering the capital cost of last mile connections is a known need for broadband service for many low-income households, demonstrating a need for Washingtonians that BEAD funding can help address.

Furthermore, many areas of the state, particularly in rural counties, do not have ISPs available to perform last mile projects — such as connect households and businesses to the broadband network — exposing an additional gap in broadband deployment.[142] The lack of ISPs impacts broadband availability in two ways: it means that there is less private investment being used to improve and expand broadband networks, and it leaves consumers without a way to connect to a network, even if all other infrastructure exists. The absence of ISP options may also increase risk of losing services, which may impact the delivery of vital services. In some public engagement activities, rural healthcare organizations expressed a need for additional ISPs to ensure they have redundant broadband service. For healthcare organizations, redundancy would allow them to provide critical telehealth services and run some of their electronic medical records software, even if one ISP in the area loses service. More information on current ISP service areas would help to identify areas without an ISP or locations vulnerable to service disruptions. Unfortunately,

[142] WSBO (January 2021), State Broadband Office 2020 Report. Accessed at: https://www.commerce.wa.gov/wp-content/uploads/2021/04/032921-2020-WA-State-Broadband-Report-FINAL.pdf

a centralized data source for this information does not exist, making it difficult to collect and assess this information and exposing a gap in broadband deployment efforts.

Finally, state law recently changed to allow Public Utility Districts (PUDs) and port authorities to offer retail broadband services, which may increase the number of available ISPs in areas with limited or no alternatives. Additionally, electric cooperatives located in parts of the state may also decide to provide broadband to its members if the membership agrees to include the service. However, many of these organizations have decided to not provide broadband due to the costs and service responsibilities for providing retail services.

BROADBAND WORKFORCE

The increase in construction projects and the expansion of ISPs required to address the needs and gaps described above will undoubtedly put a large strain on the state's existing broadband workforce. For more information, an assessment of Washington state's workforce gaps and paths forward can be found in Washington state's workforce plan located in **Appendix 7.7**.

3.3.2 Needs and Gaps: Broadband Adoption

The first step in identifying the needs and gaps impacting broadband adoption is understanding current broadband adoption rates and the availability of internet-capable device access across Washington counties. In this Plan, the WSBO has measured adoption rates across the state by assessing the percentage of households with broadband subscriptions using American Community Survey (ACS) data, as broadband subscription rates provide a strong proxy for adoption rates within a given geographic area.[143] For this survey, the ACS identified households with an internet subscription if a respondent indicated "yes" when asked if "any member of the household accessed the internet by paying a cell phone company or Internet service provider."[144] It is important to note that within ACS 2021 data for the percent of households with a broadband subscription of any type, internet subscriptions through cellular data plans are included. Therefore, **Table 15** below shows both the total percent of households with a broadband subscription of any type and the percent of households using only a cellular data plan to access the internet. In San Juan County, for example, 89% of households have a broadband subscription, but 21% of those subscriptions are attributed solely to cellular data plans.

Despite the statewide subscription rate average being 91%, only ten of the state's 39 counties have household broadband subscription of 90% or greater, according to the ACS data. Conversely, the counties with the greatest broadband adoption need are Klickitat, Whitman, Douglas, Lewis, Adams, Okanogan, Lincoln, Skamania, Garfield, Wahkiakum, Stevens, Pend Oreille, Columbia, and Ferry counties, in order of ascending need. It is also important to note that urban counties with some of the highest broadband subscription rates – such as King, Pierce, Snohomish, and Spokane – also have the highest number of households without internet subscription. This demonstrates that even counties with higher average rates of broadband adoption have residents with need, whether it is related to affordability or digital literacy concerns.

[143] It is important to clarify that broadband service – also known as high-speed Internet access – allows residential and business consumers to access the Internet and Internet-related applications and services at significantly higher speeds than those typically available through "dial-up" Internet access services.

[144] U.S. Census Bureau (n.d.), Computer and Internet Use. Accessed at: https://www.census.gov/quickfacts/fact/note/US/INT100221

Table 15: Broadband Subscription Rates by County[145]

County	Percent of Households with a Broadband Subscription of any Type	Percent of Households with Cellular Data Plan (No Other Type of Internet Subscription)	Number of Households without Internet	Total Number of Households
Washington state	91%	9%	247,889	2,931,841
Kitsap	94%	7%	6,313	104,977
King	94%	7%	56,258	902,308
Snohomish	93%	8%	20,907	302,970
Island	93%	8%	2,433	35,102
Clark	93%	9%	13,102	184,173
Pierce	92%	9%	27,242	335,969
Thurston	92%	8%	9,380	114,556
Skagit	91%	12%	4,451	50,540
Franklin	91%	14%	2,598	27,721
Whatcom	90%	10%	8,546	89,865
Spokane	90%	10%	20,957	209,640
Mason	89%	10%	2,617	25,085
Clallam	89%	11%	3,435	33,636
Benton	89%	9%	8,121	74,290
San Juan	89%	21%	865	8,378
Kittitas	88%	9%	2,202	18,772
Walla Walla	88%	10%	2,724	22,842
Grant	88%	14%	3,942	32,803
Jefferson	88%	9%	1,832	15,497
Pacific	88%	12%	1,144	9,878
Cowlitz	87%	10%	5,324	42,776
Grays Harbor	87%	13%	3,797	29,319
Asotin	86%	16%	1,174	9,287
Chelan	86%	9%	4,070	29,474
Yakima	86%	15%	11,480	84,636
Klickitat	85%	15%	1,296	9,332
Whitman	85%	8%	2,705	18,010

[145] American Community Survey (2021), S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]. Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]

County	Percent of Households with a Broadband Subscription of any Type	Percent of Households with Cellular Data Plan (No Other Type of Internet Subscription)	Number of Households without Internet	Total Number of Households
Douglas	84%	9%	2,419	15,278
Lewis	84%	12%	4,840	31,223
Adams	83%	21%	1,023	6,158
Okanogan	83%	13%	2,727	16,630
Lincoln	83%	15%	720	4,440
Skamania	83%	10%	785	4,723
Garfield	82%	10%	185	1,004
Wahkiakum	82%	7%	342	1,891
Stevens	80%	14%	3,434	18,222
Pend Oreille	78%	13%	1,229	5,653
Columbia	75%	10%	441	1,849
Ferry	71%	12%	829	2,934

Another important aspect of broadband adoption is related to the availability of devices, such as a computer, smartphone, tablet, or other computing device, as **Tables 16 and 17** describe. Here, the 2021 ACS shows that 96% of households in Washington state have one or more types of computing device, while 4% of households do not have access to a computing device. Within those statistics, it is interesting to note that almost 7% of all households in Washington exclusively own a smartphone and as many as 15% of households do not have a desktop or laptop computer. The tables below visualize device access in Washington across households.

Table 16: Device Access in Washington – Summary[146]

2,931,841 Total Households	Has one or more types of computing devices	No computer
Number of Households	2,803,456	128,385
Percent of Total Households	96%	4%

[146] American Community Survey (2021), S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]. Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]

Table 17: Device Access in Washington – Detailed Attribution[147]

Device	Households	Percent of Total Households
Has one or more types of computing devices:	2,803,456	96%
Desktop or laptop	2,500,224	85%
Desktop or laptop with no other type of computing device	109,716	4%
Smartphone	2,619,200	89%
Smartphone with no other type of computing device	173,286	6%
Tablet or other portable wireless computer	1,995,438	68%
Tablet or other portable wireless computer with no other type of computing device	19,528	1%
Other computer	72,749	3%
Other computer with no other type of computing device	757	0%

The tables above provide an overview of Washington state's device access. A more detailed analysis of device access by county is shown below in **Table 18**.

Table 18: Device Access by County[148]

County	Percent of Households with One or More Types of Computing Devices	Households with No Computers	Total Number of Households
Washington state	96%	128,385	2,931,841
King	97%	28,176	902,308
Kitsap	97%	3,400	104,977
Snohomish	97%	10,126	302,970
Clark	96%	6,640	184,173
Franklin	96%	1,209	27,721
Island	96%	1,359	35,102
Kittitas	96%	695	18,772
Pierce	96%	13,604	335,969
San Juan	96%	308	8,378
Thurston	96%	5,039	114,556
Whatcom	96%	4,068	89,865
Whitman	96%	701	18,010

[147] American Community Survey (2021), S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]. Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]
[148] American Community Survey (2021), S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]. Accessed at: ACS Data: S2801 Types of Computers and Internet Subscriptions [5 Year Estimates]

County	Percent of Households with One or More Types of Computing Devices	Households with No Computers	Total Number of Households
Asotin	95%	508	9,287
Benton	95%	3,507	74,290
Skagit	95%	2,680	50,540
Columbia	94%	111	1,849
Lincoln	94%	264	4,440
Spokane	94%	11,880	209,640
Walla Walla	94%	1,307	22,842
Chelan	93%	1,974	29,474
Clallam	93%	2,368	33,636
Cowlitz	93%	3,119	42,776
Grant	93%	2,350	32,803
Klickitat	93%	644	9,332
Mason	93%	1,762	25,085
Pend Oreille	93%	393	5,653
Wahkiakum	93%	126	1,891
Douglas	92%	1,164	15,278
Grays Harbor	92%	2,497	29,319
Jefferson	92%	1,208	15,497
Lewis	92%	2,418	31,223
Okanogan	92%	1,405	16,630
Yakima	92%	7,043	84,636
Pacific	91%	855	9,878
Skamania	90%	470	4,723
Stevens	90%	1,811	18,222
Adams	89%	681	6,158
Garfield	89%	106	1,004
Ferry	86%	409	2,934

Overall, Washington state has a relatively high percentage of households with one or more types of computing devices; however, certain counties are lagging the state average. Specifically, Garfield, Adams, and Ferry counties all have a larger than average percentage of households without a computing device, with 10% or more lacking access.

As a response to the COVID-19 pandemic, hotspot and laptop device programs for schools and libraries increased and helped many students and parents continue to participate in online classes, to complete homework assignments, and attend parent meetings.[149] Additionally, in 2022, a survey conducted on behalf of the Digital Equity Forum found that twenty percent of respondents noted that the provision of free or low-cost internet accessible devices would improve their access to the internet.[150] Additional resources will however be needed to continue to support large scale take-home device programs as pandemic-related aid funding winds down. For example, conversations with Washington State Librarians and demonstrated in the 2023 Washington Digital Skills Gap Assessment, there is consistent community need for greater device access programming.[151] Continuing these programs to provide devices for those who may not otherwise have broadband access will be important when considering BEAD funding allocations, as the hotspot and device programs give previously unconnected Washingtonians access to the digital economy and society.

General note on device access statistics

Urban high population counties may appear to have the highest percentage of households with computing devices, but given their relatively large population, they have the highest absolute number of households without devices. For example, even though King County has the highest percentage of households with one of or more computing devices, it also has the highest number of households without computers at ~28,000. In comparison, Ferry County, which has the lowest percentage of households with one or more computing devices at 86%, only has ~400 households with no computer.

Although great strides and progress have been made to increase digital literacy across Washington – particularly with digital navigators – there is still more work to be done to provide all Washingtonians with the skills to navigate the internet. Throughout public engagement sessions coordinated by the WSBO across the state of Washington, diverse stakeholders came together to discuss challenges facing universal broadband adoption. A recurring challenge to broadband adoption – in addition to lack of broadband service or internet-capable device – is a lack of digital literacy. Despite the presence of digital navigator programs, digital skills training from libraries, and other programs, certain residents and communities still face digital literacy challenges. As noted by the Spokane Tribe in its Community Action Plan, there are limited digital literacy and adoption resources, compounded by a lack of community awareness and outreach about the availability and benefits of digital literacy resources.[152] According to the 2023 Washington Digital Skills Gap Assessment, digital navigators working within communities identified a shortage of digital navigation and other support programs. Specifically, they identified the lack of additional resources to support programs already working well in communities as a

[149] Washington Office of Superintendent of Public Instruction (2022), Annual State Technology Survey. Accessed at: https://www.k12.wa.us/policy-funding/school-technology/annual-state-technology-survey
[150] Washington State Department of Commerce (2023) Digital Equity Forum Report. Accessed at: CommerceReports_2022_LGD_Digital Equity Forum_Final_4.4.23.pdf | Powered by Box
[151] Equity in Education Coalition and Washington State Library (2023), Unveiling the Divide. Accessed at: https://washstatelib.libguides.com/ld.php?content_id=72138539
[152] Spokane Tribe (2023), Community Action Plan. Accessed at: Spokane_Tribe_of_Indians_Community_Action_Plan.pdf

gap to greater access. Overall, "the sentiment among digital navigators is that while they are seeing a great deal of success, they are challenged by funding and capacity."[153]

The sentiments expressed by digital navigators also relate to concerns that were expressed by participants at listening sessions related to safety and security concerns when online. Vulnerability to scams and fraud through email, text, website popups were mentioned repeatedly, and while safety for seniors may be a more well-known issue, there are internet safety concerns across all age groups which may prevent people from fully benefiting from online resources. A recent assessment from the Washington State Library on digital skills for historically underserved communities – overlapping with covered populations plus others – confirmed these concerns.[154] In particular, one respondent expressed the desire for "Access to more schooling through legitimate sources. If I want to learn something for work, it's hard to figure out what's a scam vs. what can help."

There is also an identified need for multilingual technical support for services and training. As the state has become increasingly diverse, there is a greater need to conduct broadband adoption activities in multiple languages. Given the extent of linguistic diversity in the state, it is possible that not all ISPs have a comprehensive language access plan. In Seattle alone, Seattle Public Schools has documented over 160 languages spoken at home by students and their families.[155] Without sufficient language access support, there are communities who may struggle to adopt internet services because they cannot complete application forms or do not have translated materials. For example, during one of the WSBO's virtual listening sessions, one participant referenced a family member who had applied for the Affordable Connectivity Program (ACP). However, because they did not understand the text verifications that were being sent to them in English, the enrollment process took longer than anticipated to complete.

Aside from household adoption gaps, there are also identified adoption gaps for businesses. Some small businesses are unaware of the benefits of online growth, having an online presence, or participating in e-commerce. Moreover, small business owners may not own the devices or possess the digital skills to set up internet in their establishments. One example of this comes from a listening session in Spokane. During the session, a participant shared that many of the small businesses owned by immigrants were operating from just a cell phone. If the business line is busy, there is the potential for missed revenue due to unanswered orders.

Ultimately, a lack of internet-capable devices, low broadband subscription rates, language accessibility barriers, and limited digital literacy present significant gaps for broadband adoption.

[153] Equity in Education Coalition and Washington State Library (2023), Unveiling the Divide. Accessed at: https://washstatelib.libguides.com/ld.php?content_id=72138539
[154] Washington State Library (2023), Digital Skills Assessment. Accessed at: https://washstatelib.libguides.com/c.php?g=1323079&p=9735305
[155] Seattle Public Schools (n.d.), Honoring Home Languages. Accessed at: https://www.seattleschools.org/departments/multilingual/honoring-home-languages/#:~:text=Celebrate%20home%20languages%20with%20us,by%20families%20across%20the%20district

3.3.3 Needs and Gaps: Broadband Affordability

In identifying the affordability assets related to broadband adoption in this Plan, multiple needs and gaps have been uncovered. One of the most important contributors to affordability for low-income Washingtonians is the ACP. Unfortunately, according to a January 2023 Benton Institute for Broadband & Society survey of low-income households nationwide, more than 50% had never heard of the program or do not know about its benefits, more than a year after it began.[156] This national trend is replicated in Washington state and presents a critical gap for broadband affordability. According to the Universal Service Administrative Co. ACP Enrollment and Claims Tracker, Washington has an estimated 1,125,000 eligible households, however, less than 290,000 are currently enrolled.[157] Unfortunately, this 26% statewide adoption rate is below the national average of 38%.[158]

As heard through public engagement listening sessions and focus groups conducted by the WSBO, lack of awareness is the primary barrier to ACP participation. This signals a need for the state to increase recognition of the ACP and direct resources towards outreach programs and initiatives that spread awareness of the ACP in low-income households, which will require coordination amongst multiple stakeholders. In filling this awareness gap, outreach programs should focus on recruiting staff and volunteers from the communities they serve. Collaborating with trusted local institutions and communities and leveraging participation in other social programs will increase ACP awareness, ultimately increasing affordability. For example, the King County Housing Authority was awarded $171,263 in an *ACP Your Home, Your Internet Pilot Program* grant to support ACP outreach and application support to recipients of federal housing assistance.[159] Replicating this grant strategy for housing authorities across the state may increase awareness of the ACP for Washingtonians in need.

In addition to spreading awareness through trusted community partners, ACP outreach can take a variety of forms. According to a Benton Institute report, optimal outreach methods may vary by race, suggesting that the state could benefit from conducting more tailored outreach. Specifically, the report found that:

"While email ranked significantly higher than text messages for White respondents, the two methods were about equal for Hispanics – but text was preferred among African Americans. Around 18% of households selected social media as the type of contact method they were most likely to respond to. Perhaps surprisingly, physical mailers ranked relatively high among Hispanic households. African American households, however, showed a preference for local TV or radio spots over mailers."[160]

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[156] Benton Institute for Broadband and Society (March 17, 2023), Half of ACP-Eligible Households Still Unaware of the Program. Accessed at: https://www.benton.org/blog/half-acp-eligible-households-still-unaware-program?utm_campaign=Newsletters&utm_source=sendgrid&utm_medium=email

[157] Universal Service Administrative Co. (July 2023), ACP Enrollment and Claims Tracker. Accessed at: https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/#enrollment-by-state

[158] Institution for Local Self-Reliance (June 24, 2023), "Affordable Connectivity Program". Accessed at: ACP Dashboard

[159] Council of Large Public Housing Authorities (March 29, 2023), 15 CLPHA Members Receive FCC Grants Totaling Over $4 Million to Help Advance Digital Equity in Their Communities. Accessed at: https://clpha.org/news/2023/15-clpha-members-receive-fcc-grants-totaling-over-4-million-help-advance-digital-equity

[160] Benton Institute for Broadband and Society (March 17, 2023), Half of ACP-Eligible Households Still Unaware of the Program. Accessed at: https://www.benton.org/blog/half-acp-eligible-households-still-unaware-program?utm_campaign=Newsletters&utm_source=sendgrid&utm_medium=email

Using targeted outreach methods to reach low-income households eligible for the ACP may increase the number of Washingtonians registering for the program, thereby lessening the cost burden of broadband services, and addressing an important affordability gap.

It is worth noting that ACP funds are forecasted to run out sometime in mid-2024, and Congress has not yet allocated additional funding. This has sparked sustainability concerns around how to continue providing subsidies for low-income households to support broadband access and assistance with purchasing digital devices.[161] At the state level, additional funding mechanisms may be required to fill the gap if ACP funding runs out. This would require state funding to support the subsidy program and any outreach and awareness building activities. Local and tribal government entities and ISPs may also need to leverage public-private partnerships and alternative funding mechanisms to close potential gaps in federal funding.

An additional affordability gap concerns the lack of state funding to subsidize affordability programs related to broadband service, devices, and digital literacy training, with Washington state currently relying on federal programs such as the ACP and Lifeline to increase affordability. Although there are local affordability programs in place, allocating state funding for low-income households to reduce broadband costs would allow for greater adoption of broadband services. Currently, most U.S. households pay an average of $75 per month for fixed internet service. Assuming the ACP participant does not live on tribal lands, even with the ACP subsidy of $30 per month, there may still be a remaining balance for the fixed service fee. According to the same Benton Institute survey referenced above, the median figure cited for fixed broadband service for low-income households nationwide was still $40 per month with the ACP subsidy applied.[162]

3.3.4 Needs and Gaps: Broadband Access

Washington has several broadband access assets in place, but there are still access-related needs and gaps that could help further increase broadband adoption. Therefore, this section addresses these needs and gaps by focusing on how residents, communities, and businesses can publicly access the internet using a public Wi-Fi network or a cellular network.

Updating and improving upon the Public Wi-Fi Access Spot map mentioned in **Section 3.2.4** to include the presence of public device access would help improve broadband access to communities without devices. Currently there is no state-sponsored central inventory of public access points inclusive of public device access, despite the presence of publicly accessible Wi-Fi and devices for loan at public libraries across the state. A centralized resource that would allow residents to search for local public access options and where they could borrow devices would help connect those in need of public broadband resources to existing accessibility assets.

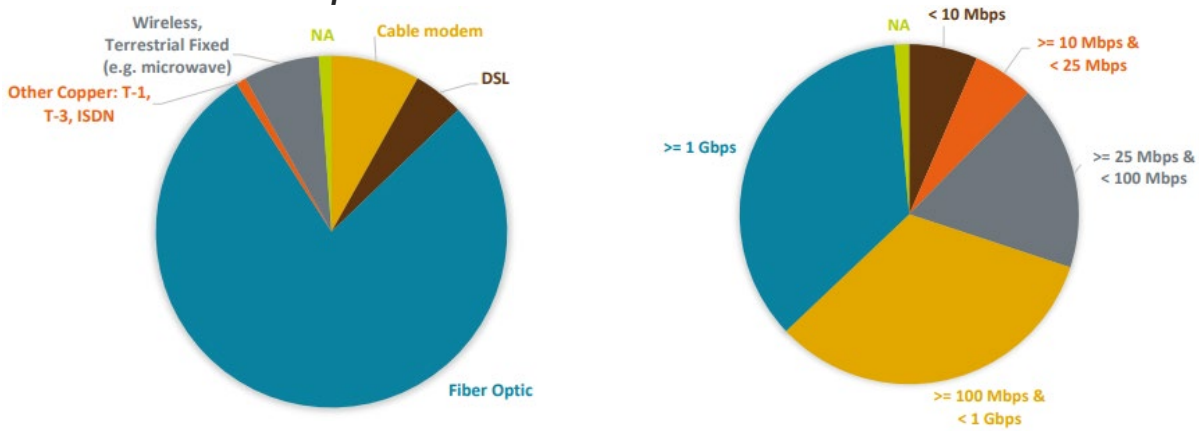
In addition to establishing a more robust, up to date, centralized resource of public Wi-Fi device and access spots, certain geographic regions across Washington state have fewer public access points than others. There is a particular disparity in access between urban and rural regions, with more public access spots present in urban areas. Due to the gap in the provision of public Wi-Fi

[161] Institute for Local Self-Reliance (2023), Affordable Connectivity Program Dashboard. Accessed at: https://public.tableau.com/views/ACPDashboard-Iteration4/Dashboard-IT4?:showVizHome=no
[162] Benton Institute for Broadband and Society (March 17, 2023), Half of ACP-Eligible Households Still Unaware of the Program. Accessed at: https://www.benton.org/blog/half-acp-eligible-households-still-unaware-program

and internet-capable devices in rural parts of the state, particular attention can be paid to expanding access in CAIs – such as, libraries, schools, or community centers – while also expanding the CAI definition to include other community organizations, such as places of worship. In several focus groups, for example, the importance of temples was emphasized as a trusted source of information, community resources, connecting multiple generations, and getting assistance for activities like digital navigation. Offering public Wi-Fi in more community anchor institutions – like temples and other places of worship – can help residents connect their devices and with informal digital navigators. As noted in the Makah Tribe Community Action Plan, tribal students faced challenges after the Washington Office of Superintendent of Public Instruction announced plans for all schools in Washington state to administer the Measure of Student Progress online.[163] Administering a test online required schools to have a reliable broadband connection, and the lack of a high-speed connection at the Neah Bay Schools meant that participating students had to bus over 20 miles to Clallam Bay. Thankfully, the Makah Tribe was able to deploy a connection to the schools via a microwave link from a NoaNet fiber backbone located on the Lower Elwha Reservation, but this situation is symptomatic of a common gap in broadband access.

Public libraries also play a significant role in providing broadband service and internet connectivity throughout the state. Yet, despite being a key CAI, not all public library branches have broadband service, and the majority do not meet future state speed goals. Currently, there are 429 public library branches that all serve an essential role in connecting communities and businesses across the state. However, only 78% of public libraries are connected to the internet by fiber optic infrastructure, as **Figure 6** shows. Consequently, only two-thirds of libraries boast download speeds greater than 100 Mbps, with 7% of branches reporting less than 10 Mbps and only 36% meeting the state 2026 goal of 1 Gbps.[164]

Figure 6: Broadband Delivery Technology Used to Connect All Libraries Within the State and Their Download Speeds[165]



[163] Makah Tribe (2023), Community Action Plan. Accessed at: Makah_Tribe_Community_Action_Plan.pdf | Powered by Box
[164] WSBO (January 2021), 2020 Washington State Broadband Report. Accessed at: 2020 Washington State Broadband Report
[165] WSBO (January 2021), 2020 Washington State Broadband Report. Accessed at: 2020 Washington State Broadband Report

Therefore, increasing broadband speeds at public libraries is necessary to meet state goals while providing community access to residents without high-speed, reliable access to the internet.

Finally, many participants in public engagement sessions have described a gap between the broadband speeds that consumers are paying for and the speeds that are being delivered by ISPs. One example of this phenomenon is illustrated in the Broadband Study Report prepared for the Washington Utilities and Transportation Commission.[166] The Broadband Study Report details how customers of both the cable modem and the wireless service of the TV Association of Republic in Ferry County experience very slow internet access during peak times of the day, which the TV Association of Republic attributed to a slow backbone connection. Ultimately, a provider can offer an extremely high-speed distribution network, but if the link to the internet is slow, the network is far less effective. Without a sufficient network backbone into a given area, building a distribution network to offer broadband services will not be successful.

3.3.5 Needs and Gaps: Digital Equity

The state of Washington is concurrently developing a Digital Equity Plan, which will provide a more in-depth analysis of any needs and gaps related to digital equity across the state and by covered population. In consultation with local BATs, the Digital Equity Forum, digital navigators, and other digital equity collaborators identified in **Section 3.2.5**, the WSBO will seek to address the needs and gaps identified in the Digital Equity Plan.

To provide a brief overview of what will be discussed in the Digital Equity Plan, the following are digital equity needs and gaps as identified in various stakeholder engagement sessions:

- The need to increase workforce development training and employment services related to broadband deployment and adoption.
- The lack of a statewide plan to increase participation in the digital economy by communities who are traditionally disengaged (covered populations).
- The need for more resources to support digital inclusion through community organizations or digital navigators and limited on the ground or in-person resources to conduct outreach and provide digital skills training.
- Challenges effectively coordinating with community-based organizations, CAIs, digital inclusion and equity coalitions, state agencies, local community champions, tribal leaders, and federal landowners. Given the large number of entities participating in digital equity efforts, coordination can be an onerous task, with many different actors and organizations conducting similar digital equity efforts.
- Inadequate provision of internet capable devices that contain tools to ensure Washingtonians stay safe online, such as the provision of antivirus software.

[166] CBG Communications, Inc. (June 27, 2008), Broadband Study Report Prepared for the Washington Utilities and Transportation Commission. Accessed at: https://www.utc.wa.gov/sites/default/files/2021-02/Final%20Report%20on%20the%20Broadband%20Study%20%286-28-08%29PDF.pdf

- Increasing opportunities for engagement "meet people where they are" engagement, both physically and figuratively. This relates to mobile services that travel to areas with greatest broadband affordability, access, or adoption needs and it relates to digital skills training that meets participants at their current skill level.
- A decrease in the amount of reliable funding for digital equity programs across Washington state, particularly as it relates to operational budgets as federal funding is often infrequent and limited.

In addition to the broader thematic digital equity needs and gaps detailed above, it is important to consider specific needs related to healthcare services, education, and covered populations. For example, certain rural hospitals and clinics are unable to have redundancy in their internet service creating a risk if there is a network outage, or to afford the expensive equipment and software required to digitize health records, creating gaps for patients who may need electronic health records transferred to other clinics. Additionally, digital equity gaps exist related to the provision and utility of telehealth. For rural communities with limited broadband service, it can be difficult for patients without internet to connect virtually with a provider for a follow-up appointment. During public engagement sessions in lower population density areas, many participants mentioned difficulties they had faced accessing healthcare virtually due to slow or no internet connection or because they do not own internet-capable devices. It is also important to mention digital equity needs that relate to covered populations. Some veterans, for instance, may struggle to access services and support provided by the Veterans' Affairs Department due to digital inequity.

Regarding education needs and gaps, the COVID-19 pandemic illuminated how the digital divide can impact K-12 and university education, with certain students unable to participate in school due to unreliable or nonexistent internet connection or because they could not afford a computer. In an interview with the Washington Office of Superintendent of Public Instruction, representatives noted that classroom teachers and support staff across the state are aware of students with a lack of, or limited, access to the internet, which ultimately impacts their ability to participate in school. The theme of educational challenges spawned from limited internet access was a recurring point of concern for most public engagement participants across Washington.

Washington's Digital Equity Plan will expand upon the themes detailed above, providing a more comprehensive overview of the needs and gaps associated with digital equity across the state, in addition to a strategic plan to address the digital divide.

4. OBSTACLES OR BARRIERS

As Washington state outlines its implementation strategy to achieve universal broadband service, assessing obstacles or barriers is key to success. This section discusses barriers that impact broadband expansion throughout the state. Barriers are wide ranging from financial to regulatory and technical. While this Chapter presents the challenges to universal access goals, and strategies to address these barriers are discussed in **Chapter 5**.

To ensure that local perspectives on broadband deployment, access, adoption, affordability, and digital equity obstacles are included in this Plan, the Washington State Broadband Office (WSBO) looked to recently published Community Action Plans. These Community Action Plans were coordinated by Washington State University-Extension and local Broadband Action Teams (BATs) to offer insight into the strategies that counties across the state are taking to deploy broadband infrastructure and increase digital equity. Broadly, the county and federally recognized tribal nations' Community Action Plans described similar barriers impacting broadband deployment, as **Figure 7** illustrates.[167]

Figure 7: Common Terms Counties and Tribes Used When Describing Broadband Deployment Barriers in Their Community Action Plans

Source: Word cloud analysis of Community Action Plans

[167] In addition to the 12 tribes that submitted independent Community Action Plans, four tribes partnered with counties in developing a Community Action Plan. In total, 16 tribes participated. Additional information about tribal Community Action Plans in **Appendix 7.2.**

More specifically, the following themes emerged:

- Low population density makes it difficult to incentivize broadband deployment.
- Ongoing costs for maintenance, pole costs, etc., after grant-funded expansion are cost-prohibitive.
- Challenging terrain, including mountains, heavy tree cover, and waterways, limits the number of viable pathways for broadband construction and greatly increases costs.
- The high cost of installing middle mile and underground infrastructure create financial gaps in infrastructure investment.
- Staffing capacity required to apply for and administer grant funding, along with other administrative costs or direct costs – such as obtaining cost estimates, completing GIS work, among others – for required to submit grant applications can prevent smaller public and private organizations from applying for broadband funding.

The remainder of this Chapter will focus on illustrating the obstacles and barriers to achieving universal broadband service. For more detailed information, **Appendices 7.3 and 7.4** provide a sampling of the obstacles and barriers cited in each county and tribal Community Action Plan.

4.1 *Barrier: Return on Investment for Internet Service Providers*

One of the biggest challenges facing broadband expansion in Washington state is the lower return on investment in rural and underserved areas. Demand drives investment in infrastructure, and the demographic and geographic constraints in underserved or rural regions make it challenging for internet service providers (ISPs) to justify the economics of expansion.[168] Higher costs either require ISPs to charge a premium for service to get a return on investment – which can ultimately deter end users from subscribing – or forgo expansion in such areas altogether. In stakeholder interview sessions, low return on investment was cited as a reason that ISPs decided not to bid on broadband expansion projects in underserved areas. Additionally, low return on investment was mentioned multiple times as a barrier to entry for underserved markets in stakeholder engagement activities with ports, public utility districts and private ISPs.

This is one area in particular where BEAD funding can directly impact broadband deployment by offsetting some of the higher deployment costs ISPs face, thereby making the returns on investments for these projects more appealing. Moreover, the construction of projects that otherwise would not have been completed also makes additional network expansion more compelling, considering that using existing infrastructure reduces the overall deployment costs compared to the need to build networks from scratch, as discussed in **Section 3.2.1.**

Population Densities for Rural Washington Counties (persons/sq. mi.)

Garfield	–	3.24
Ferry	–	3.31
Columbia	–	4.55
Lincoln	–	4.81
Skamania	–	7.24
Okanogan	–	8.17
Pend Oreille	–	9.80
Adams	–	11.01
Klickitat	–	12.42
Wahkiakum	–	17.31
Jefferson	–	18.53
Stevens	–	19.12
Kittitas	–	20.59
Whitman	–	22.28
Douglas	–	24.46
Pacific	–	25.47
Chelan	–	27.90
Lewis	–	34.99
Asotin	–	35.61
Grant	–	38.55
Grays Harbor	–	40.49
Clallam	–	44.90
Walla Walla	–	49.68
Yakima	–	60.82
Mason	–	69.82
Skagit	–	76.29
Franklin	–	81.43
Cowlitz	–	99.02
San Juan	–	105.51
Island	–	422.83

Source: Office of Financial Management data as of April 1, 2023.

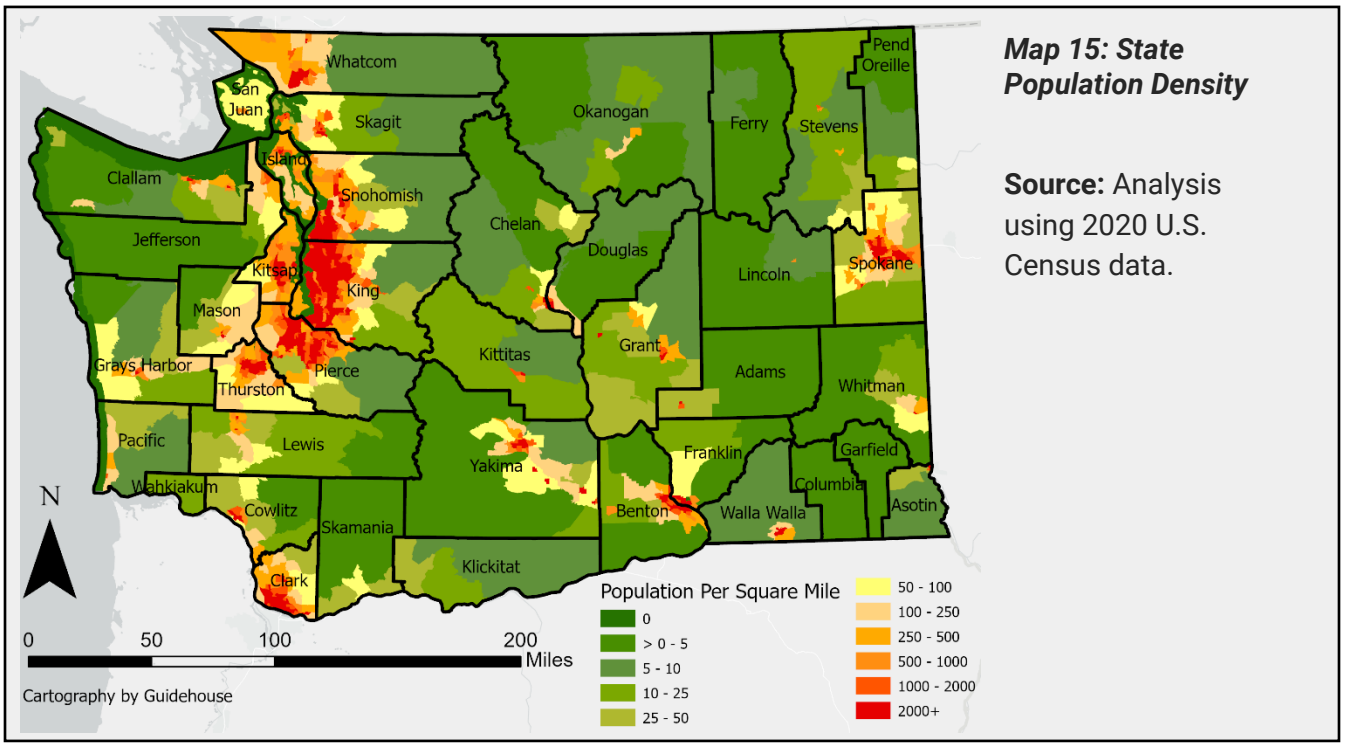
[168] WSBO (January 2021), State Broadband Office 2020 Report. Accessed at: https://www.commerce.wa.gov/wp-content/uploads/2021/04/032921-2020-WA-State-Broadband-Report-FINAL.pdf

Low Population Density

Related to obstacles involving low returns on investments for ISPs, several Community Action Plans discuss low population density as a barrier for deployment, corroborating concerns ports, public utility districts and private ISPs raised in stakeholder engagement activities. As **Map 15** shows, many parts of the state have lower population density. Moreover, state law's defines rural counties as those with a population density less than 100 persons per square mile, or a county smaller than 225 square miles, as **Map 16** illustrates. According to this definition, 30 of the state's 39 counties are considered rural, with 28 counties meeting the population density definition.[169] In its Community Action Plan, Ferry County – one of the state's least dense counties – reiterated the negative impact its remoteness has on broadband deployment the lack of market depth in Ferry County is caused by the small number of businesses and households spread throughout wide areas of the county, many of which have limited financial resources. Consequently, the impact that low population density has on infrastructure deployment is compounded by the fact that these households and businesses cannot afford the higher fees that ISPs must charge to offset increased deployment and maintenance costs.

Ferry County's Community Action Plan

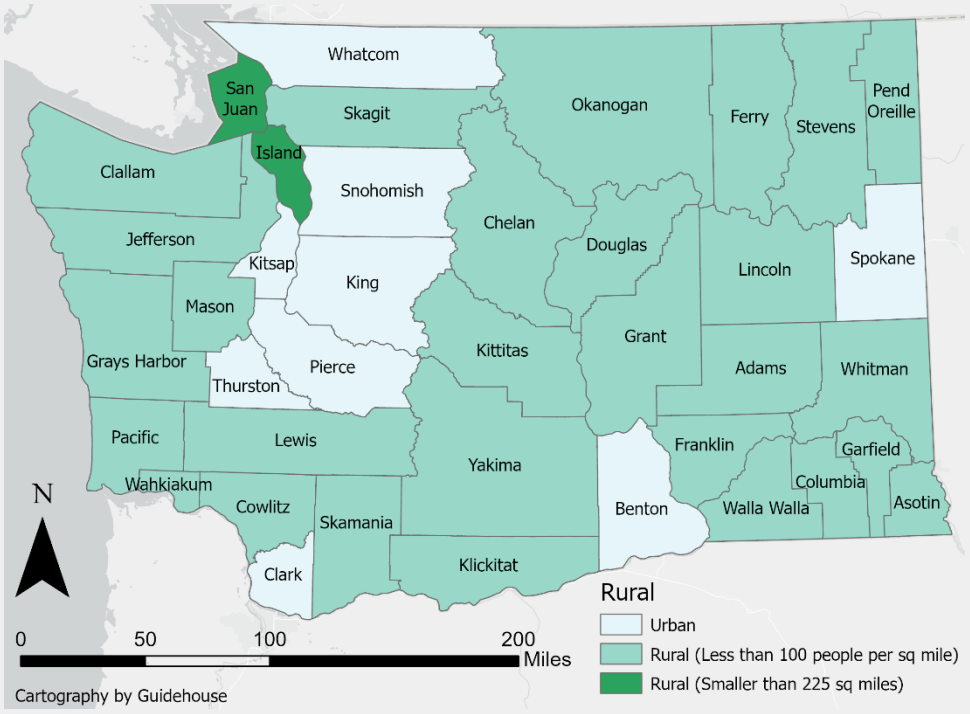
"While multiple private companies are interested in serving portions of the area, there is no clear market solution for getting everyone connected. Providers face challenges with all portions of network infrastructure. The remote, rural nature of the area makes per subscriber costs for deploying access infrastructure relatively high."



Map 15: State Population Density

Source: Analysis using 2020 U.S. Census data.

[169] As the **textbox** shows, although the state classifies Island and San Juan counties as rural, both counties have population densities of 423 and 106, respectively, and meet the rural definition according to the county size.



Map 16: Rural and Urban Counties of Washington State

Source: Analysis using 2023 data from the Office of Financial Management.

4.2 *Barrier: Cost of Broadband Deployment*

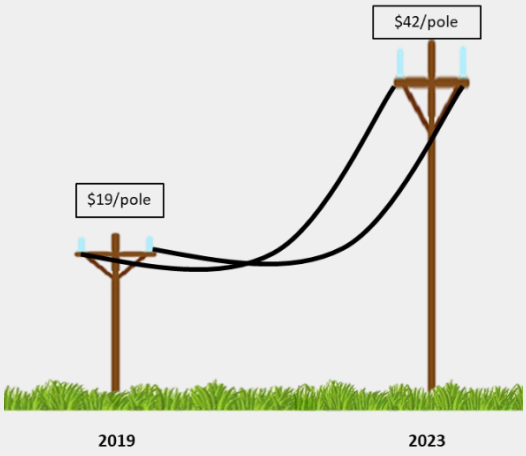
As we previously discussed in **Section 3.1.1**, the state of Washington has several grant and loan programs intended to offset broadband construction costs. However, the cost to expand broadband continues to be a barrier for public and private ISPs. One high-cost component to broadband expansion is associated with the use of fiber optic cables as a broadband delivery method. Fiber is the preferred infrastructure for many ISPs, as it is the most resilient and expandable broadband technology. ISPs can deploy fiber using one of two methods: buried and aerial attachment to utility poles. Although buried fiber optics are less susceptible to line breakages or damage from climate, it is much more expensive, challenging, and time intensive to bury fiber due to trenching costs – cost that can increase exponentially depending on terrain.

Similarly, the cost to install fiber using aerial infrastructure can also be expensive due to utility make-ready costs, or the costs associated with attaching wires to existing utility poles. In 2020, aerial make-ready costs in WA were estimated at $8,000 - $10,000 per pole, and with an average of thirty poles per mile this can drive costs exponentially higher for carriers.[170] Utility pole owners include several types of fees when calculating make-ready costs, including application fees, site fee, site screening fee. These costs can include several types of fees utility poles owners can charge, such as flat rate fees, application fees, site application fees, site reservation fees, and per pole charges.

[170] WSBO (January 2021), State Broadband Office 2020 Report. Accessed at: https://www.commerce.wa.gov/wp-content/uploads/2021/04/032921-2020-WA-State-Broadband-Report-FINAL.pdf

Some of these fees can increase significantly over a short time-period. For example, one utility pole owner increased the fee associated with its per pole charge from $19 per pole to $42 per pole between 2019 and 2023, as **Figure 8** shows. While this may appear to be a small change in price, considering the number of poles that ISPs may need to use, especially in less dense areas, this price change could make expanding broadband to some unserved areas using aerial infrastructure less feasible from a cost perspective.

Figure 8: Comparison of Utility Pole Fees in 2019 and 2023



Source: Analysis of an ISP's route application fees.

Ultimately, 12 of the Community Action Plans included pole contact costs as a barrier to broadband deployments, as **Appendices 7.3 and 7.4** describe. The costs to use aerial infrastructure can vary significantly due to the cost of make-ready work on poles to achieve compliance with the National Electric Safety Code or the cost of replacing an existing pole with a new or taller pole to support broadband as poles may be at capacity or undersized. Additionally, King county's Community Action Plan also described how any maintenance that has fallen behind schedule on poles and Rights-of-Way must be addressed and paid for by the ISP at the time of broadband construction.[171] The costs of deferred maintenance can increase ISP's total spend on deployment significantly, making it difficult for smaller, regional ISPs to expand their infrastructure due to limited funding capacity. In addition to deferred maintenance costs, prohibitive costs may come from a requirement to fix previous construction issues for both aerial and underground construction.

Snohomish County's Community Action Plan

"These preferred providers are also reluctant to 'give-up' their proprietary rights to expand into these areas, essentially holding these neighborhoods hostage. There is not [a] mechanism for these neighborhoods to protest [or] seek relief from this proprietary ownership."

Even when the supporting infrastructure is in place, the cost to construct last mile projects can also impede deployment. As previously discussed in **Section 3.3.1**, one example of high last mile costs is associated with the cost of service drop installation, which involves bringing broadband to the customer's residence or business. In some instances, the cost of trenching, laying fiber, and installing broadband can cost $1,500 or more per location. Moreover, some of these areas are located within a specific ISP's service territory, or an area where the ISP has claimed exclusivity to provide broadband services. In these instances, if there is no fee payment to install broadband on the premise, the county is unable to source an alternative ISP to install broadband to the premises, because of the initial ISP's exclusivity rights.

[171] King County (2023), Community Action Plan. Accessed at: King_County_Community_Action_Plan.pdf | Powered by Box

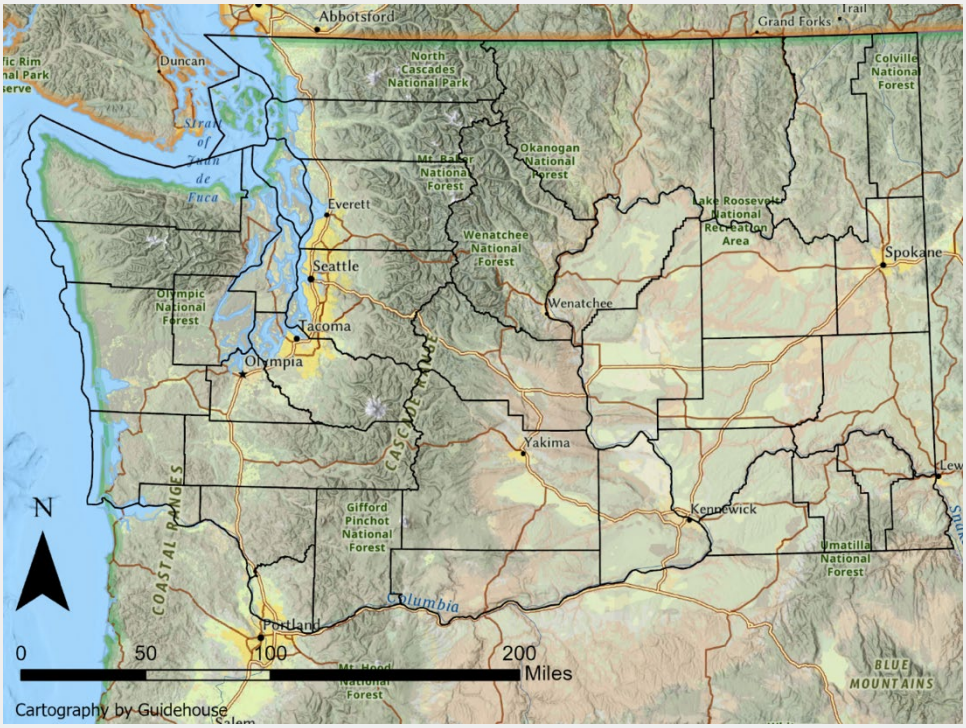
The cost of deployment may also increase due to supply chain constraints. As the federal government disburses BEAD funding across the country, it is expected that there will be supply chain challenges due to greater demand. These can stem from the availability of raw materials, to manufacturing and the assembly of supplies, and even labor shortages. There has been high demand for fiber optic cable and other materials needed for broadband projects for the last few years, and the COVID-19 pandemic delayed deliveries more, creating bottlenecks for the broadband industry.[172] The impending influx of federal funding from BEAD will likely increase the cost for all facets of broadband deployment and present additional challenges for the state.

Finally, some BEAD requirements for subgrantees may be an obstacle for accessing grant funding. In general, BEAD funding requires a 25% entity match in addition to a 25% letter of credit match, similar to the requirements associated with the federal Rural Digital Opportunity Fund. A letter of credit, issued by the subgrant's financial institutions, would allow the federal government to recover disbursed funding in the event of non-compliance. Therefore, if an entity is seeking $10 million in funding support, they would need access to approximately $5 million in funds to submit a complete application. These funding requirements may present challenges for smaller, low-population density localities that want to apply for BEAD funding to provide broadband to unserved and underserved locations in their jurisdictions, but do not have the capacity to provide the funding match or the letter of credit match.[173]

4.3 *Barrier: Geography*

Washington state's diverse topographical and geographical makeup benefits its residents and communities in many ways, but it also presents challenges and barriers to broadband infrastructure expansion. In Pacific County, for example, which lies on the western coast of the state, its proximity to the Pacific Ocean means that high wind events are common and winter storms typically include hours of 40-80 mph winds. These high wind events cause trees to fall, damaging lines and structures used for aerial fiber optic infrastructure. Similarly, although wireless technologies are less expensive than fiber, they are more susceptible to hazardous weather, such as rain, wind, salt spray, and snow and therefore more likely to experience equipment malfunction and signal interference, which can make wireless technologies more expensive to maintain. Although buried, fiber optic cables would therefore appear to be the more viable option, Pacific County's topography – which also includes mountainous landscape with heavily forested areas, dense canopy cover, numerous wetlands, and geologic hazard areas – any construction project requires significant planning and expensive hardening of in-ground broadband infrastructure.[174] **Map 17** below illustrates the topography of the state.

[172] Randy Sukow (September 27, 2022), Potential Supply Chain Delays Raise Questions for BEAD Participants. Accessed at: https://www.nrtc.coop/potential-supply-chain-delays-raise-questions-for-bead-participants/
[173] The WSBO will develop specific guidance associated with the letter of credit as part of its Initial Proposal. However, the value of the letter of credit must be at least 25% of the subaward amount.
[174] Pacific County (2023), Community Action Plan. Accessed at: Pacific_County_Community_Action_Plan.pdf | Powered by Box



Map 17: Topographic Map of Washington State

Source: ESRI's Natural Geographic base map.

On the opposite end of the state in Asotin County – with completely different topography – which creates its own set of geographic challenges to broadband deployment. Asotin County has difficult terrain with severe elevation changes – including North America's deepest river gorge – which makes construction of high-speed broadband expensive and complicated. The county also experiences frequent forest or wildland fires, limiting the viability of aerial infrastructure; underground fiber optic and pole installation is challenging due to underlying basalt rock formations.[175] Ultimately, Washington's diverse topography is an obstacle, and calls for additional review and careful planning when expanding broadband infrastructure due to the difference in construction requirements.

[175] Asotin County (2023), Community Action Plan. Accessed at: Asotin_County_Community_Action_Plan.pdf | Powered by Box

4.4 Barrier: Workforce Gaps

An additional anticipated barrier is gaps in the workforce. Workforce gaps include a lack of skilled labor for constructing broadband infrastructure, overseeing broadband services, and administering grant funding. In terms of the limited labor available for construction, there may be obstacles in securing the workforce required for deployment infrastructure. In King County, local BAT members note that professional engineers – required by federal safety standards – who are qualified to work in the joint use space on poles are fully employed and the shortage of labor will be compounded by the large scale of investment in broadband. Additionally, major storm events divert labor to large areas of destruction.[176] Other positions that could see labor shortages could include tower equipment installers and repairers, telecommunications equipment installers and repairers, electrical power-line installers and repairers, and electricians, to name a few.

Aside from construction laborers, localities may also experience barriers related to a lack of labor experience overseeing broadband services and administering grant funding in smaller localities. In conversation with the Washington Public Utility District Association, concerns were voiced about the limited capacity for public utility districts in rural areas to provide broadband services or oversee grant funding. Many local governments in rural, low-density cities or counties do not have the staff or experience needed to disburse and manage broadband deployment funding. These concerns – particularly from PUDs – have stopped local government entities from providing broadband services. This suggest that the state will need to provide ongoing technical assistance to applicants and provide regular check-ins before the application deadline, and after the subrecipients are selected, to overcome this deployment barrier.

4.5 Barrier: Regulatory

In reviewing Community Action Plans, the lack of a Dig-Once policy, the presence of regional pavement cut moratoriums, and slow permitting processes are frequently cited as regulatory barriers to broadband deployment. At the time of writing this Plan, the state of Washington has not yet finalized a coordinated Dig-Once statewide policy, although it is under review and progress has been made since the Washington State Joint Transportation Committee commissioned a Broadband Access to State Highway Right of Way Study.[177] This Dig-Once policy will be contained to state routes under WSDOT jurisdiction. Coordinated timing of transportation and broadband projects can create taxpayer savings on labor, equipment, and materials – up to 16% per mile in rural areas and up to 33% per mile in urban areas, according to a US Government Accountability Office study.[178] Unfortunately, those benefits have not yet been realized as the Dig-Once policy is not finalized, although the WSDOT has made steady progress.[179] BEAD funding presents an

[176] King County (2023), Community Action Plan. Accessed at: King_County_Community_Action_Plan.pdf | Powered by Box
[177] KPMG (December 2021), Broadband Access to State Highway Right of Way Study. Accessed at: KPMGBroadband_FinalReport.pdf (wa.gov)
[178] Washington State Department of Commerce (February 8, 2023), Lewis County Dig-Once Pilot Project Review Recommendations for Statewide Policy. Accessed at: Lewis County Dig-Once Pilot Project Review and Recommendations for Statewide Policy
[179] Current state law currently only directs WSDOT to adopt a policy that requires it to proactively provide broadband owners of any planned state highway projects. However, if no owners are ready or able to install broadband conduit at the time of WSDOT's construction project, then WSDOT has the option to decide if it wants to hire its own contractors to lay broadband conduit. As a result, it is possible that the WSDOT could decide to not lay any fiber conduit along certain Rights-of-Way (ROW), because of a lack

opportunity to incentivize the coordination of project delivery and remove barriers for local jurisdictions to proactively align multiple projects where excavation work is required.

The variety of pavement cut moratoriums across the state also pose a regulatory challenge to deployment. These moratoriums vary across areas such as Seattle, Spokane County, and Pierce County and state-wide moratoriums such as the Transportation Improvement Board and County Road Administrative Board. For example, the Inland Northwest Regional Pavement Cut Policy recently established a pavement cut moratorium for a period of three years for all new and reconstruction Tier 1 roadways.[180] In Seattle, there is a five-year moratorium on opening new pavement except under certain circumstances.[181] Although there is an outreach period for coordinated infrastructure installation, if the window is missed by an ISP, then it is not permitted to open the road again for years. Additionally, the difference in regional regulations presents an obstacle for streamlined broadband construction, particularly if it involves laying fiber or digging up pavement.

Slow permitting processes have also emerged as obstacles to broadband deployment. Lengthy permitting processes were repeatedly cited in the Community Action Plans as a main challenge to broadband deployment. In King County, the lack of a consistent and efficient permitting process emerged as a major concern, as there is currently no streamlined process in place and each jurisdiction or pole owner has adopted its own standards. Additionally, permitting procedures can introduce significant delays – ranging from three to twelve months – with no recourse but to wait.[182]

4.6 *Barrier: Inclusion & Adoption*

As discussed in greater detail in **Section 3.3.2**, a low Affordable Connectivity Program adoption rate is one of the biggest obstacles to increasing adoption of broadband services. Challenges to ACP adoption include lack of awareness, inadequate multilingual outreach, a difficult consumer application process, or limited ISP participation in the program altogether for reasons, including the ACP's administrative burden on small ISPs. In particular, the lack of multilingual educational outreach regarding the ACP or other affordability programs remains a challenge. In public engagement sessions in Western Washington, many participants discussed difficulties they had in learning about programs due to limited English proficiency. Currently, the state has a lower ACP participation rate than the national average; increasing enrollment will be one strategy to help address broadband subscription affordability, as discussed in **Chapter 5**. There is also hesitation from some communities to adopt internet due to privacy and data security concerns, and lack of trust in ISPs.[183] The state's Digital Equity Plan will provide a more comprehensive look into the obstacles and barriers to digital inclusion and provide potential solutions.

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of broadband project readiness, and consequently, due to pavement cut moratoriums, these ROW would go unused. As a result, the WSBO will work with the Legislature to require WSDOT to lay conduit in those instances where it is planning highway construction and no broadband owners are available or able to install conduit at that time.

[180] Spokane County (January 1, 2023), Inland Northwest Regional Pavement Cut Policy. Accessed at: https://www.spokanecounty.org/DocumentCenter/View/47709/2023-Modified-Regional-Pavement-Cut-Policy-Final

[181] Seattle Department of Transportation (December 15, 2016), Director's Rule 01-2017. Accessed at: https://www.seattle.gov/Documents/Departments/SDOT/About/DocumentLibrary/ROWORR_Manual.pdf

[182] King County (2023), Community Action Plan. Accessed at: King_County_Community_Action_Plan.pdf | Powered by Box

[183] Ibid.

4.7 Barrier: Lack of Centralized Data

Disparate sources of data are an obstacle to universal broadband service implementation. In taking stock of the broadband deployment, adoption, access, and affordability assets across Washington state, gaps were identified in access to data. For example, there is no centralized database that visualizes ROW across the state, and the location of infrastructure assets is often fragmented across state and local government agencies and departments. Without a centralized ROW database, ISPs or localities have difficulty in planning and implementing deployment projects as coordinating construction with the transportation authority may take longer. While this Plan, and Community Action Plans, have attempted to capture known public assets, it is difficult to obtain asset information from private providers.

4.8 Barrier: Cybersecurity Concerns

Cybersecurity is a barrier to universal broadband service in Washington state. Broadband infrastructure is targeted by cybersecurity threats throughout the United States. Communities in rural areas are especially vulnerable to cyber-attacks on broadband infrastructure "due to the lack of security infrastructure and expertise and the vulnerability of scarce community resources."[184] In order to adhere to the requirements designated by BEAD funding, the state will institute network software upgrades, including cybersecurity solutions, and training for cybersecurity professionals who are working on BEAD-funded networks in connection with last-mile broadband deployment projects. For rural communities, working with the Communications Supply Chain Risk Information Partnership will help improve small and rural communications providers' and equipment suppliers' access to information about risks to key elements of their supply chain. Washington state will also work to address cybersecurity obstacles related to residents and communities, including the provision of user training on cybersecurity, privacy, and other digital safety.

4.9 Barriers for Tribal Entities

There are 29 federally recognized tribal nations across Washington state, each with unique sovereign considerations for broadband deployment and challenges related to broadband access, adoption, and affordability. In general, however, many tribes have experienced difficulties with policy barriers and working with ISPs who may be deterred by more complex legal regulations around permitting and land use, which differ from tribe to tribe and from Washington state regulations. For example, during tribal listening sessions a member of the Confederated Tribes of Colville Reservation expressed frustration that while they are very familiar with working with the Bureau of Indian Affairs and building on federal trust land, it may be perceived negatively or as a disadvantage in grant applications by reviewers who are unfamiliar with the process.

Reviewing Community Action Plans submitted by tribal governments, a common theme emerged related to jurisdictional boundary barriers. In particular, the Jamestown S'Klallam Tribe noted that the many jurisdictions in their region – including county, tribal, city, national park, and state – make coordinating projects an uphill battle.[185] Specifically, ROW permitting has becoming

[184] Terry Young (December 1, 2022), Why Cybersecurity in rural broadband buildout strategies is critical. Accessed at: https://www.lightreading.com/broadband/why-cybersecurity-in-rural-broadband-buildout-strategies-is-critical/a/d-id/782049
[185] Jamestown S'Klallam Tribe (2023), Community Action Plan. Accessed at: Jamestown_S_Klallam_Community_Action_Plan.pdf | Powered by Box

increasingly difficult due to the high number of overlapping jurisdictions. Additionally, there may need to be supplemental legal agreements before a deployment project can begin. For example, in accordance with the Makah Tribe Community Action Plan, it is mentioned that agreements with outside parties must include a Tribal Government Resolution between the Tribal Government and the outside party to be legally binding.

To help mitigate these barriers it will be critical to involve tribes at every stage of deployment projects from planning and evaluation, project area selection, recognizing the sovereignty that tribes have over broadband deployment on tribal lands. Additional concerns that need further investigation are reports that past federal grants like the RDOF award have been awarded to companies for projects crossing tribal land but did not receive a formal Tribal Government Resolution of Consent. This is a concern in relation to tribal sovereignty, and there needs to be verification that, as an enforceable commitment, there will be deployment to unserved or underserved locations within the tribal land that it covers.

Also, unlike local governments, tribal governments do not have the legal authority to levy property taxes on tribal lands held in trust by the federal government;[186] Tribes also may generally have less ability to generate revenue through property and income taxes to establish a strong tax base that would support infrastructure development and support for community anchor institutions like schools, hospitals, and libraries.[187] As a result, an alternative approach to defining CAIs may be worth further consideration.

Finally, an overarching concern that tribes have expressed, at recent engagement events, is an overall lack of trust with the WSBO and the state of Washington in general. Although the WSBO acknowledges that this is not something that can easily be addressed, it hopes to prove itself as a partner in addressing broadband issues on tribal land, beginning with continued engagement activities, described in **Section 5.1.5** and **Appendix 7.10**.

While there are several potential barriers that need to be overcome to reach universal access, there are also many opportunities to help address these barriers. Priorities, activities, and strategies to help address barriers and to meet the vision, goals, and objectives described in **Chapter 2** are discussed in the next Chapter.

[186] Department of Revenue Washington State (n.d.), Information for tribal members/citizens. Accessed at: https://dor.wa.gov/forms-publications/publications-subject/tax-topics/information-tribal-memberscitizens

[187] National Congress of American Indians (n.d.), Taxation. Accessed at: https://www.ncai.org/policy-issues/tribal-governance/taxation#:~:text=In%20general%2C%20tribal%20governments%20lack,income%20taxes%20on%20tribal%20members.

5. IMPLEMENTATION PLAN

In a culmination of the vision, goals, and objectives; existing resources; needs and gaps; and obstacles and barriers presented in this Five-Year Action Plan (Plan), the Washington State Broadband Office's (WSBO) Implementation Plan outlines the steps it will take to achieve the vision, goals, and objectives established in **Chapter 2** in the coming years. Of these actions, the state's commitment to ongoing stakeholder engagement is critical for creating a strong foundation to successfully provide broadband service to unserved and underserved locations. The state of Washington has already connected with over 3,400 individuals through public engagement activities between 2022 to 2023 – with their feedback contributing to the development of this Plan – and plans to continue stakeholder outreach for the duration of the broadband build-out.

This Plan's priorities and planned activities describe what efforts the state needs to take to ensure the success of its Broadband Equity, Access, and Deployment (BEAD) program, and, ultimately, provide universal broadband coverage to all Washingtonians. Combining insight from public engagement sessions and the Community Action Plans, the WSBO developed seven priorities to be supported by BEAD funding:

- Invest in resilient broadband infrastructure across Washington state to provide universal service to all households, businesses, and communities
- Improve broadband connectivity for all Community Anchor Institutions (CAIs) and increase the utilization of existing public assets
- Minimize regulatory barriers to deployment
- Expand technical support and improve subgrantee's capacity development
- Support statewide workforce development efforts
- Accelerate adoption of broadband services
- Increase affordability of broadband services

To achieve the priorities, the WSBO identified planned activities and key execution strategies that will push Washington state closer to its goal of providing universal, high-speed, reliable broadband service. The following section also outlines an estimated timeline and cost for universal service and details how this Plan aligns with various strategic priorities for Washington state, including digital equity, economic and workforce development, education, transportation, healthcare, environmental sustainability, agricultural, and others.

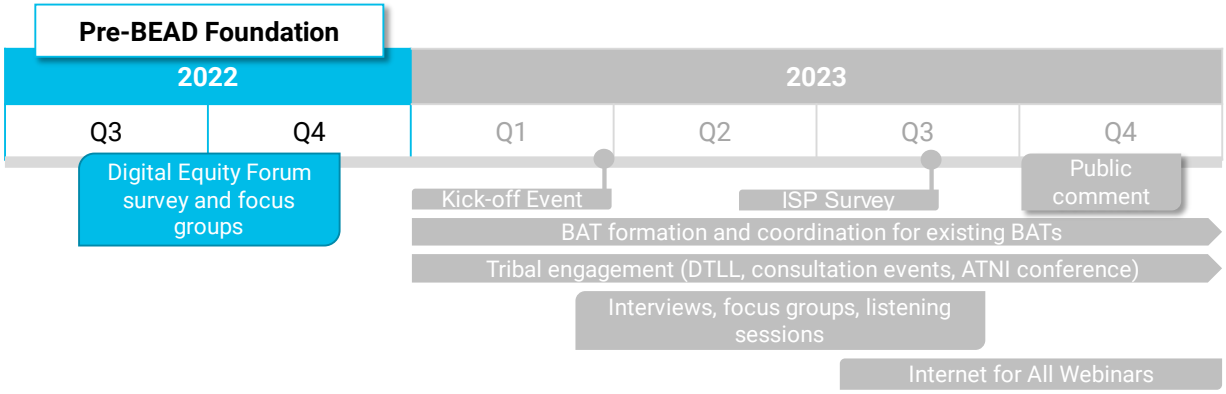
5.1 *Public Engagement Process*

The WSBO is deeply invested in conducting meaningful engagement with community members and organizations to ensure that the overall vision, strategy, and desired outcomes at the end of the BEAD and Digital Equity programs are reflective of diverse communities across the state. To that end, the WSBO is tailoring its approach to ongoing engagement to meet the following public engagement goals:

- Establish meaningful engagement with communities that have historically not been represented at the table, with particular attention paid to geographic coverage across the state.
- Promote an open, inclusive, and transparent public involvement process.
- Strengthen partnerships through multiple engagement opportunities.
- Reduce burden or confusion for the public to engage and participate through clear information and communication.

Pre-BEAD Public Engagement – Creating Strong Foundations (2022)

Figure 9: 2022 Public Engagement Timeline



In anticipation of the planning to be conducted for the BEAD and Digital Equity processes, and prior to the period of performance for National Telecommunications and Information Administration's (NTIA) planning funds, the WSBO in partnership with the Washington State Office of Equity convened the state's Digital Equity Forum to identify challenges to digital equity in the state, as **Figure 9** shows. Funded with state funds identified in the FY 22 supplemental budget, this forum conducted activities that served as an important precursor to the planning efforts funded by NTIA. These activities included:

- **Public listening sessions:** Four 90-minute public listening sessions were held with the goal of providing an accessible space to identify community needs related to digital equity and barriers to internet use in Washington state.
- **An online community survey:** Accessible in 17 languages including American Sign Language, was developed to reach Washington state residents to better understand challenges to accessing and using the internet. The survey was available for 45 days and more than 2,700 total responses were received from Washington residents.[188]
- **Focus groups:** The Equity in Education Coalition and Goodwill coordinated four in-person focus groups across the state to help give people with lived experience the opportunity to share their experiences and stories. Focus groups were held in Ephrata, Pasco, Seattle, and Tacoma Washington.

[188] Washington State Department of Commerce (April 4, 2022), Digital Equity Forum Report. Accessed at: https://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=CommerceReports_2022_LGD_Digital%20Equity%20Forum_Final_4.4.23_66571f42-74cb-40e6-994f-e1e81fe78e89.pdf. Survey and focus group results found in the Appendix.

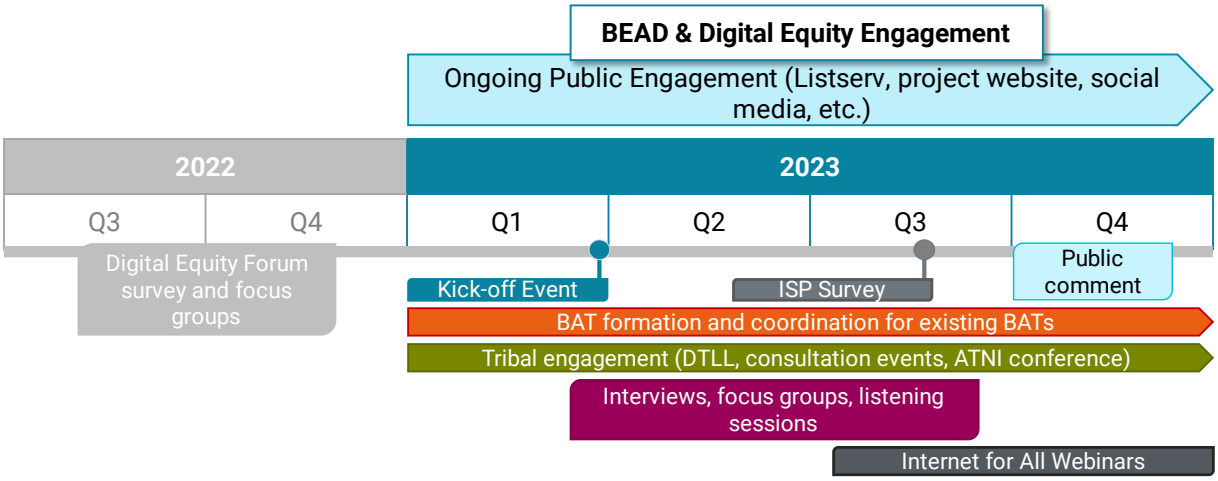
Results from the analysis of the listening sessions, online survey, and focus groups conducted in 2022 uncovered four key themes:

- *Higher quality broadband service is desired*: Faster and more reliable service needs to be available to more people at more affordable rates and from more providers.
- *Expanded access*: Expansion of broadband internet access must be coupled with culturally informed efforts and multilingual outreach to elevate digital literacy and digital skills for broader adoption to occur.
- *Quality equipment is needed*: Varied quality of internet access equipment (such as modems, Wi-Fi routers, etc.) negatively affects broadband access.
- *Active role of state government*: There is a desire to see internet service provider deficiencies addressed through effective regulation and the development of new state programs and initiatives to more effectively underserved communities.[189]

Findings from these efforts and the more than 2,700 individuals who took the time to contribute their experiences have provided the foundational early inputs for the planning and public engagement being implemented for the BEAD and Digital Equity planning process. Additional engagement activities, which were designed specifically with the BEAD and Digital Equity planning in mind are described in the next section.

5.1.1 Public Engagement – BEAD and Digital Equity Planning (2023 and onwards)

Figure 10: 2023 Public Engagement Timeline



As depicted in **Figure 10**, the WSBO is building from previous efforts to support ongoing public engagement by demonstrating its commitment to learn from previous engagement efforts and to continue hearing from all Washingtonians. One of the most significant efforts that WSBO has used state funds to help develop are Broadband Action Teams (BATs): The WSBO partnered with Washington State University-Extension to help support existing and stand-up new BATs. 50 BATs across 39 counties and 12 tribes submitted broadband and/or digital equity Community Action

[189] Washington State Department of Commerce (April 4, 2022), Digital Equity Forum Report. Accessed at: https://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=CommerceReports_2022_LGD_Digital%20Equity%20Forum_Final_4.4.23_66571f42-74cb-40e6-994f-e1e81fe78e89.pdf.

Plans that are helping to inform this Plan and the Digital Equity Plan. In addition to the 12 tribes that submitted independent Community Action Plans, four tribes partnered with counties in developing a Community Action Plan. In total, 16 tribes participated. BATs consist of a variety of stakeholders including local and tribal government representatives, economic development councils, CAIs, and more.

Additionally, the WSBO and its partners, including the Equity in Education Coalition and the City of Seattle, conducted over 70 engagement activities throughout the state between 2022 and 2023, which have helped inform this Plan, as **Table 19** shows.

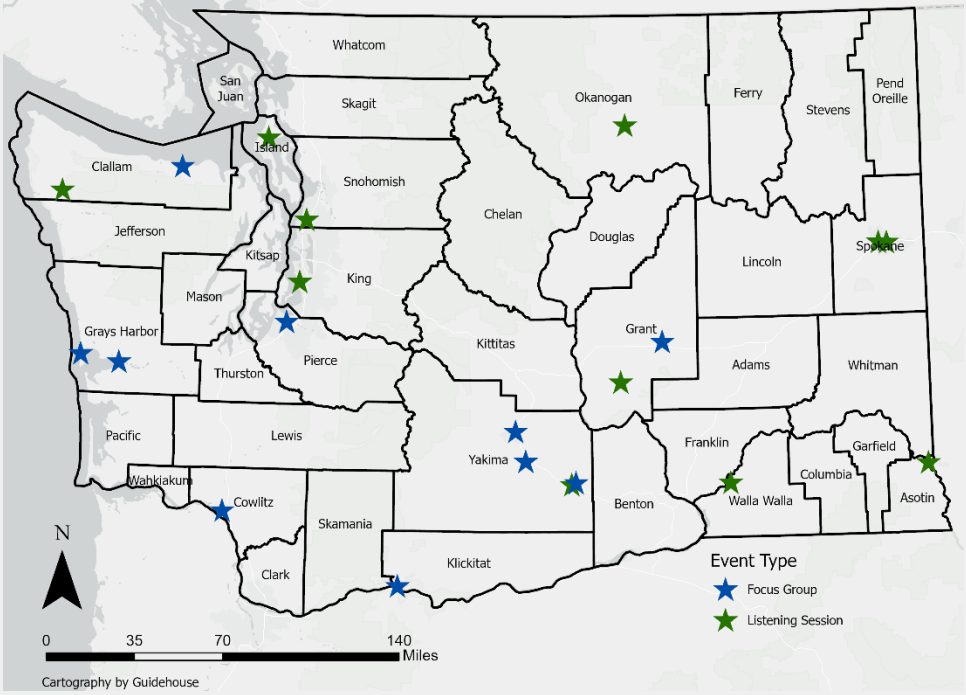
Table 19: Public Engagement Activities Contributing to Washington's Plan
(July 2022 through July 2023)

Engagement Type (# of events)	Number of People Engaged	Covered Populations / Organizations Representing Covered Populations[190]
Interviews (20)	33	All
Focus Groups (32)	241	All
Community Events (mobile engagement) (5)	157	All except incarcerated individuals
Listening Sessions (12)	267	All
Surveys (2)*	2,745	Aging individuals, Individuals who are members of a racial or ethnic minority group; and Individuals who primarily reside in a rural area
Total	3,443	All

*Note: The 2022 survey included age, race/ethnicity, and zip code information, but did not include information related to all underrepresented community categories as defined in the BEAD NOFO.

[190] "Covered Populations" describes the eight population groups NTIA identified in the DE Notice of Funding Opportunity (NOFO) which overlap with "underrepresented communities" identified in the BEAD NOFO: low-income households; ageing individuals; incarcerated individuals; veterans; individuals with disabilities; individuals with a language barrier, including individuals who are English learners or have low levels of literacy; individuals who are members of a racial or ethnic minority group, and individuals who primarily reside in a rural area. Additionally, Washington state law's definition of 'covered populations' also includes two population groups — children and youth in foster care and individuals experiencing housing instability — however, we did not include these two populations in this table.

Map 18 shows the location of in-person engagement events conducted between May to June 2023 with focus groups depicted in blue and listening sessions depicted in green.



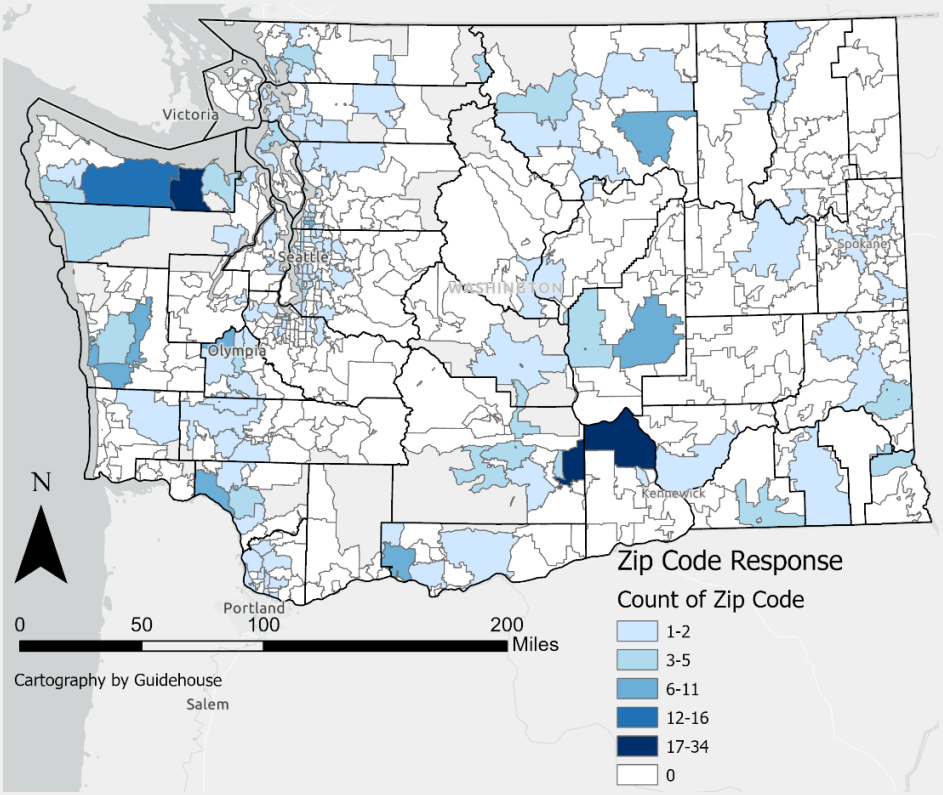
Map 18: Locations of In-Person Engagement Events (May – June 2023)

Source: Locations of outreach events

The purpose of the public engagement events has been to allow Washingtonians across the state to be engaged in the planning process, share the needs of their communities, contribute ideas for how to meet digital equity and universal access goals and build and strengthen partnerships that will be critical to the implementation of the BEAD Plan and Digital Equity Plan. To hear perspectives that may have been missing from previous outreach attempts, multiple methods were used to reach out to invite stakeholders including e-mail blasts, flyers, advertising in local papers, promoting through local libraries, phone calls, and other strategies that individual partners undertook. For example, for one listening session hosted by Sunnyside School District, staff advertised the session as a parent meeting and individually called and invited parents to encourage them to attend the session. Food was provided at focus groups and listening sessions as a recommended best practice, and gift cards, funded through state funding sources, were also given out at the end of in-person focus groups and mobile outreach events. This helped foster a welcoming environment and adhered to Washington state guidance on lived experience compensation recognizing the expertise and contributions of community members.[191]

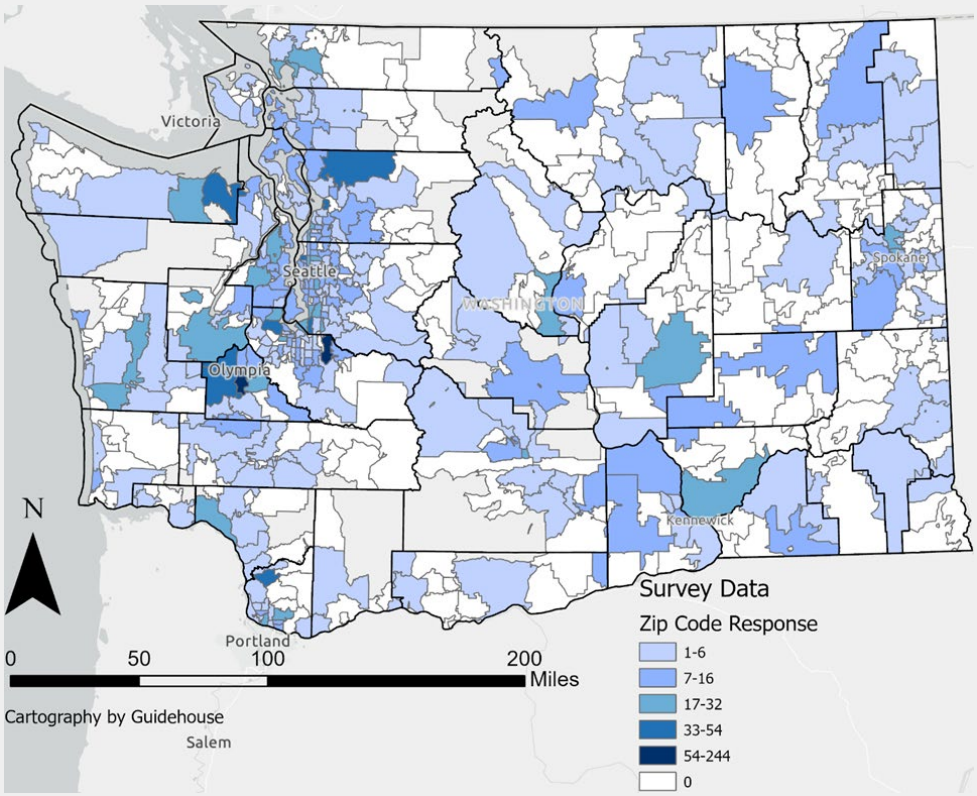
Such strategies appear to have had a large impact on engagement participation. Specifically, participation at events, described above, included covered populations who have historically been underrepresented through engagement activities conducted both virtually and in-person across the state. Additionally, **Map 19 and Map 20** illustrate the reach of engagement for participants across the state in its public listening sessions and survey. A full list and details of public engagement activities is provided in **Appendices 7.9 and 7.10.**

[191] Washington State Office of Equity (n.d.), Community Compensation Guidelines. Accessed at: https://equity.wa.gov/people/community-compensation-guidelines



Map 19: Residential Zip Codes Provided by Listening Session Participants[192]

Source: Analysis of zip codes provided by participants.



Map 20: Location of Survey Respondents by Zip Code

Source: Analysis of zip codes provided by respondents

[192] Altogether, 419 participants provided 402 valid zip codes.

One important lesson that the WSBO intends to integrate into ongoing and future engagement activities is the value of attending existing community events compared to holding standalone listening sessions. Although the WSBO hosted different types of engagement activities, the engagement team found that they were able to engage with more people by attending community-organized events already planned as compared to planning an event unique only to this process. Examples of community events and services included local festivals, career fairs, public transit centers, senior center lunches, and food banks, just to name a few.

Example engagement event

The engagement team visited the food bank in Port Angeles and were able to connect one-on-one with over 80 people from various covered populations to discuss questions related to internet access, affordability, and adoption.

Acknowledging that there may still be a need for targeted listening sessions and focus groups to reach specific covered populations, the WSBO intends to prioritize events that best align with the principle of "meeting people where they are" whenever possible.

Engaging with trusted partners – schools, libraries, local and tribal officials, and community-based organizations – is critical to amplify communication, reach community members, and expand multilingual outreach opportunities. This is especially essential for those who may rely primarily on word of mouth or nondigital forms of outreach: including those who lack broadband altogether. Accordingly, the WSBO will continue to engage and coordinate with community-based organizations and CAIs as it arranges additional engagement activities during the BEAD implementation phase. The WSBO is planning to supplement the digital public comment opportunities with in-person outreach events to engage with communities during the public comment period for both the Initial Proposal and Digital Equity Plan, which should occur in September and October 2023. At these events, community members will have the opportunity to provide in-person public comments, ask questions, and learn more about Internet for All in Washington and existing available resources, such as the Affordable Connectivity Program (ACP) benefit and digital navigation services. While the exact details for these events are still being finalized, the intention for the public comment period is to ensure that communities will have the ability to engage in the review of plans and to amplify their needs.

The WSBO can help identify and coordinate objectives for engagement with partners and act as a resource through both financial and technical support to local and tribal government entities and CAIs and various organizations to directly conduct the engagement work. The following are examples of collaborative current and past efforts with partners to engage stakeholders:

- The City of Seattle conducted 10 focus groups in May 2023 with questions corresponding to a survey for multiple covered populations including: individuals who live in covered households, aging individuals, individuals with disabilities, individuals with a language barrier (with a particular focus on emerging languages), and individuals who are members of a racial or ethnic minority group. These focus group questions were mirrored closely by the WSBO's recent public engagement activities to help with data comparability.
- Washington State Library recently conducted a statewide digital skills study (concluding in June 2023).

The WSBO is coordinating with these partners to integrate findings to better prepare a more comprehensive Five-Year Action Plan in alignment with the Digital Equity Plan that is being developed concurrently and will be submitted later in 2023.

Altogether, the WSBO intends to implement an engagement strategy involving five related activities, as **Figure 11** describes.

Figure 11: Ongoing Engagement Strategy

1. ***Identify Stakeholders.*** To capture full public engagement from distinct covered populations and stakeholders, it is helpful to target a fixed population with a related outreach method.
2. ***Determine Method of Outreach.*** Consider a variety of data gathering measures, as unserved or underserved communities are hard to reach using traditional, digital methods. Offline methods may include door-knocking or texting residents.
3. ***Clarify Intended Result of Outreach and Engagement.*** Depending on the method of outreach, clarify the intended result of public engagement efforts – e.g., give updates on project rollout, provide opportunity for feedback, or facilitate forum for larger discussion.
4. ***Establish and Allocate Necessary Resources.*** Resources may include funding, staff, time, or content creation.
5. ***Incorporate Feedback into Broadband Strategy.*** Iterative understanding and incorporation of stakeholder feedback can act as a benchmark for success in meeting community needs.

5.1.2 Identification of Stakeholders

To ensure that all covered populations are involved in ongoing engagement, it is necessary to identify a multitude of stakeholder organizations that work alongside covered populations or represent individuals from covered populations. Additionally, stakeholders may become implementation partners, so identifying different types of stakeholders who will play different roles and can expand the reach of both outreach activities and program impact is important. **Table 20** below contains a preliminary stakeholder list by type with over 230 organizations. The full list of stakeholder organization names and the covered populations they serve is in the **Appendix 7.11**. This list has been developed as part of the planning process and will function as a living document, as various partners continue to introduce additional stakeholders through engagement activities.

Table 20: Summary of the Number and Type of Stakeholder Organizations as of July 2023

Stakeholder Type	Count by Stakeholder Type
Adult education agency	1
Civil Rights Organization	2
CAIs	19
County or municipal government	26
Economic development organization	18
Faith-based organization	1
Higher education institution	6
Internet service provider	44
Key stakeholder partnership	9
Labor organization or union	3
Local educational agency	11
Nonprofit organization	30
Organization representing aging individuals (60+)	1
Organization representing immigrants	1
Organization representing underrepresented communities	3
Other (Primarily technology and telecommunications related)	32
Public housing authority	3
Public utility district	12
State agency	17
Tribal government or organization	23
Workforce development organization	7
TOTAL	269

5.1.3 Determine Method of Outreach and Engagement, Clarify Intended Result of Outreach and Engagement, and Establish and Allocate Necessary Resources

Ultimately, the most appropriate outreach and engagement method will depend on the intended audience and results. Below, **Table 21 and Table 22** outline outreach methods the WSBO is currently using to engage with general population or specific covered populations, and additional outreach methods that the WSBO could potentially use for future engagement activities, respectively. These tables are non-exhaustive as, overall, the selected method will need to be tailored for potential partners, message and intended results, resources needed, platform or format, and outreach administrator for each engagement effort. To ensure consistency for all engagement activities, WSBO will review engagement material and objectives with partners for communication consistency and goal alignment. As such, the WSBO will need sufficient outreach and engagement administration resourcing. The WSBO team is planning to hire a policy and legislative manager who will help to lead stakeholder and partner communications working closely with the current broadband engagement coordinator and will continue to evaluate resourcing needs as BEAD-related program activities commence.

As described in **Table 21**, digital navigators can help with targeted outreach in unserved and underserved areas and can provide the opportunity for two-way engagement methods for both sharing and receiving information about community connectivity and digital inclusion needs. The next cohort is scheduled to begin in September 2023.[193] As service providers who will be working with underrepresented communities offering one-on-one assistance, there is a great opportunity for outreach through this program. The WSBO is considering the development of project-based sub-groups to address specific challenges as they arise. Local and tribal BATs that were formed prior to the planning process, and community partners who helped with planning and hosting engagements for the last round of public engagement (see Digital Equity Plan for more details) may also help play an important role in public outreach and engagement. As facilitators of community action plans that were recently submitted to the state, BATs will be encouraged to continue to be a resource through project implementation. The plan is to continue to engage with BATs to share information with the WSBO as projects are deployed, and the WSBO has devoted a staff person to interface with BATs as a liaison for BATs to engage regularly.

[193] Washington State Department of Commerce (n.d.), Digital Navigator Program. Accessed at: https://www.commerce.wa.gov/building-infrastructure/washington-statewide-broadband-act/digital-navigator-program/

Table 21: Currently Utilized Outreach Methods

Outreach Method	Category	Description
BAT Meetings	Population	• General and covered populations
	Potential Partners	• Local ISPs • Economic development associations • Schools and libraries
	Message & Intended Results	• Liaison between local broadband advocates and the state. • Local champions for broadband and digital equity initiatives.
	Resources Needed	• Continued financial and technical support from the WSBO
	Platform or Format	• Virtual and in-person meetings
Digital Navigator Program	Population	• General and covered populations
	Potential Partners	• Public Housing Authorities • State and local libraries • Nonprofit umbrella organizations • Community health networks • Community-based organizations • Department of Veterans Affairs
	Message & Intended Results	• Expand the utilization of digital navigators through targeted outreach in unserved and underserved areas and include built-in opportunities for feedback and two-way engagement methods to ensure high-quality deliverance and program sustainability.
	Resources Needed	• Continued support for digital navigators to expand into unserved and underserved areas. • Continued program funding.
	Platform or Format	• Virtual meetings accessible by using mobile-friendly platforms with call-in options for those without broadband. • In-person workshops and training sessions.
Internet for All Webinars	Population	• General and covered populations
	Potential Partners	• Digital navigator grantees (to be selected) • Other community-based organizations • State agencies
	Message & Intended Results	• Updates will be provided on the state's plans for accessing and investing federal funds to bring high-speed broadband infrastructure to unserved and underserved communities. Participants can ask questions and share challenges their communities are facing.
	Resources Needed	• WSBO and NTIA staff to present on BEAD and Digital Equity grants

Outreach Method	Category	Description
	Platform or Format	• Virtual meetings accessible by using mobile-friendly platforms and call-in options for those without broadband. • Meetings to be recorded and posted for later viewing.
Surveys	Population	• General and covered populations
	Potential Partners	• Stakeholder groups (such as internet service providers, workforce development councils, associations, local government, schools, hospitals, etc.) • Local and tribal BATs • Community-based organizations serving covered populations
	Message & Intended Results	• Distribute surveys to key stakeholder groups and community-based organizations to help with disseminating more widely to understand needs and challenges, measure progress.
	Resources Needed	• Staff to create and disseminate surveys. • Resources to analyze and report results. • Time to adequately engage with stakeholder groups.
	Platform or Format	• Digital and paper-based surveys
TVW (public broadcast network)	Population	• General and covered populations
	Potential Partners	• Local and tribal government communication teams
	Message & Intended Results	• Opportunity to disseminate information widely and for people to get information if they do not have internet.
	Resources Needed	• TVW staff availability
	Platform or Format	• Live broadcast and virtual recording
Website and digital equity dashboard	Population	• General and covered populations
	Potential Partners	• Communication teams from engagement stakeholders.
	Message & Intended Results	• Update key governmental agencies on the progress and implementation of broadband expansion efforts. • Disseminate vital information to encourage ongoing engagement, such as future meetings and conferences. • Encourage two-way engagement via submission boxes and link to online surveys embedded into the website where the dashboard will be published.
	Resources Needed	• Technical team to format and update website • Staff to monitor broadband efforts and produce online content
	Platform or Format	• Accessible webpage

Different levels of resources will be needed depending on the outreach and engagement activity and to create new and updated materials for. For example, running community engagement workshops will require more staff resources than deploying surveys. Some outreach methods may also be recurring whereas some methods may be conducted on a more ad hoc or once-off basis; for example, newsletters may be sent on a monthly cadence, whereas door knocking may occur once a year as part of a promotional campaign to build awareness around a specific program like the ACP. **Table 22** provides additional examples of potential ongoing outreach methods that could be utilized in the future to reach both the general population and specific covered populations. As mentioned previously and documented in **Table 3**, the WSBO's soon to be hired policy and legislative manager and broadband engagement coordinator will work together to plan the most relevant outreach methods for different phases of the program and tailor as needed for underrepresented communities and will determine if supplemental staff resources may need to be contracted or where it is possible to leverage existing communications support from Department of Commerce and other state agencies who may work with various populations. For example, the Department of Youth, Children, and Families would be an ideal partner for outreach related to youth in foster care.

Table 22: Examples of Potential Outreach Methods and Partners for Future Engagements
(Example engagements are listed beginning with those focused on general populations then specific covered populations)

Outreach Method	Category	Description
Newsletter	Population	• General and covered populations
	Potential Partners	• Local and tribal BATs • State Board of Technical and Community Colleges • Association of Washington Cities • Chambers of Commerce • Education and workforce development organizations • Community anchor institutions • Nonprofits and civil rights organizations • Washington State Community Action Partnerships
	Message & Intended Results	• Share updates on project timeline focused on education and workforce development and opportunities for community feedback in English, Spanish, and other languages. • Provide repeated and consistent opportunities for public engagement.
	Resources Needed	• Staff to write newsletter content. • Funding to print/mail out physical copies. • Translators
	Platform or Format	• Virtual newsletter via email • Multilingual hard copy newsletters at community anchor institutions.

Outreach Method	Category	Description
Social media	Population	• General and covered populations
	Potential Partners	• State agency communication teams • Nonprofit organizations
	Message & Intended Results	• Spread awareness about available resources related to digital equity programs. • Instructions on how to sign up or where to go to get help to apply for assistance.
	Resources Needed	• Staff to develop social media content. • Social media accounts
	Platform or Format	• LinkedIn • Twitter • YouTube • Instagram • Others
Attending existing social cultural events for various covered populations	Population	• Aging individuals • Individuals with disabilities • Individuals with language barriers • Racial/ethnic minority groups • Rural populations
	Potential Partners	• Local and tribal BAT members • Chambers of commerce • Associations • Nonprofit umbrella organizations • Arts councils • Museums • Community-based organizations
	Message & Intended Results	• Solicit feedback from covered populations regarding broadband issues such as: connectivity, speed, digital literacy, and outreach efficacy. • Conduct ACP outreach.
	Resources Needed	• Staff to attend events and conduct outreach.
	Platform or Format	• Informational one-pager • Comment box for tabling • Incentives for people to stop by
	Population	• Veterans

Outreach Method	Category	Description
Community engagement forums at Veterans Affairs facilities	Potential Partners	• Department of Veterans Affairs • WAServes Team
	Message & Intended Results	• Engage with veterans consistently throughout broadband rollout to ensure their needs and concerns are routinely understood and considered.
	Resources Needed	• Veteran Affairs administrators contact to raise awareness. • Staff to coordinate forum timing, speakers, questions.
	Platform or Format	• In-person community engagement forums • Virtual community engagement forums
Reentry council meetings	Population	• Incarcerated individuals
	Potential Partners	• Department of Corrections • State Reentry Council • Reentry grant program providers
	Message & Intended Results	• Connect with organizations who serve incarcerated individuals to understand digital skills gap and training needs.
	Resources Needed	• Staff to attend council meetings and communicate with Department of Corrections, Reentry Council staff, program providers.
	Platform or Format	• Virtual engagement

5.1.4 Incorporate Feedback into Broadband Strategy

While it will not be possible to incorporate every piece of feedback received through engagement activities, the lived experiences shared by covered populations and suggestions for ways to address barriers, gaps, and needs will be synthesized and reviewed for key themes and insights that can be used to iteratively improve the state's overall strategy for achieving broadband goals. Overall, the proposed stakeholder engagement process should be viewed as a high-level planning document that lays out general goals, objectives, and methods. However, the details of outreach and engagement will need to be developed in partnership with key stakeholders according to resource availability, scheduling, and adapted as needed over the course of the five-year grant period. Interagency, local, and tribal coordination efforts through multiple platforms and organizations– some examples described in **Section 3.2.5** – will be important to meet both outreach and engagement goals and the overarching vision for universal access across the state. Adaptation of the plan will depend on feedback from the public and identification of stakeholder engagement gaps, which may require very targeted and flexible outreach approaches.

5.1.5 Tribal Consultation and Engagement

Both formal tribal consultations and less formal engagement are important components of the stakeholder engagement process for tribes in Washington state. The WSBO has developed a tribal communications and outreach plan for continued engagement, which is included in **Appendix 7.12.** Methods of engagement will include but are not limited to:

- Formal government-to-government consultation
- Regional consultation events in locations identified by and hosted by tribes
- Virtual and in-person listening sessions
- 1-on-1 conversations between subject matter experts

The WSBO has reached out to all 29 federally recognized tribes throughout Washington with an official "Dear Tribal Leader Letter" and hosted three listening sessions that all tribes were invited to attend. Members from 14 tribal nations participated. Staff from the WSBO and the NTIA have also attended multiple meetings and had discussions with tribal leaders throughout the planning process – including at the mid-year convention for the Affiliated Tribes of Northwest Indians (ATNI) and the Federal Communications Commission (FCC) Tribal Workshop hosted by the Lummi Nation in July – and will continue to do so throughout the implementation of the program. Formal tribal engagements to date are documented in **Table 23**. In response to feedback received by tribes during this process, the WSBO has partnered with the Nisqually and Spokane Tribes to host in-person regional consultation event planned for August 8 and 15, 2023. Additionally, the WSBO will be available throughout the September 18 – 21, 2023 at ATNI's upcoming meeting for consultation with tribal leadership. The WSBO will continue to reach out and partner with tribes to identify preferred opportunities for consultation.

Table 23: Formal Tribal Consultation and Engagement Activities to Date

Name of Tribal Nation	Dear Tribal Leader Letter (Y/N)	Listening Session 1 (6/26/2023)	Listening Session 2 (6/28/2023)	Listening Session 3 (6/29/2023)
Confederated Tribes and Bands of the Yakama Nation	Y	Y	Y	
Confederated Tribes of the Chehalis Reservation	Y	Y	Y	
Confederated Tribes of the Colville Reservation	Y	Y	Y	Y
Cowlitz Indian Tribe	Y	Y		
Hoh Indian Tribe	Y			Y
Jamestown S'Klallam Tribe	Y		Y	
Kalispel Tribe of Indians	Y			
Lower Elwha Klallam Tribe	Y			
Lummi Nation	Y	Y	Y	Y
Makah Tribe	Y		Y	Y

Name of Tribal Nation	Dear Tribal Leader Letter (Y/N)	Listening Session 1 (6/26/2023)	Listening Session 2 (6/28/2023)	Listening Session 3 (6/29/2023)
Muckleshoot Indian Tribe	Y			
Nisqually Indian Tribe	Y	Y		
Nooksack Indian Tribe	Y	Y		
Port Gamble S'Klallam Tribe	Y			
Puyallup Tribe	Y			
Quileute Tribe	Y			
Quinault Indian Nation	Y	Y		
Samish Indian Nation	Y			
Sauk-Suiattle Indian Tribe	Y			
Shoalwater Bay Indian Tribe	Y			
Skokomish Indian Tribe	Y			
Snoqualmie Indian Tribe	Y			
Spokane Tribe of Indians	Y			
Squaxin Island Tribe	Y			
Stillaguamish Tribe of Indians	Y		Y	
Suquamish Tribe of Indians	Y			
Swinomish Indian Tribe	Y	Y		
Tulalip Tribes	Y	Y	Y	
Upper Skagit Indian Tribe	Y			

Additionally, several tribal nation members also participated in engagement activities documented in **Appendix 7.10**. The BAT-led planning process also included participation from 16 of the 29 tribes listed in **Table 24**, with a link to the resulting Community Action Plans included in **Appendix 7.2**.

Table 24: Tribes Submitting Community Action Plans as of July 2023

Name of Tribal Nation	
Cowlitz Tribe	Nooksack Indian Tribe
Hoh Tribe	Samish Indian Nation
Jamestown S'Klallam Tribe	Sauk-Suiattle Indian Tribe (Joint with Skagit County)
Kalispel Tribe (Joint with Pend Oreille County)	Shoalwater Tribe (Joint with Pacific County)
Lower Elwha Klallam Tribe	Spokane Tribe
Lummi Nation	Swinomish Tribe
Makah Tribe	Tulalip Tribe
Nisqually Tribe (Joint with Thurston County)	Yakima Nation

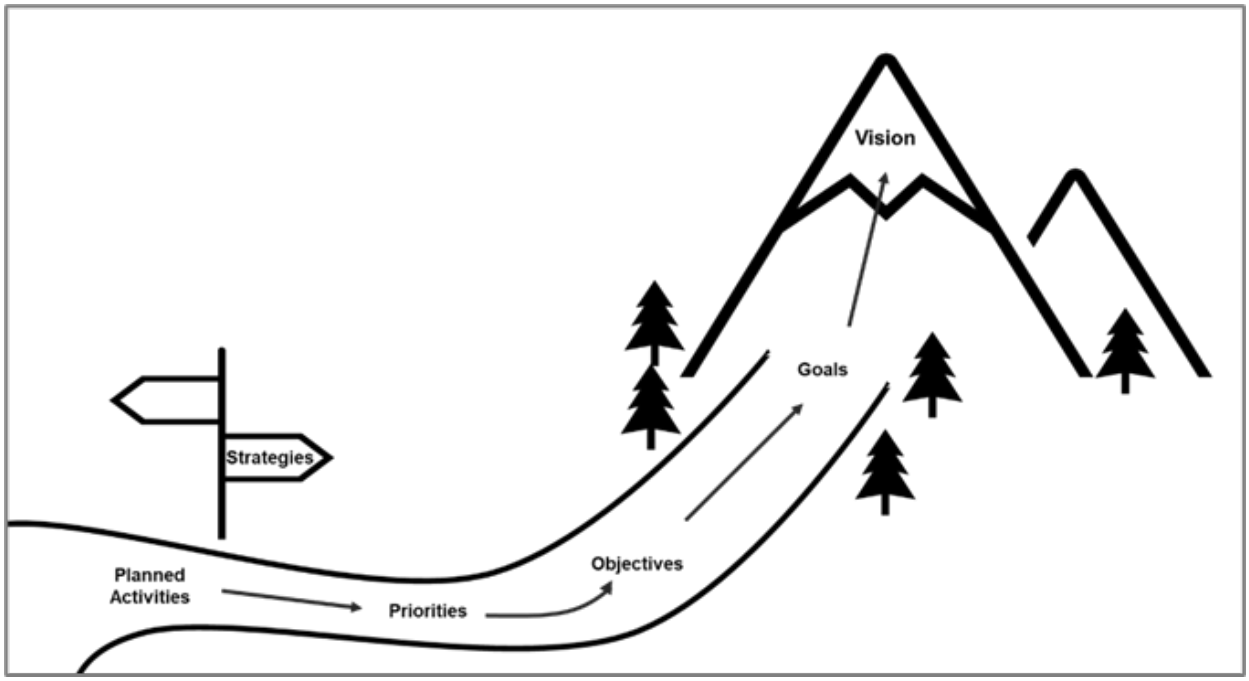
5.1.6 Applicant and Subgrantee Technical Assistance and Feedback

The WSBO also recognizes the need to provide technical assistance to potential subgrantees prior to application submittals, which may include workshops and events like technical assistance webinars or in-person information sessions like those that were held by the NTIA. Additionally, to be responsive to subgrantees, once subgrantees have been selected and funding is awarded, the WSBO will establish regular check-in meetings with subgrantees for two-way feedback and to ensure that subgrantees remain compliant with both federal and state requirements for the BEAD and Digital Equity grant funding.

5.2 *PRIORITIES*

This Plan's priorities and planned activities describe what efforts the state needs to take to ensure the success of its BEAD program, and, ultimately, provide universal broadband coverage to all Washingtonians. Using information gathered from the statewide stakeholder engagement process and the Community Action Plans, the WSBO has distilled seven primary priorities to be supported by BEAD funding. Together, these priorities put Washington state on the path to accomplish the goals and objectives set out in **Section 2.2.** Below, **Figure 12** visualizes how the goals, priorities, planned activities, and key execution strategies come together in this Plan.

Figure 12: The Pathway to Universal Broadband in Washington



In drafting the BEAD priorities, it was paramount to the WSBO that they reflect the goals and objectives outlined in **Chapter 2**, but also closely mirror the perspectives and priorities of the entities that will ultimately carry out the broadband deployment, adoption, affordability, access, and digital equity actions. Considering these unique regional and community needs, Washington's priorities focus on: 1) investing in resilient broadband infrastructure, 2) improving broadband connectivity for CAIs and increasing utilization of public assets, 3) minimizing regulatory barriers to deployment, 4) expanding technical support and capacity for subgrantees, 5) supporting statewide workforce development efforts, 6) accelerating adoption of broadband services, and 7) increasing affordability of broadband services.

These priorities shown in **Table 25** stem from common themes outlined in the Community Action Plans, further aligning the WSBO's statewide broadband vision with locally defined goals and vision.

Table 25: Priorities for Broadband Deployment and Digital Inclusion

Priority	Description	Alignment with Goals
1. **Invest in resilient broadband infrastructure across Washington state to provide universal service considering areas that are economically distressed and difficult to access.**	Deploy last-mile broadband infrastructure and build out middle mile network to provide "future-proofed" broadband service to unserved and underserved communities noting that innovative solutions may be needed for areas with difficult terrain and high costs.	• Goal 1 – Universal Access: Provide every business and household with the means to access broadband by 2028. • Goal 3 – Scalability and Sustainability: "Future proof" reliable broadband infrastructure while delivering at a scale and rate that meets access and equity goals.
2. **Improve broadband connectivity and resilience for all CAIs to meet needs of populations they serve and increase the utilization of existing public assets.**	Encourage access for all CAIs to receive a minimum of 1 Gbps symmetrical speeds enabling critical social and health services on resilient networks.; and consider expanding CAIs ability to serve as community connectivity hubs in areas where constructing new broadband infrastructure is too costly.	• Goal 1 – Universal Access: Provide every business and household with the means to access broadband by 2028.
3. **Minimize regulatory barriers to deployment across government levels and agencies.**	In coordination with federal, state, local, and tribal organizations, reduce regulatory barriers to broadband deployment to minimize costs, streamline infrastructure timeline, and maximize reuse.	• Goal 1 – Universal Access: Provide every business and household with the means to access broadband by 2028. • Goal 3 – Scalability and Sustainability: "Future proof" reliable broadband infrastructure while delivering at a scale and rate that meets access and equity goals.
4. **Expand technical support and improve subgrantee's capacity development with lessons learned from ARPA and BIP grant programs.**	Partner with unserved and underserved local and tribal governments to enhance regional capacity to apply for, disburse, and administer grant funding.	• Goal 1 – Universal Access: Provide every business and household with the means to access broadband by 2028. • Goal 3 – Scalability and Sustainability: "Future proof" reliable broadband infrastructure while delivering at a scale and rate that meets access and equity goals.
5. **Support statewide workforce development efforts in collaboration with the Workforce Board.**	Foster workforce development initiatives across Washington state to supply the increased workforce capacity required for broadband deployment and teach the digital skills necessary for digitally focused job opportunities.	• Goal 2 – Equitable Economic Development: Support economic growth, job creation, and workforce development through expanded broadband access and adoption across all covered and underserved populations.

Priority	Description	Alignment with Goals
6. **Accelerate adoption of broadband services in partnership with community organizations and through the Digital Navigator Program.**	Through partnerships with community organizations and local leaders, accelerate statewide adoption of broadband services, particularly for covered populations.	• Goal 2 – Equitable Economic Development: Support economic growth, job creation, and workforce development through expanded broadband access and adoption across all covered and underserved populations.
7. **Increase affordability of broadband services through increasing awareness of existing programs and crafting new programs and policies.**	Spread awareness of the ACP, introduce state-funded affordability programs, and coordinate with telecommunications providers to increase affordability of broadband services.	• Goal 1 – Universal Access: Provide every business and household with the means to access broadband by 2028. • Goal 2 – Equitable Economic Development: Support economic growth, job creation, and workforce development through expanded broadband access and adoption across all covered and underserved populations.

To implement the priorities laid out in this Plan, the following activities associated with each priority support the provision of universal broadband service. To accurately reflect strategies shared by stakeholders during outreach and local plan development, each planned activity was identified through Community Action Plans, or through stakeholder engagement, and is aligned with the priorities described above. Each activity will identify the expected outcomes, key players, and funding source, as the WSBO anticipates some funding gaps for completing deployment to all unserved and underserved locations.

Priority 1: Invest in resilient broadband infrastructure across Washington state to provide universal service in areas that are economically distressed and difficult to access

This priority focuses on investment in new broadband deployment through activities that would expand last-mile deployment and increase open access middle-mile construction where necessary. Associated activities include: 1) last-mile deployment in unserved and underserved areas, 2) open access middle mile infrastructure build, and 3) incentivizing ISPs to invest in unserved and underserved areas.

Potential Partners: Local governments, tribal governments, Public Utility Districts (PUDs), port authorities, Internet Service Providers (ISPs), the Northwest Open Access Network (NoaNet), the WSBO, Department of Transportation (WSDOT), Public Works Board (PWB), Community Economic Revitalization Board (CERB), nonprofit organizations, Broadband Action Teams (BATs)

Funding Sources: WSBO, CERB, and PWB Broadband Funding; Rural Digital Opportunity Fund (federal program); BEAD funding (federal program); Enabling Middle Mile Broadband Infrastructure Program (federal program), Enhanced Alternative Connect America Cost Model program, Healthcare Connect Fund Program

Activity 1.1: Last-Mile Deployment

Planned Activity: Continuing to support and expand the construction of last-mile deployment projects in unserved and underserved areas of Washington will be essential to reaching the state goal of universal service. As mentioned in **Section 3.3.1**, last-mile deployment – including the cost to install service drops – can be cost prohibitive for many households, causing some to forego broadband services altogether. There are a variety of reasons that might cause higher last-mile deployment costs, for fiber-based solutions. These include difficult terrain or low-population density to justify a fiber solution for last-mile connectivity. In these high-cost circumstances, alternative technologies utilizing fixed wireless or low earth orbiting satellites may need to be considered.

What is last-mile deployment?

The technology and process of connecting the end customer's home or business to the local network provider.

Source: NTIA's "Broadband Glossary"

To facilitate last-mile deployment and reduce the cost burden for households and businesses, the WSBO will work with the state legislature and state agencies that help the Washington State Department of Commerce administer other federal energy-related financial assistance to establish a Line Extension Consumer Assistance Program to support last-mile connections for individual homes. At a high-level, this program would allow eligible entities, particularly those in economically distressed areas, to apply to receive funds on behalf of the individual homeowner – assuming they meet outlined standards. Once eligibility is determined, the entities would be included in a provider list that allows individual homeowners to request last-mile connections from eligible providers directly. The eligible provider would estimate costs, verify unserved or underserved status, and request grant funds for last-mile construction.

Expected Outcomes: Subsidizing last-mile deployment construction costs will lessen the cost burden for low-income households and businesses who have been unable to connect their home or business to a preexisting broadband network. It could also further incentivize additional deployment, as ISPs would reconsider low return on investment projects, since they would know that the state will help cover capital costs to connect end users.

Activity 1.2: Open Access Middle-Mile Infrastructure Build

What is open access?

An arrangement in which a network owner offers nondiscriminatory access to and use of its network on a wholesale basis.

Source: BEAD NOFO

What is middle-mile infrastructure?

The hard assets need to support the connection between a local network, also called a "last mile" connection, and the backbone Internet network.

Source: NTIA's "Broadband Glossary"

Planned Activity: The WSBO will continue to encourage projects that help support a large-scale, highly scalable, resilient, and redundant middle-mile network with open access, while also establishing a sustainable business model for private sector investors. As the physical fiber optic infrastructure needed to enable internet connectivity, the middle-mile is essential to broadband deployment. Further, an open-access network gives providers and entities access to broadband infrastructure that allows any network to connect on equal economic and service terms. To build out open access middle-mile infrastructure, the WSBO will coordinate with state partners, broadband providers, local and tribal governments, and other community stakeholders to leverage existing funding to determine how best to build out Washington state's middle-mile network, particularly in rural and low-density regions.

Expected Outcomes: The expected outcome is to facilitate extensive fiber coverage throughout Washington state, ensuring that all communities receive reliable, equitable, open-access broadband services. This will ensure that both large and small providers can use the infrastructure to bring broadband services to their regions by increasing ISP competition, reducing costs, and improving the overall resiliency of internet services.

Activity 1.3: Incentivize ISPs to Invest in Unserved and Underserved Areas

Planned Activity: To offset the low return on investment often encountered by ISPs in rural or low-density regions, offering incentives to invest in unserved and underserved areas may help bridge the digital divide and incentivize broadband buildout. The WSBO is committed to examining ISP incentives, including providing additional points in BEAD funding scoring rubric for additional funding beyond the required 25% match requirements specified in the BEAD NOFO. Additionally, the WSBO will work with state legislature and local governments to consider other incentives to encourage ISPs to extend their coverage and provide broadband services in economically distressed areas and areas that are difficult to access.

Expected Outcomes: Financial incentives to invest in high-cost areas may offset the low return on investment that precludes ISPs from pursuing broadband deployment projects in unserved and underserved regions. Additionally, financial incentives may ultimately increase the affordability of broadband services in these areas, as the higher cost associated with deployment is not passed on to the consumer.

Priority 2: Improve broadband connectivity and resilience for all CAIs to meet needs of populations they serve and increase the utilization of existing public asset

This priority focuses on ensuring all CAIs can access 1 Gbps services standards and allowing public entities or private ISPs to use CAIs as area nodes, or community connection points, to serve as broadband expansion points, particularly in areas where new construction is too costly. Additionally, given that CAIs often provide critical social and health services, ensuring resilient networks is another aspect of improving connectivity. Linked to serving CAIs is increasing the overall utilization of existing public assets for broadband connectivity. Associated activities include: 1) explore increasing utilization of the K20 network, 2) working with CAIs to assess network resiliency, and 3) continuing to identify existing broadband assets.

Potential Partners: Local governments, tribal governments, CAIs, the WSBO, the Office of Financial Management, Washington Office of Superintendent of Public Instruction, K-20 Education Network, Department of Transportation (WSDOT), Public Works Board (PWB), Community Economic Revitalization Board (CERB)

What is a CAI?

CAIs, or community anchor institutions, are entities such as a school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community support organization that facilitates greater use of broadband service by vulnerable populations.

Source: BEAD NOFO

Funding Source: WSBO, CERB, and PWB Broadband Funding; Rural Digital Opportunity Fund (federal program); BEAD funding (federal program); Enabling Middle Mile Broadband Infrastructure Program (federal program); Schools and Libraries Universal Support Program (federal program); ReConnect Program (federal program)

Activity 2.1: Explore Utilization of the K20 Network

Planned Activity: The WSBO will work with the K20 network operators and the Office of Financial Management – the state office responsible for overseeing the K20 network – to explore expanding the use of the network to CAIs in unserved locations.

Expected Outcomes: Connecting CAIs or other designated institutions using the K20 network may be more cost effective compared to other projects that would rely on more extensive construction projects, thereby allowing the state to fund more projects. Additionally, expanding broadband access to CAIs could provide additional locations that could act as area nodes, and used to expand broadband – using fiber or fixed wireless delivery systems – to nearby unserved or underserved locations, when financially feasible. Finally, the use of the K20 networks may also make sense for CAIs, such as hospitals or health centers, which require a backup network in case its primary broadband network fails.

Activity 2.2: Work with CAIs to Assess Network Resiliency

Planned Activity: Both adequate speed and reliable connections are important to the successful functioning of CAIs. For CAIs who are open 24/7 such as health centers or hospitals, network resilience is critical as emergency service and telehealth providers. For example, during one of the listening sessions in Forks a rural healthcare worker discussed the challenges of not being able to send/receive electronic medical records or test results and instead reverts to taking

physical CDs to providers because either they do not have the bandwidth required or their digital systems are not modernized. Network redundancy as part of a disaster recovery plan can also help with reducing the risk of outages during emergencies and assessing resilience and disaster recovery planning is an area that rural CAIs may need particular support with.

Expected Outcomes: Development of disaster recovery plans related to network outages for healthcare CAIs and technical support for applying to assistance programs such as Healthcare Connect Fund Program for eligible healthcare providers.

Activity 2.3: Continue to Identify Existing Broadband Assets

Planned Activity: One avenue the WSBO may consider is working with other state agencies in creating a centralized database of existing broadband infrastructure to help the state track what entities are building out networks and where those networks are located. At this time there is no centralized repository of public broadband assets across the state of Washington, making it difficult for entities from easily finding dark fiber, the location of public networks, or hard assets – such as poles – that can be used to deploy fixed wireless. Centralizing this project information would help the state track which entities are building out networks and where those networks are located. For example, the WSDOT is currently working diligently to identify the location of its dark fiber network, so that that other entities might use it to bring more communities online. In fact, there is political momentum for a potential budget request to fund WSDOT's mapping of existing fiber assets, although nothing is set in stone. There is also no database of existing private ISP networks in the state, which – as heard throughout many public engagement sessions – limits a local government's ability to map broadband availability in a specific region.

Expected Outcomes: A centralized repository of information will help the state identify areas where it could be cheaper to use existing infrastructure to expand broadband, rather than constructing new broadband infrastructure network. It could also help in simplifying the permitting process by identifying all entities involved in the broadband deployment process.

Priority 3: Minimize regulatory barriers to deployment across government levels and agencies

This priority focuses on improving coordination with federal, state, local, and tribal organizations, to streamline permitting processes to make it easier for public and private organizations to expand broadband through reduced broadband deployment costs and expediting project delivery. The associated activities include: 1) streamlining ROW and easement permitting processes, 2) supporting the WSDOT's Dig-Once Policy, and 3) working with the WUTC to refine statewide utility pole standards.

Potential Partners: Local governments, tribal governments, the WSBO, Washington Utilities and Transportation Commission (WUTC), Department of Transportation (WSDOT), Public Works Board (PWB), Community Economic Revitalization Board (CERB), PUDs, port authorities, Internet Service Providers (ISPs), public and private utilities, railroad companies, and federal agencies.

Funding Source: State-appropriated funding

Activity 3.1 Streamline ROW and Easement Permitting Processes

Planned Activity: The WSBO intends to enter into discussion with the Washington State Legislature and entities responsible for permitting to identify opportunities to further improve and simplify the public rights-of-way (ROW) process to reduce administrative timelines. To build broadband networks, ISPs must install infrastructure on public and private land, requiring the acquisition of permits and easements. Permits provide access to the ROW – like streets, sidewalks, or highways – and allow ISPs to place infrastructure within and to access the ROW for purposes of construction or maintenance, whereas easements grant an ISP the right to use and access private property. As it stands, ROW permitting and easement processes would benefit from refinement and the establishment of clear guidelines and standardized agreements between infrastructure developers and public and private property owners, ultimately reducing barriers to entry. Therefore, the WSBO is committed to working closely with a broad group of stakeholders to change existing permitting and easement processes would increase project efficiency and timeliness. Given the complex ecosystem of permitting entities, a multi-stakeholder engagement process would include local governments, tribal governments, state agencies, and federal agencies. Additionally, the WSBO will work with the Washington State Legislature – which acknowledged the benefits of maximizing the use of ROW during construction or repair of transportation systems to offer a cost-effective opportunity for extending and improving broadband and high-speed internet connections throughout the state in ESHB 1457 – to find legislative solutions for statewide permitting barriers.[194] An example that the WSBO is reviewing as a possible model for expediting broadband deployment projects is the HB 1216 legislation that was passed in April to help with streamlining the siting of new clean energy projects, which essentially will create an Interagency Clean Energy Siting Coordinating Council, co-chaired by the Department of Commerce and the Department of Ecology to help with reviewing applications for projects that will be designated as "Clean Energy Projects of Statewide Significance" and eligible for an expedited streamlined permitting process for projects that are approved.[195]

Expected Outcomes: Streamlining permitting, and the easement process for broadband deployment infrastructure will reduce costs and minimize delays associated with construction and development.

Activity 3.2: Support the Washington State Department of Transportation's Dig-Once Policy

Planned Activity: The WSBO will continue to support the WSDOT in finalizing a statewide Dig-Once policy, which will address issues associated with regional pavement cut moratorium standards through improved coordination between deployment entities, state agencies, and local governments prior to breaking ground.[196] In partnership with WSDOT, the WSBO will also consider

[194] Washington State Legislature (July 25, 2021), Engrossed Substitute House Bill 1457. Accessed at: https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/Session%20Laws/House/1457-S.SL.pdf?q=20230717152811

[195] House Committee on Environment & Energy Appropriations (2023), House Bill Report: HB 1216. Accessed at: https://lawfilesext.leg.wa.gov/biennium/2023-24/Pdf/Bill%20Reports/House/1216%20HBR%20APP%2023.pdf

[196] Current state law currently only directs WSDOT to adopt a policy that requires it to proactively provide broadband owners of any planned state highway projects. However, if no owners are ready or able to install broadband conduit at the time of WSDOT's construction project, then WSDOT has the option to decide if it wants to hire its own contractors to lay broadband conduit. As a result, it is possible that the WSDOT could decide to not lay any fiber conduit along certain ROWs, because of a lack of broadband

expanding the Dig-Once policy to include all public utility and public works projects, where applicable. For example, it may be feasible to deploy fiber in conjunction with other infrastructure development, such as a water system planning project. Additionally, for future BEAD-funded projects that involves state roads, the WSBO will facilitate a working relationship between the awardee and the WSDOT to ensure coordination.

Expected Outcomes: Integrating broadband infrastructure into public infrastructure projects, such as transportation or utility projects, can optimize resources, reduce costs, and minimize environmental disruptions caused by construction. Additionally, coordinating the planning and deployment of multiple infrastructure types can lead to more efficient and cost-effective outcomes.

Activity 3.3: Work to Refine Statewide Utility Pole Standards

Planned Activity: The WSBO will work with both public and private utility pole stakeholders to consider standardizing processes and providing additional guidance to utility pole attachments.[197] Currently, state law allows utility pole owners to require entities wanting to use utility poles – such as ISPs and broadband network administrators – to pay for costs to upgrade utility poles to accommodate additional attachments. [198] However, the utility pole owner has some discretion in determining when and why a pole must be upgraded to increase its capacity. Ultimately, the absence of standardized attachment requirements and the lack of consistency in the approval process may deter some ISPs or broadband networks operators from expanding their broadband network. This can especially impact broadband expansion in rural and remote areas, where deploying broadband networks often relies on the availability and costs of access to utility poles.

Expected Outcomes: Establishing best practices would ensure a transparent process that establishes a fair distribution of costs between pole owners and entities seeking to use the pole, set height standards to facilitate fiber attachments on rural pole runs, and require utility owners to seek easements that include future telecommunications attachments on pole lines.

Priority 4: Expand technical support and improve subgrantee's capacity development with lessons learned from ARPA and BIP grant programs

This priority focuses on helping subgrantees apply for and administer BEAD, and other broadband funding opportunities, by providing additional technical and administrative support for the development of proposals.

Potential Partners: Local governments, tribal governments, the WSBO, Public Works Board (PWB), Community Economic Revitalization Board (CERB), PUDs, port authorities, Internet Service Providers (ISPs), public and private utilities.

Funding Source: WSBO, CERB, and PWB Broadband Funding; BEAD funding (federal program); State-appropriated funding

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project readiness, and consequently, due to pavement cut moratoriums, these ROW would go unused. As a result, the WSBO will work with the Legislature to require WSDOT to lay conduit in those instances where it is planning highway construction and no broadband owners are available or able to install conduit at that time.

[197] Utilities Technology Council (May 2020), Utilities Technology Council Joint Use Study. Accessed at: https://utc.org/wp-content/uploads/2020/12/UTC-Joint-Use-Study-Final.pdf

[198] Washington State Legislature (n.d.), WAC 480-54-030. Accessed at: WAC 480-54-030

Activity 4.1: Reduce Costs and Barriers Associated with Grant Applications and Administration for Subgrantees

Planned Activity: To directly address feedback on the costs and barriers associated with funding application and administration for subgrantees, the WSBO intends to revise the grant applications and administration process in a few ways. To the extent it is possible, the WSBO will aim to remove redundant information requests and questions from grant application forms to streamline the overall process. Additionally, the WSBO will consider the provision of capacity building funding to give rural and low-population density regions the ability to hire additional staff or consultants to develop project proposals and to provide technical assistance, in the hope of submitting more competitive applications. In conversations with local BATs through the public engagement process, many participants noted limited staffing capacity, which precluded their organizations from submitting a more comprehensive grant application. In some cases, participants shared that limited capacity prevented them from submitting a grant application altogether. Increasing capacity building services – such as grant writing services – may have a positive impact on the amount and quality of applications submitted from rural or low-density regions.

A concept that the WSBO will explore funding is the creation of a cooperative that would support multiple counties, municipalities and tribes that would be able to jointly hire project development, grant writing, and project management staff to serve the cooperative. Regional groupings of entities could be supported by a planning cooperative. For example, the coastal counties of Washington that face similar constraints and barriers to broadband deployment efforts would make up one consortium that could be supported by a possible planning cooperative.

Expected Outcomes: Reducing the administrative burden grant applications have on local entities will entice more organizations, particularly smaller, public organizations such as small county governments, to apply for broadband funding, increasing the number of potential broadband expansion projects. Furthermore, reducing the number of requests, or duplicative questions, will decrease the likelihood for applications to include errors and reduce the overall time spent reviewing applications. This would get funding to broadband projects sooner, increasing implementation speed.

Activity 4.2: Support a State Matching Fund

Planned Activity: The WSBO will continue to advocate for additional funding for the state's broadband matching fund to help local broadband deployment efforts would assist counties that do not have high population densities or the ability to match federal or state grants. The Washington State Legislature has already appropriated $50 million for the 2023-2025 fiscal year specifically for BEAD matching funds. However, considering that the federal BEAD funding allocation was larger than originally anticipated, more funding will need to be made available to assist local entities that cannot fulfil the BEAD matching requirement of 25%, allowing the state to contribute towards the match and increase the opportunity for low-density regions to apply for funding. According to many counties across Washington state, continued partnership around matching cost share would allow rural and low-population density communities to better engage with BEAD and other broadband funding opportunities. The WSBO will request an additional $257

million from the state legislature in the 2024 legislative session so that the WSBO can provide additional financial assistance to help bring broadband to these economically distressed and difficult to access areas.

Expected Outcomes: Providing financial assistance to lower income counties could increase the number of submitted applications and approved projects in areas that currently lack broadband access.

Priority 5: Support statewide workforce development efforts in collaboration with the Workforce Board

This priority focuses expanding educational programs or incentivizing more private apprenticeship programs required to develop an adequate broadband workforce. More details on workforce planning goals and strategies can be found in **Appendix 7.7**.

Potential Partners: Local governments, tribal governments, the WSBO, PUDs, port authorities, Internet Service Providers (ISPs), workforce development boards, labor organizations, Washington State Board for Community and Technical Colleges (WSBCTC), individual community and technical colleges, other higher education institutions.

Funding Source: BEAD funding (federal program); State-appropriated funding

Activity 5.1: Establish a Broadband Workforce Development Taskforce

Planned Activity: The WSBO will work to coordinate workforce development through a workforce development taskforce. This taskforce would use the experience and expertise of vital industry experts – including representatives for relevant state, local government, and tribal entities, along with higher education institutions, community colleges and trade schools, trade representatives, union representatives, or ISPs – to help the state better prepare and respond to workforce gaps resulting from the implementing BEAD-funded projects. This group would be charged with establishing a statewide workforce strategy that incorporates regional and local needs. Additionally, the taskforce could review BEAD applications and approved subgrantee projects to identify specific workforce gaps that may hinder the implementation of these projects and allocate resources accordingly, focusing on specific job gaps and regional needs.

Expected Outcomes: Changes to regional workforce plans and the expansion of existing workforce training opportunities in areas with the greatest workforce needs according to BEAD applications and funded projects.

Activity 5.2: Coordinate with Educational Institutions to Expand Training Programs

Planned Activity: In conversation with the Washington State Board for Community and Technical Colleges (WSBCTC), the WSBO was able to identify training programs at community and technical colleges across Washington that can supply the workforce necessary to deploy broadband at the scale and speed required of BEAD funding. Using the active plans and plans in teach-out pulled together by the WSBCTC, the WSBO will coordinate with statewide educational institutions to expand the training programs offered at each one. Currently, some community and technical colleges have a broader offering of broadband related educational courses than others. Increasing the educational opportunities offered across the state will help with ensuring there are

on ramps to jobs related to both broadband deployment and that require digital skills. The WSBCTC broadband inventory list will serve as a helpful jumping off point to identify regions lacking training programs and to ensure that all community and technical colleges have comprehensive educational modules for broadband deployment related occupations outlined in **Appendix 7.7** and include not only construction and technician roles, but also engineering and information technology (IT)-related training and certifications.

Expected Outcomes: Increasing the educational opportunities offered across the state can help catalyze local workforce opportunities in Washington related to BEAD program deployment. There are also potential coordination opportunities to maximize both state and federal funding related to other relevant workforce development programs such as the proposed Digital Literacy and IT Career Equity program spearheaded by the Workforce Training & Education Coordination Board, which includes developing a multi-stakeholder collective impact initiative to establish a digital literacy curriculum and certification process, establish and IT Service Corps, and to create an up-to-date compendium of the opportunities to family-wage careers.

Activity 5.3: Work with ISPs to Support Increased Access to On-the-Job Training Programming and Resources

Planned Activity: The WSBO will convene discussions with community colleges, technical schools, workforce development boards, ISPs, and others in the development of training programs to create a workforce with the skills necessary to implement broadband projects. The goal of these discussions would be to increase access to on-the-job training resources allowing ISPs to upskill their current broadband infrastructure workforce and advance the skills of employees already invested in broadband-related career opportunities. The WSBO has already reached out to ISPs through a survey to understand potential workforce needs as noted in **Appendix 7.7** and will include assessment of workforce plans as part of the evaluation of managerial and technical capacity of subgrantees, which will be outlined in the Initial Proposal.

Expected Outcomes: Working with ISPs to encourage limited-term technical training may increase the number of skilled workers in rural counties, potentially requiring less contractors to be outsourced from the more urban hubs. Additionally, on-the-job training could result in positive and significant impacts on company sales and firm size in general, which may further incentivize Washington firms to increase access to on-the-job training programming and resources.

Priority 6: Accelerate adoption of broadband services in partnership with community organizations and through the Digital Navigator Program

This priority focuses on establishing partnerships with community organizations and local leaders, aimed at accelerating statewide adoption of broadband services, particularly for covered populations.

Potential Partners: Local governments, tribal governments, PUDs, port authorities, Internet Service Providers (ISPs), the Northwest Open Access Network (NoaNet), the WSBO, Public Works Board (PWB), Community Economic Revitalization Board (CERB), Washington Technology Solutions, Washington State Office of Cybersecurity, Washington State Emergency Management

Division, nonprofit organizations, community anchor institutions (CAIs), Broadband Action Teams (BATs), Digital Equity Forum, Digital Navigator Program consortium

Funding Source: BEAD funding (federal program); Digital Equity funding (federal program); State-appropriated funding

Activity 6.1: Support Digital Skills and Digital Literacy Training

Planned Activity: To facilitate more digital skills training opportunities, the WSBO intends to partner with community and technical colleges, libraries, and nonprofits to provide more individual training modules at a discounted or free cost. Working closely with communities across the state will help the WSBO to determine what skills should be focused on and ensure that those skills are prioritized within the digital skills program framework.

Regarding digital literacy, digital navigator programs provide many residents and businesses with digital literacy training, and have had a positive impact on broadband adoption, access, and affordability for many Washingtonians. Libraries also provide essential digital literacy training to residents, and sometimes offer the only training available for remote or rural areas. Expanding funding for digital literacy programs from digital navigators and libraries will increase how many residents and businesses can be served and will increase overall digital literacy. Advocating for more funding to digital skills and digital literacy training programs – whether it is disbursed to community or technical colleges, to libraries, nonprofits, or towards a general fund to incentivize public-private partnerships – will increase opportunities for digital learning across the state. The WSBO provides additional information about how it will address digital skills and literacy training using Digital Equity funding in the forthcoming statewide Digital Equity Plan.

Expected Outcomes: Increasing access to digital skills training will benefit residents and businesses through increased engagement in the digital society and economy. Increased digital skills can result in a more technically focused workforce with access to new job opportunities, in fields such as data science that may have been previously out of reach, ultimately bolstering Washington's economy. As a result, digital skills and digital literacy training will allow previously unserved or underserved Washingtonians to take full advantage of new and expanded broadband services available to them through Digital Equity Act funded projects and potentially BEAD funding depending on the balance of funds available for nondeployment related activities.

Activity 6.2: Broaden Outreach to Covered Populations to Support Digital Inclusion

Planned Activity: Throughout the WSBO's extensive public engagement process, many programs and activities have been identified to help covered populations throughout the state and support digital inclusion. However, there is an opportunity to reach even more covered populations given expanded funding anticipated through the Digital Equity Act and BEAD funding. During public engagement events, participants shared that many of the populations these programs are trying to reach are unaware of the digital equity offerings available to them. Expanding state-sponsored outreach to covered populations will improve general awareness of resources available and identify gaps in digital inclusion programming available. Coordinating with trusted community organizations, in addition to libraries, schools, and other community anchor institutions, will provide the WSBO with a platform to act as a trusted partner and continue addressing issues

around broadband adoption, access, affordability, and digital equity. Additionally, the WSBO will focus on expanding the language translations offered for outreach materials, ensuring a broader reach for individuals that do not speak English.

Expected Outcomes: Expanding state-sponsored outreach to covered populations will improve general awareness of resources available and identify gaps in digital inclusion programming available. A description of outreach and engagement plans can be found in **Section 5.1**.

Activity 6.3: Support Statewide Cybersecurity Strategy

Planned Activity: The WSBO will coordinate with the Washington Technology Solutions, Washington State Office of Cybersecurity, and the Washington State Emergency Management Division, to identify and implement best practices regarding cybersecurity and continue to help support the statewide cybersecurity strategy.[199] Part of this will entail ensuring that subgrantees have adequate cybersecurity risk management plans in place prior to initiating deployment projects that at a minimum meets guidance outlined in the National Institute of Standards and Technology publication NISTIR 8276 and related guidance, including NIST 800-161, *Cybersecurity Supply Chain Risk Management Practices for Systems and Organizations* and specifies the supply chain risk management controls being implemented per BEAD NOFO guidance.[200]

Additionally, support for the statewide cybersecurity strategy will rely on improved digital literacy that provide training and raise awareness of resources like free antivirus software, internet crime prevention information, and information on how to protect data and privacy. The WSBO will work with digital navigators, the Digital Equity Form, and local BATs to help implement training as part of existing digital navigation programs and share resources through the WSBO's outreach and engagement activities.

Expected Outcomes: Supporting the statewide cybersecurity strategy will help maintain network infrastructure security and help increase user awareness and safety when using the internet and software applications and support overall adoption goals.

Priority 7: Increase affordability of broadband services through increasing awareness of existing programs and crafting new programs and policies

This priority focuses efforts to increase awareness of the ACP and support initiatives that would either provide direct financial assistance through new discount programs or indirectly improve broadband affordability through programs meant to increase the number of ISPs in underserved locations.

Potential Partners: Local governments, tribal governments, the WSBO, Washington Utilities and Transportation Commission (WUTC), Public Works Board (PWB), Community Economic Revitalization Board (CERB), PUDs, port authorities, Internet Service Providers (ISPs), public and private utilities, nonprofit organizations, Broadband Action Teams (BATs), Digital Equity Forum

Funding Source: BEAD funding (federal program); Digital Equity funding (federal program); ACP (federal program); State-appropriated funding; State Universal Service Surcharge

[199] Homeland Security and NASCIO (December 2017), Cybersecurity Governance in the State of Washington. Accessed at: Washington Cyber Governance Case Study (cisa.gov)
[200] NTIA (2022), BEAD NOFO. Accessed at: BEAD NOFO.pdf (doc.gov)

Activity 7.1: Establish Broadband Affordability Requirements for Subgrantees

Planned activity: Using the FCC's Urban Rate Survey and other potential sources, the WSBO will explore a requirement for subgrantees to offer service plans that provide stable and affordable prices to low-income and middle-income end-users. The FCC uses this survey to assess urban consumer broadband service rates every year allowing it to verify that universal service support recipients offer fixed broadband services do so at reasonably comparable rates to those in urban areas.[201]

Additionally, considering that collaboration will be vital to earn the support of broadband partners who may use different metrics when measuring affordability, the WSBO will continue working with WUTC, the Digital Equity Forum, and other key stakeholders to update the comparability benchmark rate and take into consideration other affordability metrics they use.

Expected Outcome: Establishing a reasonable comparability benchmark rate will ensure that broadband services provided through BEAD funding will be affordable and accessible to all households across the state, regardless of income level.

Activity 7.2: Increase ACP Adoption

Planned Activity: The WSBO will work with existing partnerships to coordinate outreach efforts to spread awareness of the ACP program. Collaboration with trusted local institutions and communities and leveraging participation in other social programs will increase ACP awareness, ultimately increasing affordability. The WSBO will continue to work with BATs and nonprofit organizations to provide targeted outreach methods to specific covered populations, as described in **Section 5.1**. Additionally, in accordance with the requirements outlined in the BEAD NOFO, the WSBO will require subgrantees to carry out public awareness campaigns in their service areas to highlight ACP benefits and the value and benefits of broadband service.

Expected Outcomes: Increasing outreach and raising awareness of the ACP program could increase in the number of affordability programs could increase the number of broadband subscribers as more households are able to afford broadband services. Additionally, as more people begin to learn and demand access to the federal program, more ISPs could begin participating in the ACP program.

Activity 7.3: Encourage the Development of ISP Broadband Discount Programs

Planned Activity: To increase the affordability of broadband services for low-income Washingtonians, the WSBO will encourage the development of low-income and middle-income service plans to reduce affordability barriers for low-income and middle-income residents and will be considered in the scoring process for subgrantee applicants. Additionally, the WSBO will work with the state legislature and other agencies that provide public funding for broadband deployment to require funding recipients to offer a discount program for low-income households.

Specifically for PUDs, the WSBO could recommend that PUDs offer low-income rates for its internet service customers similar to Jefferson County's PUD #1 program. As an example, low-

[201] Federal Communications Commission (n.d.), Urban Rate Survey Data & Resources. Accessed at: Urban Rate Survey Data & Resources | Federal Communications Commission (fcc.gov)

income rates could be made available to customers who earn either 150% of the median household federal poverty level or less or are over age 62 with a household income not exceeding $30,000 per year. In combination with the ACP subsidies available to low-income households, eligible customers could pay only $15 per month for internet.

Expected Outcomes: An increase in the number of affordability programs could increase the number of broadband subscribers as more households are able to afford broadband services.

Activity 7.4: Establish a State-Funded Telecommunications Discount Program

Planned Activity: As telecommunications discount or subsidy programs have been successful nationwide, the WSBO is working with various stakeholders to craft legislation that will potentially create a Washington subsidy program funded by various sources such as a fee placed on the sale of digital devices. Such a program could be modeled on the federally funded Lifeline program which pays $9.25 per month for broadband support per low-income household through the Universal Service Fund. The federal program also establishes minimum service standards for Lifeline-supported services to ensure maximum value for the universal service dollar and established a National Eligibility Verifier to independently identify eligible subscribers. The WSBO will continue to advocate for a state discount program, including working with BATs and nonprofit organizations to obtain feedback and raise awareness for the need of a state discount program.

Expected Outcomes: Create a sustainable broadband subsidy program that would increase the number of affordability programs available to low-income households, thereby increasing broadband adoption broadband subscribers, as more households would be able to afford broadband subscriptions and services.

5.3 *Key Execution Strategies*

Key execution strategies are the glue that hold together the planned activities and the priorities. As depicted in **Figure 13**, the key execution strategies in this Plan can be grouped into three categories: partnerships, process, and data and technology.

- Partnerships: Building and maintaining community trust and strong stakeholder relationships that emphasize partnerships and making connections
- Process: Having the procedures, systems, and tools in place for monitoring and compliance of grants, project delivery, and technical assistance
- Data and Technology: Collecting and analyzing critical data to help inform decision making and measure progress towards goals and adequate technology to effectively manage program data

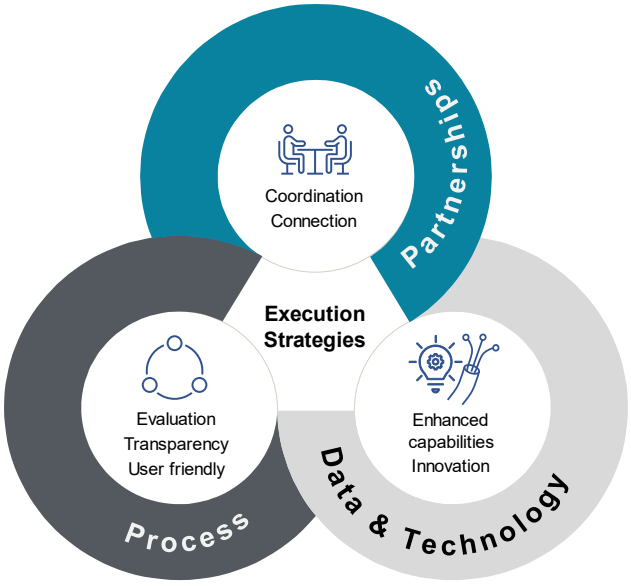


Figure 13: Partnerships, Process, Data and Technology Execution Strategy Framework

5.3.1 Partnership-Related Strategies

BUILD RELATIONSHIPS AND COORDINATE ACTIVITIES WITH DIVERSE PARTNERS FOR OUTREACH AND ENGAGEMENT

While a lack of broadband access is often viewed primarily as a technology problem, barriers such as the lack of information or the lack of devices also have a large impact. Yet, simply offering digital literacy training or broadband access points will not address these issues unless the information about such programs comes from an individual or organization that a person trusts. As a result, achieving universal access and ensuring that everyone can reap the benefits of access to technology regardless of who they are or where they live, will rely on the state's partnerships with community members and organizations who have already established connections serving diverse populations across the state.

Example partnership

The WSBO funded four focus groups run by Equity in Education Coalition focusing on low-income Spanish-speaking immigrant farmworkers living in rural communities to help identify barriers and needs in these communities.

Section 5.1 describes the public engagement process that was undertaken in the development of this plan and potential additional outreach and engagement methods for ongoing engagement with communities during the BEAD program. Building from that section where potential partners were identified, it will be important for the WSBO to continue to develop relationships with potential partner organizations who can partner on direct outreach and engagement to underrepresented communities. This will expand the reach of any outreach and engagement beyond what the state broadband office can conduct. Also, in recognition that trust is an important element of communication, working with community-based organizations who are viewed as trusted sources of information is critical to overcome barriers to adoption and understand nuances of communication since there may be varying levels of trust towards government and government programs within various communities related to socioeconomics, politics, and lived experiences.[202] There may also be more trust and familiarity with local or tribal government than state government programs and agencies, which is why it will also be important for the state to work closely with local and tribal governments in achieving universal access goals.[203] For example, tribal governments and community-based organizations run by tribal members may be the most well-positioned to conduct outreach and engagement directly with tribal members. Closer partnerships will ensure that data used by the state for planning purposes accurately reflects tribal needs and also that tribes have access to data that supports their broadband planning and digital equity efforts.[204]

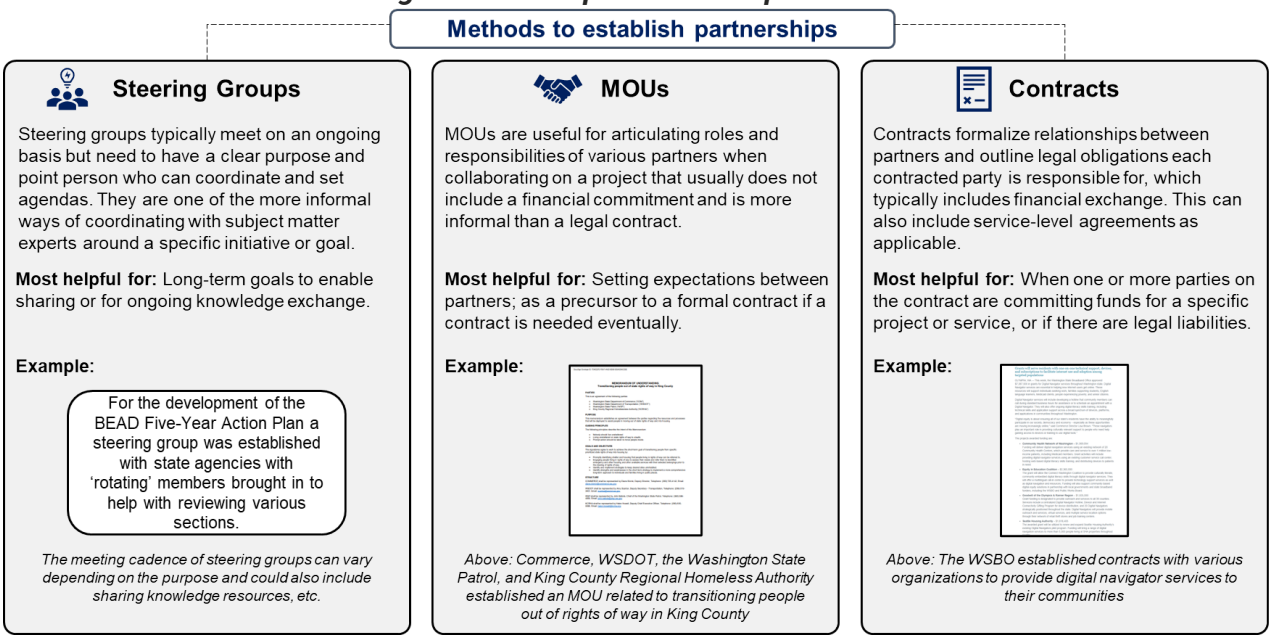
WORK WITH PARTNERS TO CARRY OUT ACTIVITIES

Achieving this Five-Year Action Plan's goals, and the state's even more ambitious broadband speed goals, will truly be a statewide effort, requiring the WSBO to work with numerous partners

[202] Cary Wu, Rima Wilkes, and David C. Wilson (November 15, 2022), Race & Political Trust: Justice as a Unifying Influence on Political Trust. Accessed at: https://direct.mit.edu/daed/article/151/4/177/113712/Race-amp-Political-Trust-Justice-as-a-Unifying
[203] Pew Research Center (June 6, 2022), Americans' Views of Government: Decades of Distrust, Enduring Support for Its Role. Accessed at: https://www.pewresearch.org/politics/2022/06/06/levels-of-government-federal-state-local/
[204] Alex Tammaro (June 13, 2022), Native Data Sovereignty Can Address Data Gaps and Improve Equity. Accessed at: https://www.urban.org/urban-wire/native-data-sovereignty-can-address-data-gaps-and-improve-equity

based on the specific set of skills or expertise required to implement any of the aforementioned activities outlined in **Section 5.2.** The type of activity will also inform what partnership method the WSBO may need to use, ranging from informal methods, such as steering groups, to more formal methods, such as contracts or agreements, as **Figure 14** describes.[205]

Figure 14: Example Partnership Methods



One example of a partnership method that was employed in the development of this plan and the Digital Equity Plan is to work with a steering group to act as a sounding board for ideas, to provide information, and to make sure that work is not completed in a 'silo'. The steering group acts as an advisory resource who may not conduct the day-to-day activities but can provide guidance on program delivery.

Additionally, the WSBO has already identified partnership methods it anticipates using to address BEAD priorities in **Section 5.2**. For example, the WSBO outlines the use of a broadband workforce taskforce in **Section 5.2 - Activity 5.1** to convene a diverse group of stakeholders to help the state prepare and respond to workforce gaps resulting from the implementing BEAD-funded projects. Other activities may not specify the exact partnership method that the WSBO will use at this time, the WSBO is working to develop these strategies to best address issues that arise for the duration of the BEAD program. For instance, beyond the development of this Five-Year Action Plan and the Digital equity plans, it may also be beneficial to develop steering groups to accomplish specific activities such as coordination on the development of a Dig-Once policy – **Section 5.2 - Activity 3.2** – and overall timelines for BEAD deployment projects that may require access to WSDOT rights-of-way – **Section 5.2 - Activity 3.1**.[206] Similarly, increased on-the-job training with ISPs – **Section 5.2 - Activity 5.3** – may require more formalized agreements between ISPs and education institutions or labor organizations, depending on the job position in question.

[205] Additionally, some partnerships may start out informally and evolve into a partnership that needs to be formalized through a contract.

[206] Washington State Joint Transportation Committee (January 19, 2022), Broadband Access to State Highway Right-of-Way. Accessed at: https://wstc.wa.gov/wp-content/uploads/2022/01/2022-0119-BP8-BroadbandDeployment.pdf

5.3.2 Process-Related Strategies

Establish criteria for fair labor practices that adhere to both federal and state requirements

As outlined in the BEAD NOFO, ensuring that there is a process in subgrantee selection to evaluate compliance with federal and state labor and employment laws will be an important process strategy. Criteria to evaluate compliance with fair labor practices will be considered and outlined in greater detail as part of the Initial Proposal. For example, Washington has the Washington State Minimum Wage Act, which establishes minimum wage standards which can be exceeded, but cannot be waived or reduced and establishes that when state law differs from the federal Fair Labor Standards Act, employers must comply with the standard most generous to employees including for overtime.[207] The WSBO will also reach out to stakeholders from labor unions and other labor organizations to discuss fair labor practice criteria.

Establish an efficient and transparent challenge process and aim to minimize the number of formal challenges that will need adjudication

The WSBO will work to develop an efficient and transparent challenge process to reduce delays for both challengers and challenge respondents and ensure the most accurate representation of serviceable location designations as unserved, underserved, or served. The challenge process will adhere to requirements laid out in the most recent BEAD Challenge Process Policy provided by the NTIA. Additionally, lessons learned from previous state administered broadband grant programs will be applied, which include potentially holding round table discussions with ISPs in advance to discuss project areas for unserved and underserved areas reducing the need to go through the formal challenge process.

Provide user-friendly guidance

Providing clear and easy to follow grant application guidance, templates, and technical assistance materials will help to encourage more applicants with a competitive subgrantee pool and for subgrantees to meet goals once selected. Holding technical assistance sessions for potential subgrantees prior to grant submissions will also be a valuable resource. Further, developing a user-friendly grant application toolkit – like the resources that the NTIA provided for eligible entities – can be an additional valuable resource to help ensure compliance and provide capacity support for subgrantees.

5.3.3 Data and Technology-Related Strategies

Enhance geospatial data collection and analysis capabilities

Maintaining and analyzing geospatial data has been foundational to identifying unserved and underserved locations across the state and will continue to be an essential part of the challenge process. Additionally, as project areas are selected and construction milestones are reached, it will be critical to maintain accurate geospatial data records relating to projects to assist in tracking progress towards universal access goals. The WSBO is currently increasing geospatial analytical capabilities internally and will work on developing data sharing agreements with relevant partners to update its broadband asset inventory. This can support efficient planning and

[207] Washington State Legislature (n.d.), RCW 49.46.020. Accessed at: https://app.leg.wa.gov/rcw/default.aspx?cite=49.46.020

improve coordination between relevant agency data owners. A public facing Digital Equity portal is under development that will feature mapping of data related to availability, affordability, and adoption, providing potential subgrantees and WSBO partners access to information, such as speed test results, ACP enrollment rates, and funded project areas, that they can use to identify existing needs and gaps and design targeted solutions. The dashboard will be available to the public in December 2023 and will be aligned with Digital Equity Plan metrics with the potential to include information related to BEAD deployment projects.

Encourage innovative technological approaches to broadband deployment

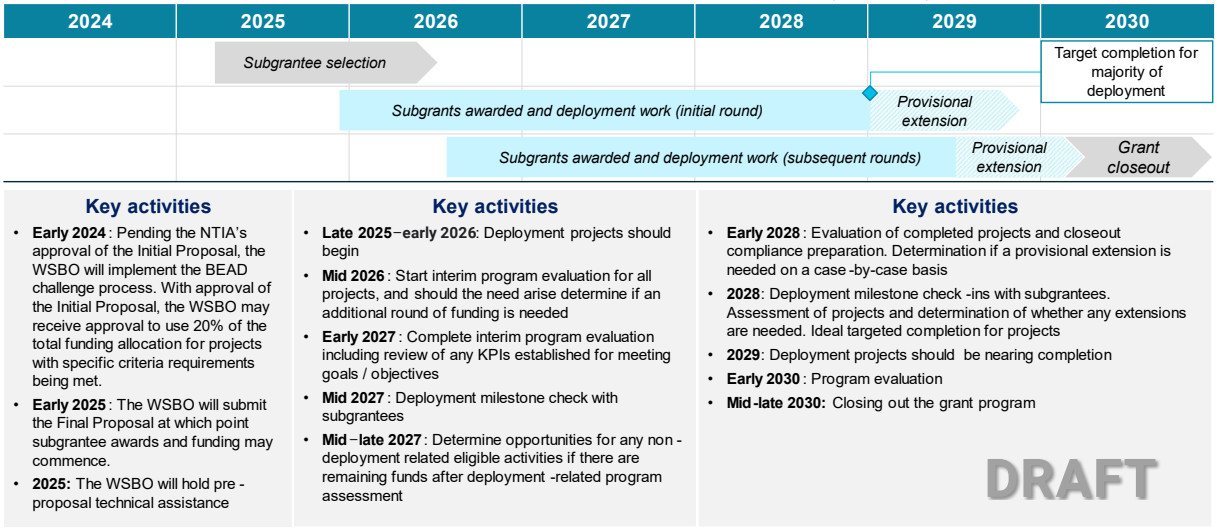
While end-to-end fiber will remain a priority for BEAD funding, the WSBO will work to explore innovation in how fiber projects are delivered. One illustration of innovation is 'fiber in water' whereby fiber to the home is provided by installing small conduits into pre-existing water supply lines helping to reduce the cost of digging a trench or stringing cables across a property to reach a customer.[208] A combination of fiber and alternative technologies that can reach unserved high-cost locations will also be studied. For example, the WSBO is currently undertaking a feasibility study funded by the Washington legislature in 2023 of low-earth orbit satellite technology, which the state may need to rely on in areas where fiber and fixed wireless is not an option.

[208] Eric Wilkinson (October 2, 2019), Anacortes using water pipes to deliver high-speed internet. Accessed at: Anacortes using city's water pipes to deliver high-speed internet | king5.com

5.4 Estimated Timeline for Universal Service

The BEAD NOFO requires subgrantees to deploy funded networks and begin providing broadband service to each customer "not later than four years after the date on which the subgrantee receives the subgrant" with a maximum one-year extension under specific circumstances as determined by the NTIA.[209] Accordingly, the WSBO has developed the following estimated timeline based on the assumption that once the NTIA has approved the Initial Proposal in the first half of 2024, the WSBO may disburse the initial 20% of BEAD funding and the remaining 80% after it submits and receives NTIA approval for the Final Proposal, as **Figure 15** shows. However, this timeline is dependent on approval from the NTIA and should be interpreted as a working draft. Key activities are focused on activities that the WSBO will need to complete rather than on deployment related activities as subgrantees will need to develop their own project-specific timelines that fall within the BEAD four-year requirement.

Figure 15: Universal Service Timeline (DRAFT)



*The timeframes for selecting subgrantees listed above is contingent on NTIA's approval of proposals

The target end date will be 2028 for completion of deployment related projects, but in recognition that there may be unforeseen delays and extenuating circumstances a provisional extension timeline is included. We discuss the grant-related activities required to meet these federal deadlines below.[210]

- **2023**: The WSBO will submit this Plan and the Initial Proposal by the end of the year.
- **2024**: Pending the NTIA's approval of the Initial Proposal, the WSBO will begin implementing the BEAD challenge process. With approval of the Initial Proposal, WSBO may receive approval to use 20% of the total funding allocation for projects with specific criteria requirements being met.

[209] NTIA (2022), BEAD NOFO. Accessed at: NTIA Notice of Funding Opportunity Broadband Equity, Access, and Deployment Program
[210] Although not included in the timeline discussion above, the state will also need to coordinate with other federal and state funded broadband program timelines to assess progress towards universal service. For example, the Rural Digital Opportunity Fund is distributed over a 10-year period – the last auction ended in November 2020 – with interim deployment milestones in 2024 and 2025 depending on when carriers were first authorized.
See: Universal Service Administrative Co. (n.d.), Rural Digital Opportunity Fund. Accessed at: Rural Digital Opportunity Fund.

- **2025:** The WSBO will submit the Final Proposal at which point subgrantee awards and funding may commence.
- **2025 to 2028**: Most of the deployment milestones should be well underway or nearing completion.
- **2028 to 2030**: Almost all projects should be completed with evaluation for provisional extensions on a case-by-case basis. Final program evaluation and grant closeout activities will take place.

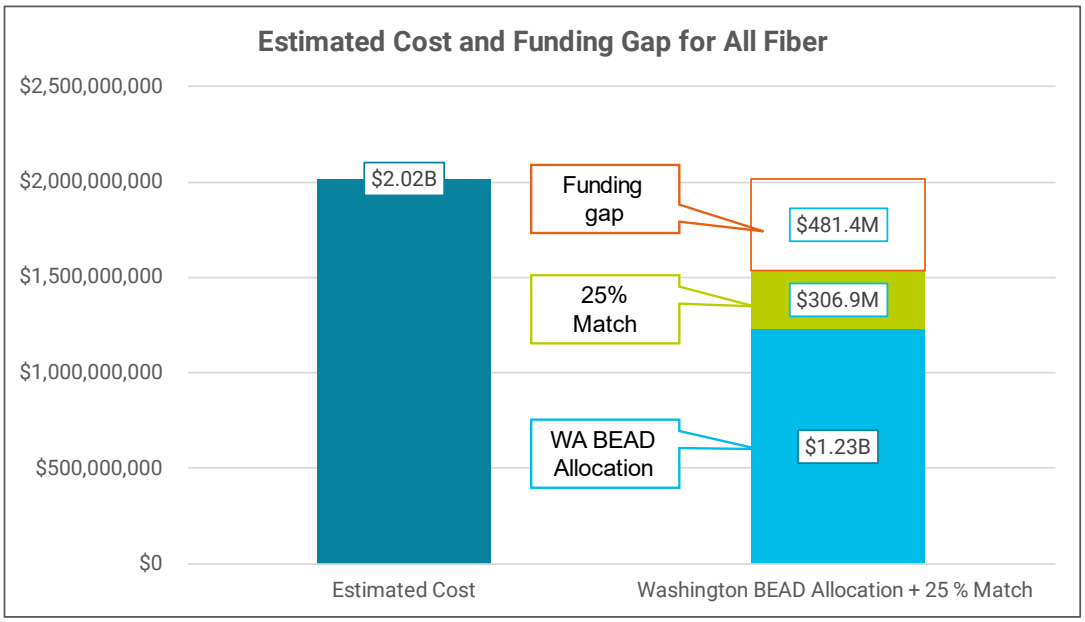
Additional considerations that may affect the timeline: This list is non-exhaustive, but some particularly salient issues discussed with ISPs include, permitting, delays related to "make ready" issues, labor shortages, supply chain issues, and regulatory requirements.

5.5 *Estimated Cost for Universal Service*

A density cost model was the basis for estimating the cost for universal service, with calibrations made using Washington state specific broadband deployment project costs with an estimated cost of approximately $2.02 billion to serve all identified unserved – over 236,000 – and underserved locations – over 79,000 – in the state based on all fiber technology. This is a high-level estimate that could increase with analysis conducted with the 'Extremely High-Cost Threshold Support Tool' that is anticipated to be released by the NTIA as part of the eligible entity toolkit late in August 2023. It also does not account for individual project level design considerations which may increase project costs. However, even without accounting for potential additional project costs, this baseline estimate indicates that it is unlikely that all unserved and underserved locations can be served by fiber with the BEAD allocation. Washington state's BEAD allocation is nearly $1.23 billion.[211] With the required 25% matching funds that would make approximately $1.53 billion available through the BEAD program. This would still leave a gap of approximately $481 million to pursue an all-fiber buildout as shown in **Figure 16**. A hybrid approach of technologies with lower deployment costs will likely be needed for very high-cost locations, in addition to working with subgrantees to incentivize matching funds greater than 25% and looking for ways to lower deployment costs for fiber projects.

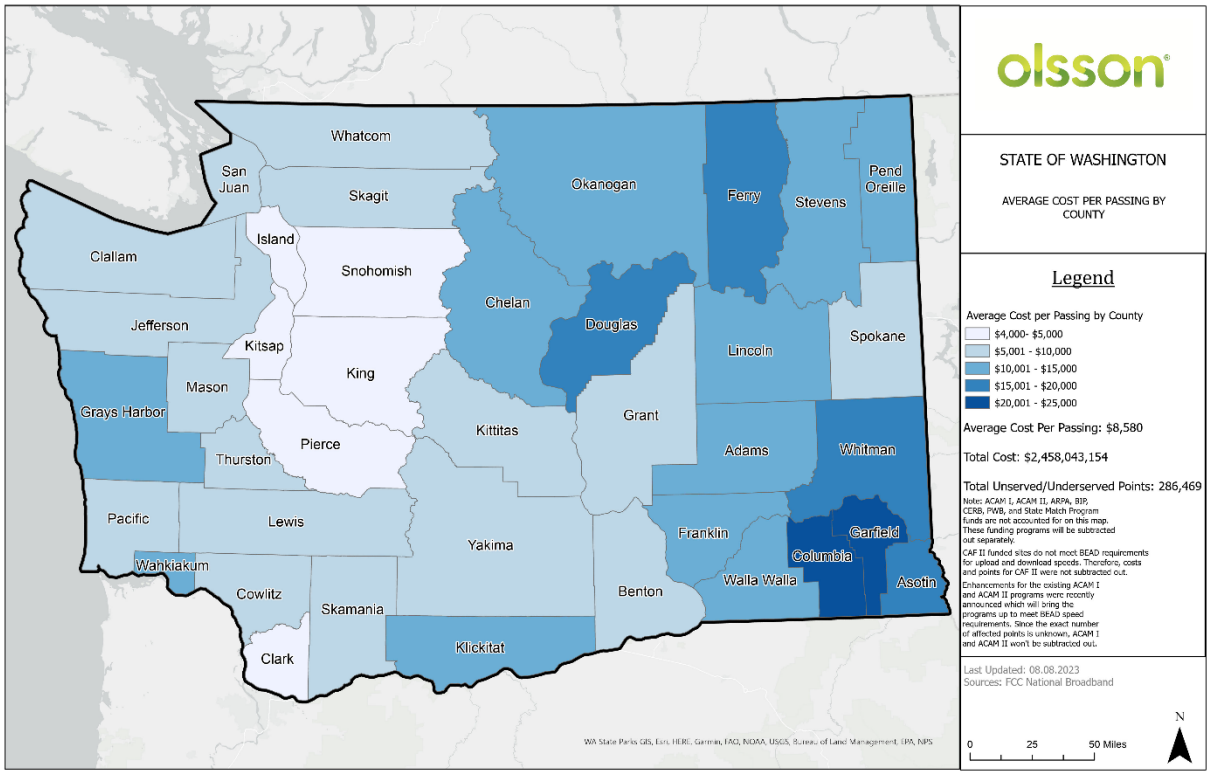
[211] The exact state allocation amount is $1,227,742,066.30, which was announced by the Biden-Harrison Administration on June 26, 2023. NTIA (June 26, 2023), Biden-Harris Administration Announces State Allocations for $42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda. Accessed at: Biden-Harris Administration Announces State Allocations for $42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda | National Telecommunications and Information Administration (ntia.gov)

Figure 16: Graph of estimated cost for funding all fiber deployment and funding gap



A summary of estimated costs for serving all unserved and underserved areas in the state is presented in **Table 26.** The net cost was calculated after deducting the previously funded amounts and deduplicating the number of locations that will be served by other programs from the gross cost estimate. The average cost per passing after deduplication was $8,825 when averaged across the whole state. However, the state average only tells part of the story. There will be a wide range of average cost per passing by county varying by region as illustrated in **Map 21** with some counties potentially exceeding $20,000 for the average cost per passing such as Columbia and Garfield Counties in the southeast corner of the state.

Map 21: Average Cost Per Passing Range by County for Unserved and Underserved Address Points



Note: This map does not account for ARPA, BIP, State Match Program, CERB, and PWB funding programs. These programs are subtracted out later as described in **Appendix 7.13.2**.

A comparison of the cost estimate by county from the method used in this Plan as compared to the rapid design studies conducted by Breaking Point Solutions is in **Appendix 7.13.**

Table 26: Estimated Cost for All Fiber Universal Coverage

	Total Cost	Unserved / Underserved Locations	Average Cost Per Passing
***2023 Gross Cost**	$2,458,043,154	286,469	$8,580
****Previously Funded to subtract**	$441,970,241	-58,028	
2023 Net Cost	$2,016,072,913	228,441	$8,825

*19% inflation from June 2019 to June 2023
** See **Table 27** - Summary of Previously Funded Programs Not Accounted for in GIS (as of June 2023)

The following approach was used to estimate the cost for universal service in Washington:

1. Identify the number of unserved and underserved locations based on the FCC National Broadband Map, after removing locations that overlap with already funded projects.
2. Analyze at the census block level on a housing density basis – Living Units per Square Mile – and applying an appropriate build cost per density threshold. Build costs will be determined from market data and previously awarded grant projects.

3. Start with an estimate for all fiber as high range of cost estimate, and then adjust to include a proportion of locations served by alternative technologies that still meet broadband speed requirements.
4. Alternative technologies such as fixed wireless or low-earth orbit satellites – not covered under BEAD – could be employed to at least provide an improved level of service even if not meeting overall speed and reliability targets as an interim solution, but at this time the estimate is based on a fiber only model.
5. Group analysis by county and aggregate. Compared with local and tribal estimates and rapid design assessments to iterate and calibrate estimate.

Additional details related to the identification of unserved and underserved locations, how previously funded programs were accounted for, and how cost modeling and cost calibrations were conducted are included in **Appendix 7.13**.

5.6 *ALIGNMENT*

Achieving the state's vision for broadband deployment, access, adoption, affordability, and digital equity – as laid out in this BEAD Five-Year Action Plan – will positively impact other statewide goals, such as economic and workforce development, educational attainment, transportation, healthcare, environmental sustainability, agriculture, and the delivery of other state services.

5.6.1 Alignment with Existing Broadband Plans

The WSBO has published multiple reports on the status of broadband deployment in the state, outlining vision and goals for broadband connectivity and digital equity in Washington. The most recent 2022 Biennial Legislative Report shaped this BEAD Five-Year Action Plan's development, with much of the Asset Inventory, Needs and Gaps, Obstacles and Barriers, and Implementation Plan insights coming directly from the 2022 Biennial Legislative Report. In addition to identifying unserved and underserved areas, three primary network deficiencies were uncovered across the state:

- Bandwidth demands exceed network design and scalability.
- Currently deployed technology is incapable of scaling to universally meet state speed goals.
- Incomplete residential and business access to affordable, reliable, high-speed internet service.

Based on the unique challenges facing Washington, this Plan focuses on priorities and planned activities that will address those obstacles, with the visions, goals, and objectives from the 2022 Biennial Legislative Report intertwined throughout.

5.6.2 Alignment with Digital Equity

Digital equity is an essential component of universal access, and this BEAD Five-Year Action Plan has been developed in close coordination and collaboration with digital inclusion experts and nonprofits, the Washington State Office of Equity, and the WSBO's Digital Equity manager.

Digital Equity Plan

Washington's Digital Equity Plan – which is still in development – will build upon the digital inclusion tenets included in this BEAD Five-Year Action Plan and detail the state's digital equity priorities and plans. The digital equity strategies and components included in this BEAD Five-Year Action Plan draw from and are consistent with ideas outlined in the Digital Equity Plan, with a particular focus on feedback from public engagement sessions.

Digital Equity Forum[212]

This Plan has also been developed in alignment with findings from the Digital Equity Forum, an effort undertaken and co-led by the WSBO and the Washington State Office of Equity. The Digital Equity Forum appointed 29 individuals representing numerous communities, with an additional four elected officials serving in an ex-officio capacity. From feedback provided to the Digital Equity Forum about the state of digital equity in Washington, four key themes emerged:

- Higher quality broadband service: Faster and more reliable service needs to be available to more people at more affordable rates and from more providers.
- Expanded access: Expansion of broadband internet access must be coupled with culturally informed efforts to elevate digital literacy and digital skills for broader adoption to occur.
- Quality equipment is needed: Varied quality of internet access equipment (such as modems, Wi-Fi routers, etc.) negatively affects broadband access.
- Role of state government: There is a desire to see internet service provider deficiencies addressed through effective regulation and the development of new state programs and initiatives to more effectively underserved communities.

These broader themes have been rolled up into this Plan to ensure alignment. A desire for higher quality broadband service and expanded access both relate to plans to roll out broadband access in unserved and underserved locations, especially for covered and underrepresented populations. Expanded access also involves an increase in digital literacy and digital skills building to increase broadband adoption, relating to planned activities described in this BEAD Five-Year Action Plan. The Digital Equity Forum also highlighted a need for quality equipment, which is represented in **Section 3.3.4**. The last theme that emerged from the forum is the desire to address broadband deficiencies through government intervention. The disbursement of BEAD funding and the creation of this BEAD Five-Year Action Plan are emblematic of the increased role of state government in the provision of broadband services.

5.6.3 Alignment with Other Washington State Priorities

To successfully reach the goals and priorities previously described in this BEAD Five-Year Action Plan, the WSBO will coordinate with other Washington government departments to ensure alignment between this BEAD Five-Year Action Plan and Washington's other strategic priorities

[212] Washington State Department of Commerce (April 4, 2022), Digital Equity Forum Report. Accessed at: CommerceReports_2022_LGD_Digital Equity Forum_Final_4.4.23.pdf | Powered by Box

and efforts across economic and workforce development, education, transportation, healthcare, environmental sustainability, agricultural, and more. The purpose of this section of the report is to outline other state goals and initiatives that complement or benefit from the BEAD program's implementation and identify potential partners that the WSBO could work with when implementing the activities discussed in **Section 5.2**.

5.6.3.1 Workforce Development

This Plan's goals and objectives related to broadband adoption and digital equity will further Washington state's workforce development goals in three ways:

1. Increase access to devices and technical support to enable Washington residents and businesses to engage in the economy and workforce fully.
2. Enhance digital skills of current and future workforce to encourage engagement and productivity.
3. Provide greater accessibility of state resources to foster workforce engagement.

2020 Talent and Prosperity for All Plan[213]

Universal Access Across the Workforce System

Universal accessibility is fundamental to the Workforce Board's vision for the workforce system. Washington's workforce system must be prepared and able to serve jobseekers from all kinds of backgrounds, who face many different barriers. Universal accessibility encompasses both physical accessibility of all facilities, as well as programmatic accessibility – considering the access needs of all customers. Integration of service delivery and better coordination among workforce system partners will allow services and delivery approaches to be customized to meet a wide range of needs. A truly accessible workforce system is one that makes full use of technology, which requires the provision of universal broadband services and directly aligns to the overall vision of this BEAD Five-Year Action Plan.

Identifying and Removing Barriers to Workforce Services

The Workforce Innovation and Opportunity Act (WIOA) incentivized Washington's workforce system to address and remove barriers to access so that a greater number of residents can connect with a career pathway and a living-wage job. The following barriers faced by vulnerable populations intersect with the vision and goals of this BEAD Five-Year Action Plan:

- Inability to access necessary language translation services or accessibility devices
- Lack of reliable online access
- Lack of up-to-date accessibility equipment
- Inability to successfully utilize technology resources

Technology is a Powerful Tool to Remove Barriers

[213] Washington Workforce Training and Education Board (April 2022), Talent and Prosperity for All. Washington PYs 2022-2023 (Mod)

Advances in personal computing and telecommunications technology have made the internet and person-to-person connectivity integral to many people's daily lives. WIOA acknowledges these improvements by opening the door to "virtual" service delivery—bringing services each participant needs to their doorstep, or kitchen table. The following recommended strategies embrace technology – and by proxy, broadband service – to achieve a more accessible workforce system.

Virtual Service Delivery

With WIOA, education and training services are no longer required to be administered in person. The availability of online, real-time, hybrid (blended online and face to face), and open-source course materials warrants close system collaboration. Beyond simply providing access, the system must help customers gain the skills to effectively use these new technological tools. Video conferencing technology, for example, is widely available and less expensive than in years past. Reducing or eliminating the need for customers to travel and physically access a one-stop center for education and training services will remove accessibility barriers for many Washingtonians.

Services offered virtually via computer, tablet, or smartphone empower people with mobility challenges, or anyone preferring to access information remotely. These tools allow them to begin progressing down a career pathway on their terms and at a time and location more convenient to them. Virtual service delivery helps customers with childcare or transportation barriers make progress toward a better future. A parent can hop online when the kids are asleep and gain access to services, or a family who lacks a car can avoid making several bus transfers to reach a one-stop center--if the center is reachable by bus at all. Many rural Washingtonians live hours away from the nearest comprehensive one-stop center. Accessing these services at home just makes sense. Library systems statewide have expressed interest in partnering with the workforce system to create "remote connection sites" strategically located around Washington.

Promoting Open Education Resources

Washington's 34 community and technical colleges provide a wide range of open education resources (OERs), online courses, and e-Learning strategies to workforce system customers. These resources allow working adults and place-bound customers who are far from a college or university campus to access education when it fits their work and life schedules. OERs are teaching and learning materials that reside in the public domain or have been released under an open license. These resources may be used free of charge, distributed without restriction, and modified without permission. Often, OERs take the form of digital textbooks, video lectures, assessments, and new forms of "gamified" multimedia education experiences. Washington's community and technical colleges are leaders in the OER movement, ready to share their expertise with the entire workforce system.

Promoting eLearning

Washington's public higher education institutions also offer a wide array of e-Learning strategies that can be integrated into the workforce system where appropriate. E-Learning is high quality online instruction and assessment that allows students to study and learn on their own

schedules. Customers with physical, sensory, behavioral health, or cognitive disabilities, as well as rural populations and economically disadvantaged communities, can benefit from online instruction tailored to their needs.

Using technology to remove barriers to workforce solutions is essential to Washington's 2020 Talent and Prosperity for All Plan, which will be bolstered by the provision of broadband service to unserved and underserved locations from the disbursement of BEAD funding across the state. Increasing locations served by broadband will allow virtual services, open education resources, and eLearning to be provided to residents and communities who did not previously have access, which will ultimately improve the accessibility of Washington's workforce system.

5.6.3.2 Economic Development

Washington state strives to enhance its economy and develop its workforce through increased access to broadband and digital equity across the state, as resources to find jobs, conduct business, and develop skills are now more likely to be found online. This BEAD Five-Year Action Plan's vision to provide universal access to all Washingtonians will support the state's short- and long-term plans for economic and workforce development.

For Washington State Department of Commerce (DOC), creating a prosperous, sustainable economy goes hand in hand with building world-class communities. As the economic development agency, the Department of Commerce focuses on strengthening Washington's key industries, expanding international trade, helping small businesses grow, providing training to a new generation of workers, providing access to funding, and supporting the work of local economic development partners in each of Washington's 39 counties.

The state's key sector strategy focuses on targeted industries that can spur rapid growth, including aerospace, agriculture and food manufacturing, clean technology, information and communication technology, life science/global health, maritime, forest products, and military and defense, all of which benefit from high-speed, reliable broadband service. To help small businesses across the state succeed, the DOC offers a range of programs designed to meet the specific needs of small businesses, including education and technical assistance. This core component of statewide economic development strategy ties to Goal One: Universal Access and Goal Two: Equitable Economic Development, as education and technical assistance encompass eLearning, digital skill building, and digital literacy programs. As heard through public engagement sessions, there are some businesses without broadband service. Deploying broadband to unserved and underserved regions will provide previously offline businesses with the opportunity to join the digital economy and expand their operations using internet resources.

Creative Economy Strategic Plan[214]

The 2022 Creative Economy Strategic Plan aims to ensure that the state of Washington is competitive with respect to attracting creative economy business, retaining talent within the state, and developing marketable content that can be exported for national and international consumption and monetization. As defined by the DOC, the creative economy includes creative

[214] Washington State Department of Commerce (March 3, 2022), Creative Economy Strategic Plan 2022 Update. Accessed at: Legislative Report v3.2 (wa.gov)

technology, music and performing arts, and visual arts, among other sectors. In line with statewide digital equity goals, the strategic plan addresses support for the creative community within historically marginalized communities, as well as the creative economy at large, and considers the diverse interests, strengths, and needs of Washington's population on both sides of the Cascade mountains. As the creative economy includes creative technology and Washington state seeks to identify opportunities to integrate new technologies, the provision of broadband to unserved and underserved communities is essential to achieving the state's strategic goals. Additionally, ensuring that the creative economy benefits Washingtonians on both sides of the Cascade mountains aligns with this BEAD Five-Year Action Plan's focus on digital inclusion and implementing a more equitable approach to broadband connectivity.

Results Washington Strategic Plan (2022 - 2025)[215]

Results Washington was established by Governor Jay Inslee in 2013 to build on a long Washington state history of leading the nation in public-sector performance management and continuous improvement. Results Washington's five goal areas are: (1) world class education; (2) prosperous economy; (3) sustainable energy and clean environment; (4) healthy and safe communities; and (5) effective, efficient, and accountable government. Increased broadband connectivity supports all five goals, allows for greater transparency of state government results, and highlights agency performance by providing updates on state government websites that can be accessed by all Washingtonians.

5.6.3.3 Education

Washington State Office of Superintendent of Public Instruction

OSPI Strategic Goals[216]

OSPI supports and empowers students, educators, families, and communities through equitable access to high-quality curriculum, instruction, and supports. OSPI's shared focus is supporting all the state's learners by providing coordinated, data-driven resources and supports to school districts. OSPI is committed to eliminating opportunity gaps and to supporting students furthest from educational justice. The following goals are intended to support progress:

- Equitable Access to Strong Foundations: Increase student access to and participation in high-quality early learning and elementary by amplifying and building on inclusive, asset-based policies and practices.
- Rigorous Learner-Centered Options in Every Community: Provide all students with access to challenging coursework, culturally responsive and anti-racist curriculum, and pathways to graduation and beyond that meet their unique interests.

[215] Results Washington (2022), Strategic Plan 2022-2025. Accessed at: Results Washington Strategic Plan (wa.gov)
[216] Washington Office of Superintendent of Public Instruction (n.d.), Strategic Goals. Accessed at: OSPI Strategic Goals.pdf (www.k12.wa.us)

- A Diverse, Inclusive, and Highly Skilled Workforce: Prepare all students with educators who are reflective of our global society by increasing access to a workforce that is diverse, culturally responsive, and racially literate.
- A Committed, Unified, and Customer-Focused OSPI: Support school districts through consistent, timely, and meaningful funding and support that center the needs of students. Agency operations are unified in facilitating services and resources in alignment with the commitments in our strategic goals.

OSPI's strategic goals directly align with the vision, goals, and objectives of this Plan, as demonstrated through the office's Strategic Goals, and corroborated via an interview conducted with OSPI for stakeholder engagement. Providing students with Equitable Access to Strong Foundations is intrinsically related to the equitable provision of broadband access and devices across K-12 schools. Improving access to affordable and high-speed internet to all students, but particularly those who represent covered populations, may improve the ability of those students to engage in education online and ensure that they have the digital skills and devices necessary to access educational opportunities.

5.6.3.4 Transportation

Washington State Department of Transportation

Coordination between the WSBO and the Washington State Department of Transportation (WSDOT) is essential as WSDOT continues to make changes enacted under Chapter 258, Laws of 2021. The bill elevates the dig-once concept and authorizes WSDOT to lay conduit and retain ownership of it for leasing to ISPs, elevating broadband infrastructure to utility status when it comes to process and procedure. Funds for this activity come from the DOT-Motor Vehicle Fund and WSDOT has already started laying conduit. The establishment of a Dig-Once policy is crucial to broadband deployment, as coordination between infrastructure projects will reduce overall costs. Additionally, WSDOT-owned conduit will be an important asset to laying fiber throughout the state, as it protects fiber lines from damage.[217]

Broadband Access to State Highway Right-of-Way Study[218]

This study was commissioned by ESHB 1457 to facilitate the development of right-of-way (ROW) related strategies that can help provide universal broadband access across Washington. This BEAD Five-Year Action Plan aligns with the ROW Study as WSDOT's ROW is conducive for middle-mile and long-haul broadband infrastructure deployment that can enable last-mile connectivity to assist in meeting the needs of unserved and underserved households. The ROW Study also suggests implementation strategies for WSDOT regarding recommended roles and responsibilities for WSBO and the DOC, a ROW implementation strategy, and recommended ROW administration and partnership approaches. Additionally, it notes that developing and adopting "Dig-Once" or a similar policy can have two positive impacts: (1) it can result in efficient coordination of broadband infrastructure installation with highway construction and other utility infrastructure; and (2) it can help facilitate accelerate broadband more effectively by creating an environment of collaboration and information sharing among government agencies and broadband providers. The ROW Study again aligns with this BEAD Five-Year Action Plan as it recognizes the importance of a Dig-Once policy and the benefits that the policy can have on broadband deployment efficiency and effectiveness.

5.6.3.5 Healthcare

Washington State University (WSU)

Rural Health Initiative[219]

Access to health care providers in rural Washington continues to be a challenge for those residents and it's estimated that 600 new providers are needed to eliminate this gap in access to care. Residents living in rural Washington rely on their local pharmacies and clinics for their health care needs, but many of these pharmacies have unfortunately gone out of business, leaving these communities with limited options for health care. To address this issue, WSU spearheaded the

[217] WSBO (2022), 2022 Biennial Legislative Report. Accessed at: Broadband Office 2022 Biennial Legislative Report
[218] KPMG (December 2021), Broadband Access to State Highway Right of Way Study. Accessed at: KPMGBroadband_FinalReport.pdf (wa.gov)
[219] Washington State University (n.d.), Rural Health Initiative. Accessed at: Rural Health Initiative | Pharmacy and Pharmaceutical Sciences | Washington State University (wsu.edu)

Rural Health Initiative, a 10-year plan to create pathways for student pharmacists and post-graduate pharmacists to specialize in the delivery of rural health care. Although efforts will initially focus on rural areas in the central and eastern regions of Washington state, the goal is for all rural areas of the state to eventually be served.

An increase in broadband service across unserved and underserved regions of the state – many of which are in rural areas – will greatly assist the Rural Health Initiative. Increased broadband service allows for increased telehealth services, which can fill the interim health care service gap as student and post-graduate pharmacists are completing their studies. Further, telehealth allows rural residents to access health care services beyond what is available in their local communities.

Washington State Department of Health (DOH)

Transformational Plan: A Vision for Health in Washington State[220]

The Transformational Plan reenergizes DOH's commitment to health for all by creating policies and condition for everyone to live their healthiest lives. The Transformational Plan provides a roadmap for how and where the state will prioritize efforts. The following list contains the priorities and vision for transformational health in Washington state.

1. Health and wellness: All Washingtonians can attain their full potential of physical, mental, and social health and well-being
2. Health systems and workforce transformation: All Washingtonians are well served by a health ecosystem that is robust and responsive, while promoting transparency, equity, and trust.
3. Environmental health: All Washingtonians will thrive in a broad range of healthy environments – natural, built, and social.
4. Emergency response and resilience: All Washington communities have the information and resources they need to build resilience in the face of myriad public health threats and are well-positioned to prepare for, respond to, and recover from emergencies and natural disasters
5. Global and one health: All Washingtonians live in ever-connected environments that recognize and leverage the intersection of both global and domestic health as well as the connection of humans, animals, and the environment.

The Transformational Plan aligns with this BEAD Five-Year Action Plan in its goal to improve the health systems available to all Washingtonians. Particularly, for residents and communities in more remote parts of the state, broadband connectivity provides access to telehealth services that allows Washingtonians to access health care services from the comfort of their own home. For those with health conditions, the ability to connect with a health care provider from anywhere in the state gives residents in rural and remote areas greater flexibility for their care. Additionally, as heard in public engagement listening sessions in rural parts of Washington, some health care providers do not have access to broadband services at their homes, making it difficult to respond

[220] Washington State Department of Health (2022), Transformational Plan: A Vision for Health in Washington State. Accessed at: DOH Transformational Plan: A Vision for Health in Washington State

to emergency medical situations that arise outside of business hours. Increasing broadband to these unserved and underserved locations will allow health care professionals to be better connected to their patients, providing a more robust health ecosystem.

Washington State Health Improvement Plan 2014 - 2018[221]

The State Health Improvement Plan is a call to action for all based on a future where everyone is actively seeking health. In Washington, the leading causes of death before age 65 are heart disease, stroke, cancer and lung disease, unintentional injury, substance abuse, suicide, diabetes, and Alzheimer's disease. The leading causes of poor health are tobacco use, poor diet, lack of exercise, alcohol misuse, and drug use. The State Health Improvement Plan includes both near-term and long-term goals. Near-term goals include:

1. Nutrition, physical activity, and obesity
2. Access to care

Long-term goals include:

1. Invest in the well-being of our youngest children and families
2. Support development of healthy neighborhoods and communities
3. Broaden health care to promote health outside the medical system

Although this State Health Improvement Plan is a few years old, the near-term and long-term goals for Washingtonians are still relevant to the current Transformational Plan and align with the goals of this BEAD Five-Year Action Plan. Particularly, great strides were made in the provision of telehealth services due to the COVID-19 pandemic, allowing residents to connect with their health care providers outside of health care facilities. Increased broadband service across the state also increases the ability for residents to utilize telehealth services, aligning with the State Health Improvement Plan goal of broader access to care.

5.6.3.6 Environment

Washington State Department of Ecology[222]

As Washington's environmental protection agency, the Department of Ecology is deeply committed to protecting, preserving, and enhancing Washington's environment for current and future generations. Through innovative partnerships, the Department of Ecology can protect and sustain healthy land, air, and water in harmony with a strong economy, taking great care to develop strategic plans that have a broad and holistic approach. In the 2023-2025 Strategic Plan, the Department of Ecology outlines the following goals:

1. Support and engage our communities, customers, and employees
2. Reduce and prepare for climate impacts
3. Prevent and reduce toxic threats and pollution
4. Protect and manage our state's waters

[221] Washington State Department of Health (2014), State Health Improvement Plan. Accessed at: 822-034_SHIPreport.pdf (wa.gov)
[222] Washington State Department of Ecology (2023), Strategic Plan. Accessed at: 2023-2025 Strategic Plan (wa.gov)

To support and engage Washington communities, customers, and employees, the Department of Ecology strives to equitably deliver the services and resources, strategically embrace innovation and new technology, and work to continually improve our performance and accountability. To do this, the agency will make investments in processes and tools that support public disclosure, records retention, and electronic discovery and make investments in processes and tools that support information technology security to protect Ecology's data and assets from cybersecurity threats. Supporting information technology security to protect data and assets from cybersecurity partnerships directly relates to this BEAD Five-Year Action Plan's planned activity of coordinating a statewide cybersecurity strategy to protect Washingtonians.

Healthy Environment for All Act (HEAL)[223]

Washington state passed the HEAL Act in 2021, in a historic step toward eliminating environmental and health disparities among communities of color and low-income households. It is the first statewide law in Washington to create a coordinated state agency approach to environmental justice, with the law covering seven state agencies.[224]

The HEAL Act builds on and implements some of the key recommendations from the Environmental Justice Task Force.[225] Some key elements include:

- Incorporating environmental justice part of agency work, including incorporating environmental justice into agency strategic plans, developing community engagement plans and tribal consultation frameworks, and conducting environmental justice assessments for certain significant actions.
- Promoting the equitable sharing of environmental benefits and investing in communities that have experienced the greatest environmental and health burdens. Agencies must focus expenditures toward creating environmental benefits for overburdened communities and vulnerable populations. The law sets a goal of 40% of expenditures to these communities.
- Providing a voice for disproportionately affected communities and centering environmental justice. The law creates an environmental justice council to advise the state and an interagency work group to coordinate among agencies.
- Supporting evaluation tools and processes. The law requires the Department of Health must maintain and update the Environmental Health Disparities map for evaluating and tracking environmental health disparities. Agencies and the council must track, measure, and report on environmental justice implementation.

Although the HEAL final report will not be submitted to the legislature and governor until November 30, 2023, some level of alignment can already be identified with this BEAD Five-Year Action Plan by looking at the key recommendations from the Environmental Justice Task Force.

[223] Washington State Legislature (2021), SB 5141 2021-22. Accessed at: Washington State Legislature
[224] Washington State Department of Health (n.d.), Environmental Justice. Accessed at: Environmental Justice | Washington State Department of Health
[225] Washington State Department of Health (n.d.), Washington Environmental Health Disparities Map. Accessed at: Washington Environmental Health Disparities Map | Washington State Department of Health

For one, Goal 3: Scalability and Sustainability directly ties to the intentions of the HEAL Act, which is to promote environmental justice and eliminate health and environmental disparities among communities of color and low-income households. Additionally, to solicit engagement from the communities most impacted, the expansion of broadband connectivity in remote and rural communities will allow those residents and communities to more easily make their voices heard through online platforms. Improved broadband connectivity will also streamline the Department of Health's ability to maintain and update the Environmental Health Disparities map, and increased connectivity across the state will allow more residents and communities to track environmental justice implementation.

5.6.3.7 Agriculture

A strong and thriving agricultural sector is essential to Washington state's economic success. Washington's agriculture industry is worth $49 billion, employs 164,000 people, and accounts for 13% of the state's economy. Expanding broadband access on Washington's agricultural land to allow for the adoption of precision technologies makes growers more competitive in a global economy and provides greater availability of training for farm managers and workers to learn how to use new technological tools and navigate increasingly complex regulatory requirements.

In Washington state, workforce system partners in agricultural areas are starting to recognize this need and responding by partnering with agricultural employers to develop incumbent worker training and apprenticeship opportunities aimed at upskilling existing adults and youth in mechanized fields in agriculture. One community college in the state has also invested in the development of a certification program aimed at educating orchard supervisors on how to navigate state and federal law requirements while learning best practices.[226] As many agricultural hubs in rural areas of Washington may be considered unserved or underserved, the increase in broadband deployment through BEAD funding will allow agricultural employers use broadband to upskill current workers on new precision technologies without having to travel.

5.6.3.8 Delivery of other essential services

Washington State Department of Licensing

The Washington State Department of Licensing has put in a lot of work to make its services more accessible, creating an online portal to enable residents to complete certain services online.[227] Now, Washingtonians can renew their ID or License, renew their vehicle tabs, schedule a licensing appointment, check drive license status, report a vehicle sale, and get an enhanced document checklist. Expanding broadband services across Washington state will allow more residents to take advantage of the online services available via the Department of Licensing.

Washington Technology Solutions (WaTech)

Washington State Cybersecurity Plan / State and Local Cybersecurity Grant Program[228]

[226] Washington Workforce Training and Education Board (April 2022), Talent and Prosperity for All. Washington PYs 2022-2023 (Mod)
[227] Washington State Department of Licensing (n.d.). Accessed at: Home | Washington State Department of Licensing
[228] Washington Technology Solutions (June 6, 2023), Washington State Plan. Accessed at: Adopted SLCGP WA Cybersecurity Plan - June 6 2023 - signed.pdf

The SLCGP is intended to address cybersecurity gaps in readiness for local jurisdictions and entities, with the goal of improving Washington's overall cybersecurity posture through stakeholder collaboration and following best practices, standards and guidelines in cybersecurity governance, risk management, threat detection, and resource allocation. The Cybersecurity Plan applies a priority-based approach to ensure SLCGP funding is used to improve cyber resilience. Overall, the Cybersecurity Program has four overarching goals:

1. Improve the cybersecurity posture of all local governments
2. Increase cybersecurity and privacy capacity at the state and local level
3. Develop enduring partnerships to support cyber resilience across the state of Washington
4. Effectively use existing funds and identify sustainable funding options

Increasing statewide cybersecurity directly aligns with the BEAD Five-Year Action Plan, as there is an emphasis placed on online safety for residents, communities, and businesses who will have newfound access to broadband services with disbursed BEAD funding. Further, the Cybersecurity Plan aligns with the BEAD Five-Year Action Plan through its element on workforce development, as it plans to use the National Initiative for Cybersecurity Education Framework for Cybersecurity to identify and mitigate gaps in the cybersecurity workforces of the state or local governments.

The challenge related to maintaining a stable cybersecurity workforce is twofold; the first is recruiting qualified personnel. However, the state of Washington employs various programs to develop future cybersecurity experts, which can help mitigate this challenge. The second workforce challenge is keeping up with rapidly evolving cybersecurity technology, and the skills and experience required to maintain a strong cybersecurity posture. To combat this challenge, the state capitalizes on the presence of the large technology companies to employ various programs to grow its cyber workforce, in a future focused way. Career Connect Washington is an example of an initiative that continues the cyber development pipeline from education into the workforce.[229] In identifying and proactively addressing challenges to maintaining a stable cybersecurity workforce, the Cybersecurity Plan closely aligns with the Five-Year Action Plan, as cybersecurity experts are key to the deployment, access, and adoption of broadband.

Washington State Utilities and Transportation Commission (WUTC)

2023-2025 Strategic Business Plan[230]

The Washington State Legislature established the WUTC in 1905. Now, the WUTC regulates the rates and services of the state's investor-owned electric and natural gas utilities, landline telephone companies, solid waste haulers, private water systems, marine pilotage, and residential movers, among other industries. The agency also manages the state's pipeline, railroad, and intrastate bus and trucking safety programs. The WUTC's regulation varies by industry, typically focused on rates, service quality, consumer protection, and safety measures. The Legislature

[229] Career Connect Washington (n.d.), Explore career connected learning. Accessed at: Home | Career Connect Washington
[230] Washington State Utilities and Transportation Commission (2023), 2023-2025 Strategic Business Plan. Accessed at: UTC Strategic Business Plan 2023 to 2025 (wa.gov)

gave the WUTC a two-part charge: to balance the needs of its regulated companies with the needs of Washington consumers, making sure that vital services are safe, equitable, available, reliable, and priced fairly.

For its 2023-2025 Strategic Business Plan, the WUTC outlined five key strategic goals:

1. Incorporate Pro-Equity Anti-Racism Principles
2. Transform Agency Culture
3. Protect Consumers
4. Advance Public Safety
5. Guide Market and Regulatory Transformation

Of those priorities, Protect Consumers closely aligns to the goals and objectives outlined in the BEAD Five-Year Action Plan. The WUTC seeks to ensure utility customers receive equitable access to services and information, focusing on highly impacted and vulnerable customers. This parallels the WSBO's intention to focus broadband deployment, access, adoption, affordability, and digital equity resources on covered populations. There is significant overlap with the goals of the BEAD Five-Year Action Plan and the WUTC's Strategic Business Plan's objective that services are equitable provided to highly impacted and vulnerable customers. This closely mirrors the objectives of the BEAD Five-Year Action Plan to provide broadband service to unserved and underserved locations, with a focus on covered populations.

Moreover, to advance public safety, the WUTC plans to develop and implement a language access plan to reduce barriers to engagement for non-English speakers or limited English proficiency consumers. A key component of the WSBO's plan to increase broadband access and adoption is to increase the provision of languages available for instruction.

Poverty Reduction Work Group (PRWG)

The 10-Year Plan to Dismantle Poverty in Washington[231]

Governor Jay Inslee created the PRWG to create a comprehensive 10-year plan to reduce poverty and inequality in Washington state. The goal of this strategic plan is to build a just and equitable future in which all Washingtonians have their foundational needs met, and the resources and opportunities they need to thrive. According to data analysis, 1.75 million Washingtonians – equal to one in four residents – live below 200% of the federal poverty line, with Indigenous, Black, and Brown Washingtonians experiencing much higher rates of poverty than the state average.

Following a current state assessment, eight strategic themes emerged from the work group, with 60 recommendations that broadly aim to accomplish three objectives: (1) lay a solid foundation for building a just and equitable future; (2) mitigate the experience of poverty by maximizing the system we have; and (3) preventing the experience of poverty by building the inclusive economy we need. The eight strategies for poverty reduction are below:

[231] Poverty Reduction Work Group (2020), The 10-Year Plan to Dismantle Poverty in Washington. Accessed at: Final10yearPlan.pdf (dismantlepovertyinwa.com)

1. Undo structural racism: understand structural racism and historical trauma and take action to undo how they manifest in state policy, program, and practice.
2. Balance power: make equal space in decision-making for people and communities most affected by poverty and inequality.
3. Increase economic opportunity: target equitable income growth and wealth building among people with low incomes.
4. Ensure foundational well-being: strengthen health supports across the life span to promote the intergenerational well-being of families.
5. Prioritize urgent needs: prioritize the urgent needs of people experiencing homelessness, mental illness, or addiction.
6. Build a holistic continuum of care: build an integrate human service continuum of care that addresses the holistic needs of children, adults, and families.
7. Decriminalize poverty: decriminalize poverty and reduce reliance on the child welfare, juvenile justice, and criminal justice systems.
8. Prepare for the future of work: ensure a just transition to the future of work.

Of the strategic priorities that emerged, the goals and objectives laid out in this BEAD Five-Year Action Plan most closely align with Strategy Two: Balance Power and Strategy Eight: Prepare for the Future of Work. To achieve Strategy Two, the PWRG recommends making high-speed, broadband internet universally available, noting that digital equity is necessary for fully engagement in education and employment, and is increasingly important to support civic participation. The PWRG also recommends adopting the recommendations detailed in the Future of Work Taskforce Report, which includes the mandate to continue funding rural broadband efforts and to seek out similar initiatives that may constitute best practices in other areas of the nation. Both recommendations directly align with the vision of this BEAD Five-Year Action Plan to provide universal broadband to all Washington residents, businesses, and communities, and closely align with the State Digital Equity Plan.

5.7 *Technical Assistance*

The WSBO will continue to use the expertise of the NTIA to ensure that Washington's BEAD program satisfies all federal requirements and standards. The NTIA can help in verifying additional federally funded broadband projects awarded after the publishing of this Plan to reduce the risk of duplication of benefits and continue until the WSBO has awarded all BEAD funding. Additionally, any guidance or templates NTIA can provide to develop a streamlined application process and aid in the oversight of BEAD-funded projects will be beneficial, especially during the development of the Initial Proposal, throughout the State Challenge Process, and continued through the submission of the state's Final Proposal. NTIA's continued support will be paramount in providing federal regulatory updates and best practices during regular subgrantee communications after the WSBO selects and funds projects.

6. CONCLUSION

As mentioned throughout the public engagement sessions, digital connectivity is essential to Washingtonian's daily lives. The WSBO has been intentional in developing this BEAD Five-Year Action Plan (Plan) with diverse stakeholders, partners, and state agencies to identify a strategy for broadband deployment that best serves all Washingtonians. In tandem with the State Digital Equity Plan, this Plan will help the state to support the delivery of affordable, accessible broadband and digital equity to all residents, businesses, and communities in Washington.

This Plan presents the road map to providing universal, reliable, and high-speed internet to all residents, businesses, and communities throughout the state. The diversity in demographics, socioeconomic status, and physical location of Washingtonians means that there is no "one size fits all" approach to broadband deployment. Some Washingtonians live in densely populated urban areas with multiple broadband service options, whereas other Washingtonians live far away from their closest neighbor and can only access the internet through cell service. To that end, this Plan identifies the priorities, execution strategies, and planned activities needed to ensure that Washington state can facilitate the expansion of broadband deployment, adoption, affordability, access, and digital equity for all. Looking ahead, this Plan will also provide foundational information to inform the Initial and Final Proposals that will be critical to the successful execution of the BEAD Program objectives and will be aligned with the Digital Equity Plan objectives.

Washington will continue to build on its strong foundation of community-based broadband planning – as demonstrated in the Community Action Plans envisioned by local and tribal government Broadband Action Teams. The state will also continue to invest in programs that support digital equity, ranging from the Digital Navigators program, platforms like the Digital Equity Forum, and opportunities for local and tribal organizations to build capacity to support future sustainable broadband services and digital inclusion activities. The Department of Commerce's previous success in disbursing broadband funding through the WSBO, Public Works Board, and Community Economic Revitalization Board, places Washington in a strong position to execute on this Plan and deliver on the premise of "Internet for All."

7. APPENDICES

7.1 Crosswalk of Washington's Five-Year Action Plan and NOFO Requirements

Table 27: Crosswalk of Washington's Five-Year Action Plan and NOFO Requirements

#	NOFO Requirement	Washington's Plan – Reference Location
1	Provide details of the existing broadband program or office within the Eligible Entity, including any activities that the program or office currently conducts, any previous entity-wide plans or goals for availability of broadband, and any prior experience awarding broadband deployment grants.	Programs and Activities: BEAD Report Section(s) 3.1.3 Local Activities: 3.1.6; 7.2 Tribal Programs: 3.1.7 Goals: BEAD Report Section(s) 2.1; 2.2; 5.6; 7.7.1 Prior Experience: BEAD Report Section(s) 3.1.1; 3.1.2
2	Identify the funding that the Eligible Entity currently has available for broadband deployment and other broadband-related activities, including data collection and local planning, and the sources of that funding, including whether the funds are from the Eligible Entity or from the federal government.	BEAD Report Section(s) 3.1.2; 7.5
3	Identify existing efforts funded by the federal government, including the Universal Service Fund, or an Eligible Entity to deploy broadband and close the digital divide.	BEAD Report Section(s) 3.1.1; 3.1.2; 3.1.3; 3.2; 7.8
4	Identify the current full-time and part-time employees of the Eligible Entity who will assist in implementing and administering the BEAD Program and the duties assigned to those employees, as well as any existing contracted support, and any planned expansion of employees or contractors.	BEAD Report Section(s) 3.1.4; 3.1.5
5	Identify known or potential obstacles or barriers to the successful implementation of the BEAD Program and the Eligible Entity's corresponding plans to address them.	BEAD Report Chapter(s) 4; 5 BEAD Report Section(s) 7.3; 7.4
6	Include an asset inventory that catalogues broadband adoption, affordability, equity, access, and deployment activities occurring within the Eligible Entity and identifies and provides details regarding any relevant partners, such as community-based organizations and CAIs that may inform broadband deployment and adoption planning.	BEAD Report Section(s) 3.3: Adoption: Section(s) 3.3.2 Affordability: Section(s) 3.3.3; 7.8 Equity: Section(s) 3.3.5; see also Digital Equity Plan Access: Section(s) 3.3.4 Deployment: Section(s) 3.3.1; 7.2; 7.6
7	Include a description of the Eligible Entity's external engagement process, demonstrating collaboration with local, regional, and Tribal (as applicable) entities (governmental and non-	BEAD Report Section(s) 5.1; 7.9; 7.10; 7.11; 7.12

#	NOFO Requirement	Washington's Plan – Reference Location
	governmental) and reflective of the local coordination requirements outlined herein, including outreach to underrepresented communities and unions and worker organizations. The engagement required must be undertaken both during the development of the Five-Year Action Plan itself and following submission of the plan, reflecting ongoing collaboration throughout the BEAD Program.	
8	Incorporate available federal, Eligible Entity, or local broadband availability and adoption data, including but not limited to Affordable Connectivity Program enrollment data. Other federal broadband data sources include the NTIA Internet Use Survey, the NTIA Indicators of Broadband Need Map, and the American Community Survey.	BEAD Report Chapter 3 BEAD Report Section(s) 7.13.1
9	Identify local and regional broadband service needs and gaps within the Eligible Entity's boundaries, including unserved or underserved locations and CAIs without gigabit service, and/or any plans to make these determinations where service availability is unclear.	BEAD Report Section(s) 3.3; 7.2; 7.3; 7.4
10	Provide a comprehensive, high-level plan for providing reliable, affordable, high-speed internet service throughout the Eligible Entity, including: The estimated timeline and cost for universal service, The planned utilization of federal, Eligible Entity, and local funding sources, Prioritization of areas for federal support, Any consideration afforded to the use of public-private partnerships or cooperatives in addressing the needs of the Eligible Entity's residents, Strategies to address affordability issues, including but not limited to strategies to increase enrollment in the Affordable Connectivity Program by eligible households; and Strategies to ensure an available and highly skilled workforce (including by subgrantees, contractors, and subcontractors) to minimize project disruptions, including any plans to ensure strong labor standards and protections, such as those listed in Section IV.C.1.e; and plans to attract, retain, or transition the skilled workforce needed to achieve the plan's goals, including describing the involvement and partnerships of sub-grantees, contractors, and sub-contractors with existing in-house skills training programs, unions and worker organizations; community colleges and public school districts; supportive services providers; Registered Apprenticeship programs and other labor-management training programs, or other quality workforce training providers.	BEAD Report Chapter 5 BEAD Report Section(s) 7.7; 7.13

#	NOFO Requirement	Washington's Plan – Reference Location
11	Identify digital equity and inclusion needs, goals, and implementation strategies, including ways in which the Eligible Entity plans to utilize BEAD funding, Digital Equity Act funding and/or other funding streams in concert to remedy inequities and barriers to inclusion. Accordingly, the Five-Year Action Plan should set forth a vision for digital equity, include the results of a needs assessment for underrepresented communities and an asset inventory of ongoing digital equity activities, and detail holistic strategies around affordability, devices, digital skills, technical support, and digital navigation. This requirement may be satisfied by the completion of a State Digital Equity Plan under the Digital Equity Act. Please refer to the Digital Equity Act State Planning Grant Program NOFO for the requirements and deadlines applicable to that program.	BEAD Report Section(s) 3.3.5 see also Digital Equity Plan
12	Detail alignment of the Five-Year Action Plan with other existing and planned economic development, telehealth, workforce development, related connectivity efforts, and other Eligible Entity priorities.	BEAD Report Section(s) 5.6
13	Describe technical assistance and additional capacity needed for successful implementation of the BEAD Program.	BEAD Report Section(s) 5.7

7.2 Washington County and Tribal Community Action Plans

The WSBO has published county and tribal Community Action Plans online, which can be accessed using the link below. In some instances, counties or tribes did not provide complete information, however, the WSBO is working to incorporate the information that they did submit, so that all counties and tribes that participated in the process are represented. Finally, as discussed in **Section 5.1.5**, 16 tribes participated in this process with four tribes partnering with neighboring counties and 12 tribes submitting information independently. The four tribes that partnered with counties include:

- Kalispel Tribe (partnered with Pend Oreille County)
- Nisqually Tribe (partnered with Thurston County)
- Sauk-Suiattle Indian Tribe (partnered with Skagit County)
- Shoalwater Tribe (partnered with Pacific County)

The WSBO has included information for these four tribes in the 'Tribal Community Action Plans' folder.

Community Action Plans Link

7.3 Summary of Barriers Identified in County Community Action Plans

The table below summarizes the barriers to broadband deployment, access, affordability, and adoption for each county according to the information provided as part of the Community Action Plan process. A link to each Community Action Plan is provided in **Appendix 7.2**.

Table 28: Summary of Barriers to Broadband Deployment, Access, Affordability, and Adoption According to County Community Action Plans

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Adams	• The rural nature of the county increases costs because of the need to outsource construction workers and materials. Many of the contractors will likely travel from the Tri-Cities or Spokane, which may create barriers in collecting bids from contracting parties. • The city of Othello has a policy that all new fiber must be buried. This is a significant cost to wireline deployments and requires additional funding support.	• Inaccessibility to residents who live in remote areas • Lack of awareness amongst covered populations who are not always made aware of available resources • Difficulty communicating with those living in unincorporated areas who do not have access to digital communication platforms • Language access – communication materials are not always translated
Asotin	• More middle-mile open access investment needs to be made before last mile connectivity can occur. • Returns on investment are low. • Smaller awards have a higher administration to benefit ratio that larger projects, but larger projects can be out of reach due to match. • Lack of local match funds for dark fiber open access investment. • Lack of population density creates high cost per passing. • Insurance costs and long-term affordability of maintenance and repair/replacement. • Cost of cell tower leases or sites for placement of cell towers. • Municipal staffing and talent for preparing grant applications and managing projects.	• A fear of technology and/or looking foolish may hold some seniors back from using the internet for their news, access to their health information, and communications with family. • A lack of resources to hire staff for anchor institutions in areas located outside of Clarkston or Asotin is a barrier for rural residents to learn about and/or receive digital equity services. • a lack of either state or federal funding beyond July 2024 to sustain the existing Digital Navigator program, let alone expand it. • Community awareness is largely inhibited by a lack of coordinated agency communication efforts. • Lack of basic infrastructure in place to allow for better internet access.

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Benton	• Lack of current, accurate mapping of existing infrastructure. • Ongoing costs for maintenance, pole costs, etc., after grant-funded expansion. • Limited lifecycle of equipment requiring replacement. • Insurance costs • Cost to complete application and staff capacity • Lack of a statewide "Dig-Once" policy	• Language barriers • Cost, • Unreliable internet access • Culture and awareness • Low level of digital literacy • Technical assistance for set up with limited access to service providers (time, location, transportation, etc.) • Legal status concerns
Chelan	• Infrastructure improvements necessary to build fiber network creates a cost barrier • Regulatory requirements for grants, challenging financial obligations, and detailed reporting needs that require additional staff and resources • Finding and hiring skilled contract labor forces • Contract requirements such as collateral, materials origination requirements, and reporting requirements	• Cost of broadband for low-income households • Lack of resources available to assist those who are having difficulty accessing and utilizing broadband • Low level of digital literacy for many who are struggling to access internet
Clallam	• Challenging terrain, including mountains, heavy tree cover, and river • High costs and low population density reduce financial viability. • Lack of organizational capacity for project pre-development and project management. • Policy barriers created by funding guidelines that don't make sense for rural areas.	• Lack of broadband physical infrastructure to areas, the high cost to install FTTP, a lack of middle mile infrastructure outside of city limits • Lack of affordable internet options • Limited digital equity resources in the Count
Clark	• High cost to residents and businesses for deployment • Geographic and environmental barriers • Availability of a properly trained workforce • Uncertainty with funding processes • Need for coordination and broadband leadership	• Lack of housing • Lack of training programs • High cost of devices and internet service • Limited operating hours for public Wi-Fi • Fear related to using the internet

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Columbia	• Topography - steep hills and valleys throughout the county, trees • Cost to reach sparsely populated areas • Cost of satellite (Starlink) • Lack of market case for private sector deployment • Lack of local funds for match or debt service	• Lack of knowledge of services that are available, difficulty in communicating with those in need • Lack of workforce to provide one-on-one training • Lack of one-on-one Digital Navigation services within the community • Lack of internet access to participate in online assistance
Cowlitz	• Barriers include cost of infrastructure related to geography of the rural areas and low population which leads to low return on investment for ISPs • Even with satellite, many of these areas cannot be served reliably due to geography even if they are identified as "served"	• Financial barriers to acquire equipment and pay for services • General awareness of the relevance of having broadband access
Douglas	• Permitting for construction and right-of-way access • Lack of proactively identify make-ready status throughout project areas.	• Lack of coordination among partners serving covered populations • No access to the high-speed fiber network • Households not having devices other than perhaps a smartphone • Individuals not having easy access or not being aware of digital skills training • Lack of education about the benefits and importance of the Internet
Ferry	• Low return on investment - difficult to make a business case that justifies investment in the infrastructure needed to expand service territories to reach rural communities • Lack of antenna backhaul and sites • Local ordinances	• Internet is too expensive for many households • Residents are worried about others getting access to personal information • Old or non-functional internet-accessible devices
Franklin	• Per-premise passing costs for sparsely populated area • Lack of matching funds • Only two electric service companies (must pay for pole contacts)	• Unreliable internet access • Culture and awareness • Low level of digital literacy

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
	• Drastic changes between plateau and valley terrain throughout the County.	• Technical assistance for set up with limited access to service providers (time, location, transportation, etc.) • Legal status concerns • Cost for nonprofit organizations to provide digital navigation training and devices • Digital navigation training is not a primary mission for many organizations serving covered populations • Individuals with disabilities need accommodation requiring special equipment and education
Garfield	• The size and rural nature of Garfield County • Limited resources with the County and the Port • Lack of return on investment due to recurring costs • Increased construction costs, including power pole rental • Insurance costs and maintenance due to wind damage • Limited matching funds	• The typography and rural nature of Garfield County • Navigating new technology is made difficult with a lack of library staff • Communication barriers – not able to reach all residents
Grant	• (Although Grant County submitted a digital equity Community Action Plan, it did not complete a corresponding plan discussing broadband deployment.)	• Cost of broadband is too expensive - for decades, the county's unemployment rate, wage structure, and poverty rate have lagged the state average • Hesitancy to adopt broadband technology due to concerns about privacy, security, and data protection. • Digital equity support services that are only available in English
Grays Harbor	• The high cost of installing middle mile and underground infrastructure • Extensive areas of low population density • The barriers put in place by the FCC's Rural Digital Opportunity Fund	• Costs of internet access is a major barrier to digital equity • The cost to purchase devices, as well as the need to continually upgrade, repair,

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
	• Difficult terrain makes extending fiber an expensive proposition – the terrain also limits the range and speed of fixed wireless, interferes with satellite reception and results in spotty cellular coverage	and replace them as they become outdated or damaged • The shortage of materials and support in languages other than English is another barrier to accessing digital equity services. • Accessing any services in areas without reliable Internet is a challenge
Island	• Lower population density in some regions- primarily rural, with an overall population density of 416.6 people per square mile • Cost of insurance, materials costs, pole contact and make-ready fees, application costs, and tower site leases pose significant financial barriers • Issues related to the zoning in place for building or maintaining towers • Issues surrounding the expensive of franchises and business licenses for broadband providers	• Both physical topography and a general lack of community awareness prohibit access to and adoption of the internet and devices in Island County • Disparate nature of the island communities • As a mid-density county, Island County falls in a funding gap between remote, rural county needs and the urban needs of larger, more diverse counties
Jefferson	• Low population density and geographic difficulties • Lack of accurate data on served vs. unserved vs. underserved areas in the county • Inaccurate FCC and legacy ISP maps • Low return on investment - ISPs without grant funding are not able to invest in expansion because the potential payback period is too long for their survival or their shareholders • Legacy infrastructure is aged and slow	• Lack of transportation to sites with Digital Equity services • Lack of materials in a language other than English • No dedicated private office space(s) for Digital Equity staff to tutor/teach • No dedicated computer lab for teaching Digital Equity classes to those without pre-existing rudimentary skills • Lack of public awareness of digital equity services • Lack of availability of customized devices and input tools for those with physical disabilities
King	• The lack of a consistent and efficient permitting process	• Tangible barriers to access and use – purposefully disconnected, access limited, or device limited

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
	• The unpredictable and high costs associated with fixing and replacing utility poles • The infrastructure industry currently faces a shortage of qualified labor, as most skilled individuals are already employed. • Major storm events divert available labor to areas that require extensive restoration work	• Intangible limitations to access and use – digital skills limited, access stressed, or digitally cautious • Digital equity capacity building systems often have insufficient resources to meet their basic needs •
Kitsap	• The expense of underground and middle-mile development • Low population density • Low return on investment that is not appealing to private industry • The cost associated with permitting construction adds to the expense • Permitting, "Dig-Once," and 5-Year "Road Moratoriums" are significant policy barriers	• Cost of internet service • Lack of awareness and support for enrolling in the ACP • Limited number of minutes included in the free federal Lifeline program • The cost to upgrade, repair or replace devices when outdated or broken • Availability of fast & reliable internet connectivity • Lack of knowledge of how to use technology • Lack of perceived need • Mistrust of government programs/ISPs
Kittitas	• Very low population density • Heavily treed areas • Financial constraints • Low levels of community awareness • Extremely rural population • Limited funding opportunities • Issues related to the zoning in place for building or maintaining towers (whether restrictive or underdeveloped) • The current process that allows ISPs and broadband providers to challenge grant application awards does not require them to commit to building the additional needed infrastructure if they are successful in their challenge	• The physical topography of Kittitas County is a significant barrier to both terrestrial construction and wireless transmission • Lack of outreach to area residents • Lack of funding available to comprehensively reach target populations • Lack of perceived value of new technology and its usefulness for economic purposes

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Klickitat	• Rural communities • Limited resources to support program development • Limited ability to match funding at the local level • Limited local telecommunications firms located within the region, and none based in the County • There is significant federal land ownership - crossing this land or siting towers on it can be a challenging and lengthy process that adds cost and uncertainty to deployment options	• Limited capacity to provide digital equity support due to resource constraints • Paying competitive wages for tech talent • Limited workforce resources for digital equity and navigation training • Limited device or hardware support locally to help address challenges with devices
Lewis	• Low population density • Rural areas • Lack of a Dig-Once policy • Regulatory and policy barriers such as long permitting processes and high fees for permits	• Geographic and rural nature makes providing service unfeasible for most providers without outside assistance • Affordability of internet service and affordability of internet-accessible devices • Lack of awareness • Lack of supportive services • No formal digital equity program • Think of internet service problems as something to be solved by ISPs
Lincoln	• Lack of discretionary funding for matching dollars - there are not a lot of avenues for the county to generate extra capital • Low return on investment for private ISPs due to low population density • Capacity of contractors is strained - not enough contractors/trained workers for the work that is coming	• Lack of community resources providing digital equity support • Lack of public computers and Wi-Fi availability due to the limited hours of the libraries and some schools disabling some public Wi-Fi access • Limited funding for a digital navigator program or other digital equity services • Lack of bandwidth among the current entities
Mason	• National private ISPs do not share shape files clearly defining areas where they have services – this makes it challenging to accurately analyze gaps in service	• Slow broadband expansion to unserved locations in rural areas • The limited amount of affordable broadband service and devices

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
	• Mason County's pole have shorter and older utility pole infrastructure, which in some cases are already heavily attached • Corrections to existing attachment violations and Make-Ready projects to prepare the poles to meet NESC compliance for future attachments	• Some Mason County residents do not want access to the internet • Financial barriers and the need for one entity to lead Mason County's digital equity
Okanogan	• Lack of funding to build broadband infrastructure and the geographic barriers, including mountains, valleys, rivers, and forests • Low population density • Large national forests prevent the construction of sustainable infrastructure	• Funding, awareness, participation, rurality of the county and reservation, and perpetually unserved populations are biggest barriers • Barriers to the successful provision of digital inclusion services include funding, awareness, and community participation
Pacific	• Costs of service and expansion • The topography of Pacific County • The risks of interruption by weather and geological events • All service representatives of commercial ISP providers reside out-of-county and are only available to service equipment on limited schedules	• Significant lack of digital literacy, especially among the large elderly population, many of whom have disabilities • Lack of sufficient in-home equipment, and the costs of computer security applications provide additional challenges beyond broadband access.
Pend Oreille	• Topography - the rough, mountainous terrain adds considerable expenses to the overall deployment cost • The land use zoning due to the state required Growth Management Act is such that much infrastructure work requires individual conditional use permits • The county has not made ARPA funds available for broadband • The entire region is ineligible for federal broadband funds	• The largest barriers are broadband access to the home/place of business and monthly cost. • Local perception that the southern end of the county was chosen for broadband access and the north end (2/3 of the county) was purposefully omitted plagues most broadband and internet access conversations
Pierce	• Lack of funding for infrastructure buildout • Workforce shortages	• Lack of funding for technical support and wrap around services • Limited community awareness of where to find digital equity resources

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
San Juan	• Low population density • High cost per passing for infrastructure projects • Cost of insurance, materials costs, pole contact and make-ready fees, and application costs • Issues related to the zoning in place for building or maintaining towers (whether restrictive or underdeveloped • Agencies face a shortage of staff members available to process environment and cultural review applications	• The physical topography of San Juan County is a significant barrier to terrestrial construction and wireless transmission • This makes the cost per household of infrastructure placement and service delivery increase to a point that residents often simply cannot afford • Lack of awareness of the potential of digital skills in enhancing a person's life, and where to gain those skills • Lack of perceived value of recent technology and its usefulness for economic purposes
Skagit	• Eastern Skagit County is relatively rural compared to the western part of the county • Eastern Skagit County has mountainous environmental barriers • Workforce shortages • Policy barriers • Lack of general community awareness	• Physical topography of the county • Lack of awareness in rural communities • Lack of understanding for many rural sectors in the applicability of digital equity
Skamania	• Limited local funding capacity - 88% of the land in Skamania County tax exempt, so there is very limited tax base from which local partners can build capacity, programming, or infrastructure to support broadband deployment. • Low population density in a rural area • Low to no return on investment for a private provider • Limited local telecommunications firms located within the region, and none based in the County • High public ownership or otherwise tax-exempt land across the county - varying permitting processes can become challenging and costly for infrastructure deployment that crosses or utilizes these lands	• Dispersed populations and distance to the support needed for accessing the digital navigation services • Additional awareness about digital literacy services at libraries to increase utilization • Limited resources in terms of workforce for digital equity and navigation training • Limited device or hardware support locally to help address challenges with devices for those less comfortable in this space

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Snohomish	• No public entity in Snohomish County that serves as a retailer of service • Low return on investment for private ISPs • Private ISP preferred providers are reluctant to 'give-up' their proprietary rights to expand into these areas, essentially holding these neighborhoods hostage. There is no mechanism for these neighborhoods to protest or seek relief from this proprietary ownership.	• Accessibility and expense of the internet often drives individuals to not have service • Perception of usefulness of and trust in the technology by the primary decision-maker in the household • Cybersecurity concerns
Spokane	• Lack of funding to construct additional capacity combined with financial need at the household level • Low population density creates high cost per passing in rural areas, escalated cost of materials and scarcity of workforce for projects, pole contact fees/make ready fees, insurance costs, cost to complete applications, ability for public entities to have match funds, cost of tower stie leases, cost to prepare grant applications for small towns	• Community awareness issues--many in the community do not know about ACP or how to sign up for assistance
Stevens	• Low population density • Difficult geographical terrain in areas where poles do not exist • Lack of local staff to support strategic planning is a limiting factor; Stevens County does not have a port authority. Stevens County PUD does not do broadband due to lack of technical staff and expertise • County and city governments are not structured to support broadband management	• Poverty – broadband is not affordable • Under-educated population • Topography • Geographical distances to get to an internet adoption resource • Geographic distances to install broadband infrastructure • Low population density
Thurston	• Shortages of skilled workers for field installation of fiber lines • Laying infrastructure in urban areas is difficult due to community disruptions	• Digital equity services are limited and not available to all residents • Lack of access to long-term funding for programming

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
	• Last mile construction costs are too high • Limited access to funding	• Difficulty sourcing translators for digital equity services
Wahkiakum	• Low return on investment for private ISPs • Low population density • Local government and others eligible for broadband grants and loans do not have the capacity to fund a startup operation • Low population density • Challenges to wireless deployment include rugged terrain and tree covered hillsides	• Availability of services provided by an ISP • Affordability – the cost of the service is too high • Lack of awareness - much of the community leadership is only partially aware of possible ISP programs available to assist low-income residents to obtain broadband
Walla Walla	• Lack of population density creates higher cost per passing • Pole contact fees/make ready fees and associated costs from long wait times for access to pole infrastructure • Insurance costs and long-term affordability of maintenance and repair/replacement • Cost to complete application (cost estimates, GIS work, etc.) • Cost of tower site leases • Zoning issues for towers (restrictive or underdeveloped) • ISP challenge process does not hold ISPs accountable • Lack of standardized/streamlined processes for permitting and make ready • No Dig-Once policy	• Lack of high-speed Internet • Reliance on smartphones with limited data service and challenging wireless services in many areas • Access to free or low-cost devices at times and in places that are convenient to users • Affordability • Lack of awareness of how digital skills could enhance a person's life • Lack of skills or access to build new skills • Lack of awareness of resources currently available in our region • Concern about internet safety leading to no or limited use • Reluctance to ask for assistance due to immigration status
Whatcom	• Challenging topography • Workforce shortages • Policy barriers • Lack of general community awareness • Issues related to the zoning in place for building or maintaining towers (whether restrictive or underdeveloped	• The physical topography of Whatcom County poses a significant barrier to terrestrial construction and wireless transmission • Limited outreach and communication for digital equity programs

County	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Whitman	• Not enough middle-mile infrastructure • Financial gaps preventing infrastructure investment • Lack of population density creates a high cost per passing • Escalated cost of materials • Pole contact recurring fees/make-ready fees • Terrain challenges • Insurance costs and long-term affordability of maintenance and repair/replacement • Cost to complete application (obtain cost estimates, GIS work, etc.) • Lack of qualified, technically skilled labor • Capacity issues with some utilities and inability to quickly process permits and make ready requests for attachments	• Staffing and funding for outreach for organizations • Lack of dedicated spaces in rural areas to provide services • Lack of effective and affordable communication to provide information on available resources • Lack of awareness of how digital skills could enhance a person's life • Poverty/economic distress- some cannot afford devices or an internet subscription to use them at home • Lack of skills or the ability to build them
Yakima	• The large land area and challenging topography of the eastern portion of the county • The current process that allows ISPs and broadband providers to challenge grant application awards • Issues related to the zoning in place for building or maintaining towers (whether restrictive or underdeveloped)	• Lack of awareness of the potential of digital skills in enhancing a person's life and where to gain those skills • Lack of outreach to area residents

7.4 Summary of Barriers Identified in Tribal Community Action Plans

The table below summarizes the barriers to broadband deployment, access, affordability, and adoption for each tribe according to the information provided as part of the Community Action Plan process. The information includes the four tribes that partnered with counties to submit Community Action Plan information. A link to all Community Action Plans is provided in **Appendix 7.2**.

Table 29: Summary of Barriers to Broadband Deployment, Access, Affordability, and Adoption According to Tribal Community Action Plans

Tribe	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Cowlitz Tribe	• High permit costs, pole make ready costs, and annual fees • Low ROI for ISPs due to low population density • Challenges with ROW • Permit delays • Difficult terrain – wetlands make trenching difficult	• Diaspora of tribe members is a barrier to digital inclusion services – tribal members are spread out across the state, region, and county • Elder tribal members don't understand the benefits of the internet, so they don't want to accept digital navigation services
Hoh Tribe	• Lack of accessible middle mile infrastructure • Limited financial resources • Low ROI for ISPs • No broadband project manager • Geographic isolation and difficult terrain (rugged coastline, waterways, dense forests, mountains)	• Lack of broadband prevents access
Jamestown S'Klallam Tribe	• Challenges with ROW • Low ROI for ISPs due to low population density • Challenging geographic terrain • Endangered or threatened species make environmental permitting challenging • Limited financial capacity to pay for expansion • Workforce shortages	• (Although the Jamestown S'Klallam Tribe submitted a broadband deployment Community Action Plan, it did not complete a corresponding plan discussing digital equity.)
Kalispel Tribe (Joint with Pend Oreille County)	• Topography - the rough, mountainous terrain adds considerable expenses to the overall deployment cost • The land use zoning due to the state required Growth Management Act is such that much infrastructure work requires individual conditional use permits	• The largest barriers are broadband access to the home/place of business and monthly cost. • Local perception that the southern end of the county was chosen for broadband access and the north end (2/3 of the county) was purposefully

Tribe	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
	• The county has not made ARPA funds available for broadband • The entire region is ineligible for federal broadband funds	omitted plagues most broadband and internet access conversations
Lower Elwha Klallam Tribe	• Funding needed to extend fiber optic service to the data center at the Justice Center • Heavy tree canopy coverage interferes with the use of satellite service. Lack of data to map all fiber backbones from various providers to better see where we can tap into those resources.	• There is a large number of low-income households that will need options to overcome any fee's associated with service/equipment setup costs, ongoing broadband fees, etc. Community outreach and training will need to be held to ensure Tribal community members have the skills and equipment needed to benefit from the broadband.
Lummi Nation	• Difficult terrain for infrastructure buildout due to flooding • Low affordability and limited accessibility have impeded broadband deployment to unserved areas	• Affordability of broadband services is a barrier to broadband adoption • Obsolete technology discourages broadband adoption
Makah Tribe	• Lack of middle mile infrastructure • Geographic isolation • Limited organizational capacity to manage broadband projects	• All regions face barriers to access or lack of available digital equity services due to lack of broadband infrastructure
Nisqually Tribe (Joint with Thurston County)	• Shortages of skilled workers for field installation of fiber lines • Laying infrastructure in urban areas is difficult due to community disruptions • Last mile construction costs are too high • Limited access to funding	• Digital equity services are limited and not available to all residents • Lack of access to long-term funding for programming • Difficulty sourcing translators for digital equity services
Nooksack Indian Tribe	• Lack of funding • Workforce shortages prevent infrastructure development • Rural geography is challenging • Difficult terrain makes deployment challenging	• Limited digital literacy • Lack of awareness of digital equity resources
Samish Indian Nation	• Unequal distribution of broadband assets – most on the western side • Limited financial capacity to pay for expansion	• Lack of community awareness around ACP and other affordability programs • High rates of poverty are a barrier to the adoption and use of technology

Tribe	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
	• Primarily rural • Increased costs for materials and construction labor • Policy barriers (zoning, ISP & Broadband Provider Challenge Process, environmental and cultural review, franchising, and licensing) • Difficult terrain for infrastructure build	• Limited digital literacy • Lack of general technical knowledge (computer skills)
Sauk-Suiattle Tribe (Joint with Skagit County)	• Eastern Skagit County is relatively rural compared to the western part of the county • Eastern Skagit County has mountainous environmental barriers • Workforce shortages • Policy barriers • Lack of general community awareness	• Physical topography of the county • Lack of awareness in rural communities • Lack of understanding for many rural sectors in the applicability of digital equity
Shoalwater Tribe (Joint with Pacific County)	• Costs of service and expansion • The topography of Pacific County • The risks of interruption by weather and geological events • All service representatives of commercial ISP providers reside out-of-county and are only available to service equipment on limited schedules	• Significant lack of digital literacy, especially among the large elderly population, many of whom have disabilities • Lack of sufficient in-home equipment, and the costs of computer security applications provide additional challenges beyond broadband access.
Spokane Tribe	• Lack of funding • Difficult terrain includes swamps, rocky mountains, and tight roadways • Limited organizational capacity to manage broadband projects	• Poverty of tribal members leads to affordability concerns • Long distances to get to an internet adoption resources • Lack of information and outreach about the availability and benefits of digital equity resources
Swinomish Tribe	• Difficult terrain for infrastructure build (heavily forested) • Escalated costs of materials and construction labor (pole contact fees/make ready fees, etc.) • Do not have the required match funds • Zoning issues • Workforce shortages	• Lack of awareness of how digital skills can enhance a person's life • Poverty and economic distress make broadband unaffordable • Limited digital literacy • Dated personal devices (computers or phones)

Tribe	Barriers to Broadband Deployment	Barriers to Broadband Access, Affordability, and Adoption
Tulalip Tribe	• High infrastructure buildout costs • Low ROI for ISPs • Grant policies that require access to tribal owned infrastructure (fiber ring) as a requirement for ILEC infrastructure build out to both middle mile and last mile areas that do not otherwise have access to fiber	• Financial barriers • Need for the creation and development of a culturally representative team for digital navigation
Yakama Nation	• Lack of redundant loops within the nation's system leads to outages	• Lack of end user devices • Access to property due to jurisdictional barriers • Inability to pay, on fixed income

7.5 Broadband Funding in the State of Washington

Project-specific funding amounts for the following programs can be accessed using the link below.

Federally Funded Programs:

- Infrastructure Acceleration Grant
- Broadband Infrastructure Grant
- Public Works Board (PWB) Broadband Construction Federally Funded Grants
- Broadband Infrastructure Program
- Community Economic Revitalization Board (CERB) Rural Broadband Projects

State Funded Programs:

- State Match Program
- CERB Rural Broadband Projects
- PWB Broadband Construction State Funded Grants
- CERB Planning Program
- Rapid Design Study

A summary of these and other federally funded and state funded programs is located in **Table 1**.

Appendix 7.5 Link

7.6 Asset Inventory: Broadband Deployment – Community Action Plan Maps

For Community Action Plans that included GIS data, the WSBO has created maps to show where various assets are located within a county boundary. These assets include the location of broadband deployment hard assets and the location of CAIs, such as educational institutions, emergency services, and affordable housing. Additionally, when applicable, the WSBO identified the location of Rural Digital Opportunity Fund (RDOF) awarded projects. All of these assets are shown in relation to unserved, underserved, and served locations.

These maps can be accessed using the link below.

Appendix 7.6 Link

7.7 Workforce Plan

A highly skilled workforce is both a necessity and an opportunity to meet the state's overarching goals for universal access, economic development, and scalable and sustainable broadband infrastructure. Additionally, investment in broadband infrastructure also presents an opportunity to invest in workforce development in the telecommunications industry across the state to support economic development. As such, the WSBO has outlined several goals to meet the demand for a broadband deployment ready workforce, given the large investment in capital infrastructure that will be taking place over the next five years.

7.7.1 Goals for workforce

Three high-level goals for the broadband workforce are outlined below:

1. ***A diverse workforce with equitable employment opportunities***: Washington state is committed to supporting an equitable, diverse, and inclusive workforce for broadband deployment, which also aligns with other state workforce goals. As mentioned in **Section 5.6.3**, the Workforce Innovation and Opportunity Act (WIOA) incentivized Washington's workforce system to address and remove barriers to access so that a greater number of residents can connect with a career pathway and a living-wage job.
2. ***A highly skilled and adaptable workforce***: Having enough highly skilled workers across various occupational categories who can adapt to new technologies as they are developed will be an important part of workforce development. This will be essential for not only the planning, designing, and building phase of work, but also ongoing operations and maintenance to maintain a high level of service.
3. ***Encouraging fair wages and labor practices leading to good jobs****:* The WSBO will work with labor organizations, unions, and workforce development councils in the state to discuss how the BEAD program can spur the creation of well-paying jobs. This partnership will also work to ensure that subgrantees have fair labor practices that adhere to both the BEAD program requirements and federal and state legislation, like the federal Fair Labor Standards Act and Washington state's Equal Pay and Opportunities Act.[232, 233]

7.7.2 How this workforce plan was developed

Data Collection and Analysis

To develop this plan, both qualitative and quantitative data was collected from a variety of sources. Occupational data for Washington state from the Employment Security Department's most recent occupational supply and demand gap analysis was reviewed focusing on Standard Occupational Classification codes. This plan focused on codes that align to occupations that may be critical to the expansion of broadband infrastructure and services. Sixteen occupational codes were identified using a variety of sources including a Government Accountability Office report on

[232] Department of Labor (2023), Fair Labor Standards Act. Accessed at: Wages and the Fair Labor Standards Act | U.S. Department of Labor (dol.gov)
[233] Washington State Legislature (n.d.), RCW: Washington Equal Pay. Accessed at: Chapter 49.58 RCW: WASHINGTON EQUAL PAY AND OPPORTUNITIES ACT

telecommunications workforce needs, and the NTIA's workforce research findings for Washington amongst others. [234] [235] [236] [237] Additionally, the WSBO conducted a survey of public and private ISPs in the state, which included a question related to anticipated staffing challenges. The survey results helped provide supplemental information on potential gaps that providers are foreseeing. Finally, a virtual listening session focused on workforce training and education needs was held on June 8, 2023, which also provided qualitative data related to workforce training and higher education opportunity and resource gaps.

7.7.3 Strategy Development

Following a review of estimated current and future occupational gaps for critical occupations, strategies were developed to address workforce needs. Strategy ideation was derived from a desktop literature review of broadband workforce development plans to identify leading practices from other state BEAD Five-Year Action Plans, other state broadband workforce development plans, and Washington state proposed workforce solutions developed by BATs and the state Workforce Training & Education Coordinating Board. Strategies and associated activities were then refined to align with overall workforce goals associated with Washington state's Five-Year Action Plan.

7.7.4 Current Workforce Needs Assessment

Although the state of Washington currently has a strong construction workforce, it may become harder for the broadband industry to hirer the workers necessary to complete BEAD projects. The passage of the Bipartisan Infrastructure Law and Inflation Reduction Act provides state, local, and tribal governments with needed funding to improve and expand existing infrastructure. However, the timelines associated with implementing both federal programs will cause public and private subgrantees to compete for talent across sectors, with forecasts predicting that the broadband industry will require some of highest numbers of workers during peak years of construction. [238]

According to the Washington Employment Security Department's occupation gap analysis report, the gap in occupations potentially related to broadband deployment increased between 2022 and 2023. While broadband needs only represent a percentage of the gap, it is still worth noting where potential gaps exist. **Table 30** lists the Standard Occupation Codes for potential broadband expansion related jobs, noting that some of the occupation titles differ from those identified in the NTIA's analysis in **Figure 17**. Equipment and line installers and repairers and engineers (electronics, electrical, and civil) are all facing increasing deficits. There has been a particularly large increase (102%) in the demand and supply gap for electrical engineers in the last year.

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[234] U.S. Government Accountability Office (2020), Telecommunications Workforce. Accessed at: https://www.gao.gov/products/gao-23-105626

[235] America Achieves (2022), Creating and Expanding a Diverse Broadband Workforce with Good Jobs and Career Pathways. Accessed at: https://americaachieves.org/wp-content/uploads/2022/06/America-Achieves-Broadband-Workforce-Report-June-2022.pdf

[236] Fiber Broadband (2023, Broadband Workforce Development Guidebook. Accessed at: https://fiberbroadband.org/wp-content/uploads/2023/05/Broadband-Workforce-Development-Guidebook-FBA-and-Cartesian-April-2023.pdf

[237] Maine Connectivity Authority (March 2023), Maine Broadband Workforce Strategy. Accessed at: Maine Broadband Workforce Strategy

BroadbandOhio (2021), Strengthening Ohio's Broadband and 5G Workforce. Accessed at: Ohio Broadband & 5G Workforce Strategy

[238] McKinsey (2022), Will a Labor Crunch Derail Plans to Upgrade US Infrastructure? Accessed at: https://www.mckinsey.com/industries/public-sector/our-insights/will-a-labor-crunch-derail-plans-to-upgrade-us-infrastructure

Table 30: Occupational Supply and Demand Gap Analysis related to Broadband Expansion in Washington State from May 2022 to May 2023[239]

Standard Occupational Classification Codes	Occupation Titles	2022	2023	% Change
472073	Operating Engineers and Other Construction Equipment Operators	714	791	11%
474099	Construction and Related Workers, All Other	86	21	-76%
473019	Helpers, Construction Trades, All Other	59	43	-27%
499051	Electrical Power, Line Installers and Repairers	-16	-34	113%
492021	Radio, Cellular, and Tower Equipment Installers and Repairers	-28	-24	-14%
472061	Construction Laborers	-57	551	-1067%
499052	Telecommunications Line Installers and Repairers	-96	-145	51%
131199	Business Operations Specialists, All Other	-239	0	-100%
474011	Construction and Building Inspectors	-258	-315	22%
471011	First Line Supervisors of Construction Trades and Extraction Workers	-271	-105	-61%
492022	Telecommunications Equipment Installers and Repairers, Except Line Installers	-278	-306	10%
172072	Electronics Engineers, Except Computer	-289	-340	18%
119021	Construction Managers	-853	-738	-13%
172071	Electrical Engineers	-962	-1,940	102%
172051	Civil Engineers	-1,296	-1,926	49%
434051	Customer Service Representatives	-5,248	-5,736	9%
Total		-9,032	-10,203	13%

Bolded rows indicate occupations with increase in deficits

Key Deficit Surplus

[239] Washington State Employment Security Department (n.d.), Supply/Demand Report. Accessed at: https://esd.wa.gov/labormarketinfo/supply-demand-report

Other sources also reinforce these workforce gaps identified by the Washington Employment Security Department. According to the NTIA's State Workforce Analysis Report, three of the occupation groups with the highest forecasted percentage deficits are software engineers (-13.8%), trenchers (-13.1%), and fiber and wireless technicians (-11.1%), as shown in **Figure 17** below.[240] Additionally, in a survey WSBO sent to 100+ public and private ISPs throughout the state, respondents indicated that they are anticipating workforce gaps for jobs primarily related to technician positions, such as construction laborers, installation technicians, and field service technicians. Specifically, seven of 18 respondents who answered the question asking about potential staff shortages for broadband deployment indicated that hiring for various technician positions was a challenge, and 10 of 33 respondents indicated that hiring staff for broadband deployment is a challenge overall.

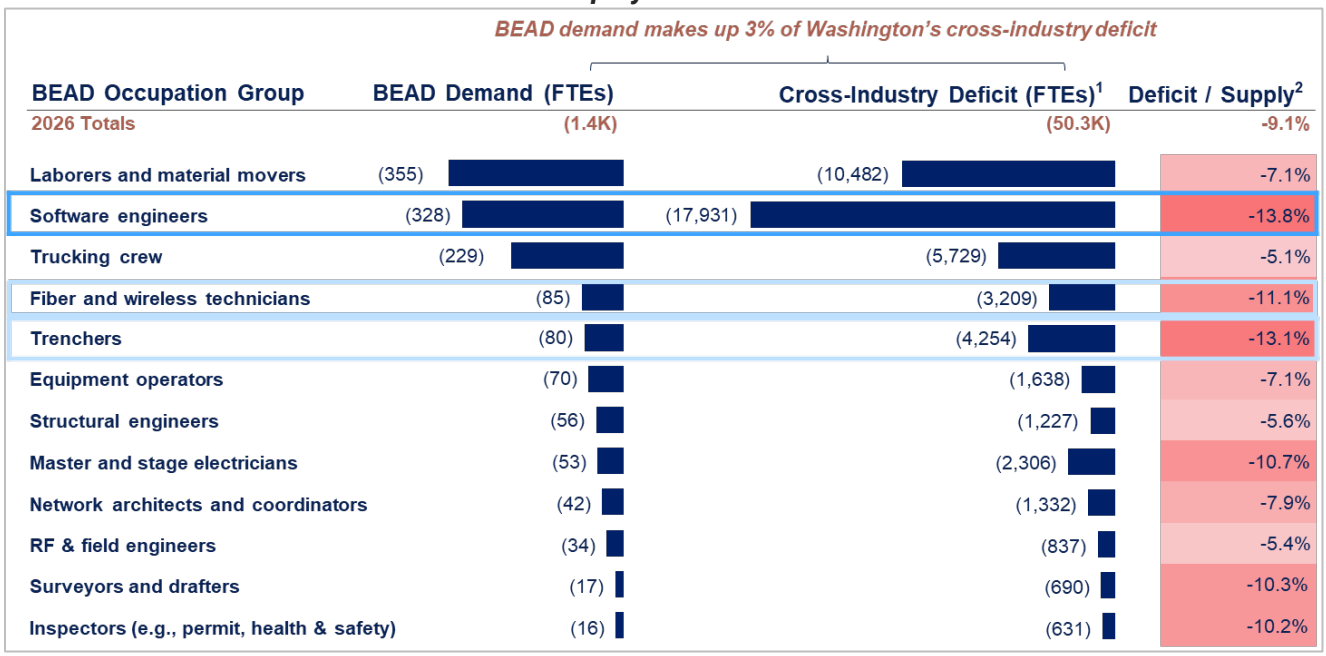
Example responses related to specific positions and obstacles to hiring

Survey respondent 1: *Field technicians, provisioning staff, middle management*

Survey respondent 2: *Construction and installation technicians. The cost to bring on new staffing.*

Survey respondent 3: *Communication technicians/installers, we have a hard time finding people with* experience

Figure 17: Washington State Summary of Deficit / Supply for BEAD Related Full-Time Employees[241]



[241] NTIA (2023) Washington Workforce Research Findings.

Digital Literacy Skills Gap

Figure 18: Frequently Cited Desired Skills from the Washington State Library's Digital Skills Assessment

In addition to workforce needs related specifically to broadband deployment, there is a need for broader digital skills training for the general population to support the accessibility of additional workforce training and education opportunities available online. According to the Washington State Library's 2023 digital skills assessment report, more than half of the 97 study participants, which included almost all underrepresented communities with the exception of veterans, rated their digital skills as only either weak or fair.[242] Additionally, the report found that the skillset that participants desired the most were foundational skills required to use a device and participate online, as **Figure 18** shows. This indicates a need and opportunity to continue working towards digital upskilling for Washington's workforce to meet requirements for higher-wage occupations, such as information technology (IT) related careers. This need is only expected to grow as the ESD has estimated that job openings in the 10 most prevalent IT fields over the next five years may increase from approximately 74,500 openings annually to over 82,200 openings – an increase of 15%.[243]

Each of the state's regional workforce development councils also identified skills gaps related to digital literacy or technology skills, demonstrating a need for digital skills building to keep up with predicted workforce demands, as **Table 31** shows. For example, regional workforce plans indicate that although proficiency in Microsoft Office Suite is essential to a variety of jobs, many workers do not possess these skills. In response, many of the workforce plans also cited efforts to ensure that their region's WorkSource Centers can aid workers in building the computing skills necessary for success in today's workplace. For example, the Northwest Workforce Council noted how they launched the Northwest Computer Literacy Instruction Corps (CLIC) program with a pilot grant from Microsoft.[244] The CLIC is a highly functional platform of volunteer computer tutors that provides courses for individuals who need basic introduction in the use of technology and are unable to navigate online WorkSource resources without specialized training. The CLIC introductory training matriculates well with more advanced courses offered by community and technical colleges, providing a solid foundation for digital skills development. Replicating digital skills training such as CLIC in other regional WorkSource Centers may augment the number of workers that can take advantage of the increase in IT-related jobs following the expansion of broadband in Washington state.

[242] Washington State Library (2023), Digital Skills Assessment. Accessed at: Home - Washington State Library Digital Skills Assessment - LibGuides at Washington State Library
[243] Washington Workforce Training and Education Coordination Board (July 2023) Legislative Summary
[244] Northwest Regional Workforce Council (2020) Workforce Plan 2020-2024. Accessed at: https://wtb.wa.gov/wp-content/uploads/2023/04/3-NWC_Regional_Workforce_Plan_2020_2024-FINAL.pdf

Table 31: Digital Skills Gaps Identified in Workforce Development Council Reports

Workforce Development Council	Digital Skills Gaps Identified
Olympic Consortium Workforce Development Council	Computer technology and software and data analysis skills. Degrees, credentials and/or on-the-job experience in all areas of IT are also needed.
Pacific Mountain Workforce Development	Microsoft Excel, Microsoft Word, Microsoft PowerPoint, Microsoft Visual Studio, Microsoft SharePoint
Northwest Workforce Council	Digital literacy and computer technology skills
Workforce Snohomish	STEM-related skills, including information technology
Workforce Central	Information technology and cybersecurity skills, computer technology skills
Workforce Development Council of Seattle-King County	Digital literacy and information technology skills, digital skills
North Central Workforce Development Council	Computer literacy even at a basic level is a skill deficit for many individuals who already face multiple employment barriers, and many of North Central's customers find distance learning technology difficult to access or use
South Central Workforce	Computer literacy across multiple industries and specialization for specific sectors, such as manufacturing
Workforce Southwest Washington	STEM-related skills, including information technology
Eastern Washington Partnership	Manufacturing technology skills
Benton-Franklin Workforce Development Council	Digital literacy skills, information technology skills (Microsoft Office and Productivity Tools), software development principles
Spokane Workforce Council	Information technology (Microsoft Office and Productivity Tools), computer technology skills

7.7.5 Statewide Strategies to Meet Workforce Needs and Achieve Goals

There are multiple strategies that the WSBO plans to utilize to help achieve workforce goals to support developing an equitable workforce that focus on skill development and training, and result in fair distribution of economic benefits. Earlier several workforce-specific activities and strategies were identified in **Sections 5.2 and 5.3**; this workforce plan expands on those activities to provide additional context and illustrate examples of their implementation. The WSBO is in the process of connecting with stakeholders throughout the state to assess how they can contribute to these efforts to help support deployment to unserved and underserved locations across the state and more broadly identify opportunities for digital upskilling of the state's workforce in relation to broad economic goals.

Establish a Broadband Workforce Development Taskforce

Pinpointing Washington state's exact workforce demands are difficult in this early planning phase, so establishing a taskforce would ultimately allow the state to quickly respond to the specific workforce challenges BEAD projects would face. Although workforce needs will vary according to the project and subgrantee type – particularly as subgrantees may range from local governments to small network providers to large ISPs – some subgrantees will be better positioned to respond to workforce shortages than others. For example, initial interviews and survey data indicate that larger ISPs are typically able to draw from a wider pool of both in house staff and subcontractor teams to complete deployment projects. On the other hand, smaller ISPs, particularly those situated in more rural areas, struggle to attract workers. This potential gap in the rural workforce is also noted by a 2022 Government Accountability Office report on the telecommunications workforce.[245]

To help support all potential subgrantees and projects, the WSBO will work to coordinate workforce development through a workforce development taskforce. This taskforce may include representatives for other state, local government, and tribal entities, along with higher education institutions, community colleges and trade schools, trade representatives, union representatives, and ISPs. This group would be charged with establishing a statewide workforce strategy that incorporates regional and local needs for broadband deployment and coordinate with other digital upskilling initiatives. Additionally, the taskforce could be consulted during review of BEAD applications and approved subgrantee projects to identify specific workforce gaps that may hinder the implementation of these projects and allocate resources accordingly, focusing on specific job gaps and regional needs. For example, having a representative from Washington's Workforce Training and Education Coordination Board on the taskforce may help in advising updates to regional workforce plans and programs to address specific training and employment opportunities based on the number of projects located in that region.

Coordinate and Expand Existing Workforce Programs and Develop New Programs

In line with the state's ambition to improve coordination with educational institutions, as outlined in **Section 5.2.5.2,** the ideal place to start is with educational institutions and workforce programs already providing training in related fields. According to information from the U.S. Bureau of Labor Statistics, eight of the 12 occupations NTIA identified in its workforce report – see **Table 31** above – require some kind of education beyond a high school diploma, such as vocational training, associate's degree, or bachelor's degree, as **Table 32** describes. Fortunately, secondary and post-secondary schools throughout the state already offer programs that could help fill workforce gaps, using programmatic institutional knowledge to scale proven training programs. For example, preliminary data collected by the State Board for Community and Technical Colleges (SBCTC) indicates that there are 33 colleges and universities in the state system that currently offer academic programs in related fields – primarily in IT, engineering, and computer science – with 350+ certificate and degree options. Examples of these degrees include: an Associate in Applied Technology for Network Technologies, an Associate in Applied Science for Electronic and

[245] U.S. Government Accountability Office (2022), Telecommunications Workforce. Accessed at: https://www.gao.gov/products/gao-23-105626

Communications Systems Technology, and a Bachelor of Applied Science for Computing and Software Development. Building off of these and other such programs, the state could help facilitate relationships with educational institutions like the SBCTC and existing broadband workforce employers, such as ISPs, to curate programs specific to the industry needs and identify where in the state additional programs should be provided.

Table 32: Key BEAD Occupation Group Entry-Level Requirements[246]

Occupation Group*	Entry-Level Requirements		
	Typical Formal Education	License(s)	Training
Laborers and material movers	• N/A	• Commercial driver's license	• 1 month of on-the-job training •
Software engineers	• Bachelor's degree in computer and information technology or a related field, such as engineering or mathematics	• N/A	• N/A
Trucking crew	• High school diploma • Professional truck driving school	• Commercial driver's license	• N/A
Fiber and wireless technicians	• Postsecondary education (such as an associate's degree) in electronics, telecommunications, or computer networking	• N/A	• On-the-job training
Trenchers	• High school diploma •	• Laborer's International Union of North America certifications (varies)	• 2–4-year apprenticeship • On-the-job training
Equipment operators	• High school diploma • Vocational training (varies)	• Commercial driver's license	• 3 or 4-year apprenticeship
Structural engineers	• Bachelor's degree in civil engineering	• Professional engineer license • Certifications from American Society of Civil Engineers • Others	• N/A
Master and stage electricians	• High school diploma	• Licenses (varies)	• 4–5 year apprenticeship

[246] Bureau of Labor Statistics (n.d.), Occupational Outlook Handbook. Accessed at: https://www.bls.gov/ooh/a-z-index.htm.

Occupation Group*	Entry-Level Requirements		
	Typical Formal Education	License(s)	Training
			• On-the-job training
Network architects and coordinators	• Bachelor's degree in computer and information technology or a related field, such as engineering	• Certifications (varies)	• N/A
RF and field engineers	• Bachelor's in electrical engineering, electronics engineering, or a related engineering field	• N/A	• N/A
Surveyors and drafters	• Drafters: High school diploma • Surveyors: Associate of applied science in drafting or a related degree	• American Design Drafting Association's certifications	• N/A
Inspectors	• Construction or Building Inspector: High school diploma • Health and Safety Inspector: Bachelor's degree in occupational health and safety or a related field	• Certifications (varies)	• On-the-job training

Additionally, Washington state can leverage other agencies and funding sources that comprise the state's talent pipeline development system including its existing Registered Apprenticeship program to increase skill building and learning opportunities for Washingtonians interested in pursuing a career related to broadband infrastructure or digital equity. Overseen by the Washington State Department of Labor & Industries, the state's Registered Apprenticeship program provides both on-the-job training with an employer and classroom instruction that develops highly trained, knowledgeable, and skilled professionals. Each apprentice works with a journey-level professional who helps them learn the knowledge, skills, and abilities needed by their employer. At the end of the apprenticeship, each apprentice graduates with a state-issued, nationally recognized industry credential. The credential aspect is particularly important for workforce development in a field like telecommunications, which requires training certifications for many workforce opportunities related to broadband deployment. This strategy also aligns with the priority activity outlined in **Section 5.2.5.3**, coordinating with ISPs across the state, to encourage participation in Registered Apprenticeships to increase the number of skilled workers in Washington communities. The state also includes other services such as labor exchange, job application support, business services and incumbent worker training.

Funds can be provided to the Workforce Training and Education Coordinating Board (WTB) to oversee a planning and implementation process, including, but not limited to, resource mapping for skills training and workforce development services; creation of new programs to fill training

gaps; support for employer-based programs to recruit and train new hires and upskill incumbent workers as needed; and fund programs targeted to specific, underrepresented communities or populations, such as formerly incarcerated individuals, persons of color, Indigenous and Native American persons, veterans, and others.

The state will also consider facilitating a Peer-to-Peer Learning program between PUDs to upskill workers. Peer-to-Peer Learning is when one or more learners teach other learners, allowing employees to work through new concepts and share ideas with their peers working on similar projects. the Peer-to-Peer Learning concept is especially feasible for PUDs, as they are not market competitors, are public entities with similar organizational structures, and are guided by the same regulatory and legislative requirements. Utilizing this method of training would likely increase the number of workers available for broadband deployment and management projects.

Improved coordination is also an essential component for supporting digital skills and digital literacy training, as discussed in **Sections 5.2.6.1 and 5.2.6.2**. WTB recently submitted a digital literacy workforce proposal to the Washington State Legislature.[247] The proposal seeks to take steps to open access to IT-related employment for underrepresented populations and communities historically left behind in Washington's economy, in addition to improving technology agency and digital literacy for those who are unable to connect to the digitized world. Using state funds to leverage existing resources and mobilize public and private, state, local, and tribal partners to establish a digital literacy curriculum and certification process, establish the IT Service Corps, and establish new models of easily navigable pathways to IT-based career success would help bridge the digital divide and increase the digitally literate workforce in Washington state.

Ensuring that these programs are accessible to everyone, regardless of language or current occupation, will also be important to overcome the digital divide. Here, the state could look at replicating programs such as one in Skagit county where the Northwest Agricultural Business Center offers bilingual basic and advanced computer courses free of charge, with a focus on farmers gaining business digital literacy skills. This could be done by working with existing partners, such as Digital Navigators or local BATs.

Raise Awareness of Broadband Career Opportunities

Beyond establishing new or expanding existing programs, increasing the awareness of all programs will be crucial to ensure their success in building a pipeline of highly skilled workforce in broadband related careers related to design, construction, and customer support. For example, the state of Ohio has plans to develop a career pathway model that can showcase to stakeholder "on ramp" and exit points for

Spotlight on high school training program in Washington

IsoFusion, a telecommunications service provider based in Tukwila helped establish a career and technical-education program focused on fiber-splicing skills to start in the 2024 to 2025 school year at the White River School District outside of Seattle. GigabitNow, a fiber-network operator that is a unit of Isofusion, plans to recruit from the program and further train graduates.

Source: Wall Street Journal

[247] Workforce Training and Education Coordinating Board (2023), Digital Literacy and IT Career Equity. Accessed at: WA BEAD & DE - DL - Digital Literacy & IT Career Equity.pdf - All Documents (sharepoint.com)

broadband career that would help map out broadband occupational opportunities along the educational continuum.[248]

This type of resource could be shared on existing workforce information portals like the Washington Career Bridge that could be built out to help jobseekers find employment opportunities, understand the specific skill and competency needs for those jobs, locate appropriate education and training opportunities available, and help all workers navigate the credential and certification pathways to available jobs and promotional opportunities within the broadband sector. This portal will enable employers to list, not just available jobs, but also the necessary skills, competencies, and experiences required for each job at each level, using a common taxonomy to describe these factors. Education and training providers will be able to track skill needs in their region and, over time, be able to track signals from industry about how jobs and occupational pathways are changing. Local economic development councils and regional workforce boards can also help to disseminate and spread awareness through different channels. Similarly, by sharing the Washington Career Bridge resource on its project website or with community engagement partners, WSBO can help promote broadband-related educational opportunities and occupations.[249]

Promoting broadband opportunities with high schools to develop internship or training programs for specific roles that may have critical gaps, as mentioned in the spotlight, can also help with training the next generation of broadband workers and start them on a career path early.

Washington state will also prioritize outreach activities that can help recruit historically underrepresented populations into broadband deployment or other technology fields, thereby contributing to a diverse broadband workforce. Such activities may include encouraging ISPs to send representatives to career fairs at schools, colleges and universities that serve a higher proportion of low-income students or racial and ethnic minorities or focusing on recruitment at schools located in rural counties.

Establishing and Communicating Workforce Criteria for BEAD Funding

The most direct way that the WSBO can influence workforce development is through the development of clear and specific guidance regarding fair labor practices, workforce requirements, and safety measures. As outlined in the BEAD NOFO, ensuring that there is a process in subgrantee selection to evaluate compliance with federal and state labor and employment laws will be an important process strategy. Additionally, the WSBO continues to consider how it will weigh small or minority owned business utilization, promote local hiring, and promote fair wage standards, among other important labor requirements. All of these will ultimately impact the supply and demand of the broadband workforce, whether by encouraging individuals to switch to a broadband-related career or influencing an organization's hiring plan. The WSBO will outline these criteria in greater detail as part of the Initial Proposal.

248 Broadband Ohio (2021), Strengthening Ohio's Broadband and 5G Workforce. Accessed at: https://broadband.ohio.gov/explore-broadband/strengthening-ohios-broadband-5g-workforce

249 Workforce and Education Coordinating Board (n.d.), Washington Career Bridge. Accessed at: Washington Career Bridge

7.7.6 Local Workforce Strategies

Relying solely on a statewide approach will be insufficient to adequately address all workforce needs. Therefore, to more fully understand how Washington state can meet its broadband workforce needs, it is important to look to local and tribal workforce strategies for a granular understanding of regional-specific needs. Most counties and tribes that submitted a Community Action Plan – see **Appendix** Error! Reference source not found. **–** also provided a brief workforce assessment for their region as it relates to broadband infrastructure and digital equity work. Common workforce concerns were also identified; one primary concern focused on the lack of available workforce for remote or rural counties and tribes. To combat this obstacle, those counties or tribes may move forward with a regional workforce development and coordination approach. One successful example of regional coordination to fulfill workforce needs is the joint Pathways to Infrastructure grant proposal, which requests funds for workforce development programs for broadband deployment, IT, fiber optic construction, cybersecurity and other topics submitted by the Pacific Mountain Workforce Development Council for Mason, Lewis, Grays Harbor, Pacific, and Thurston Counties.

Local workforce solutions proposed in the Community Action Plans include identifying local institutions that can form a local development partnership due to similar training course offerings or leveraging existing physical facilities that may be used for workforce training. Examples are shown in **Figure 19** and include local colleges and training and business centers.

Figure 19: Example workforce resources in Lewis County and Skagit County

Local workforce resource in Lewis County
Centralia College offers a communication systems class (ERA 235) every spring. Additionally, the Southwest Washington Flexible Training Center is available to community organizations, members, and businesses to rent for their training needs

Local workforce resource in Skagit County
The Northwest Agricultural Business Center offers bilingual basic and advanced computer courses free of charge, with a focus on farmers gaining business digital literacy skills, providing a strong foundation in workforce planning.

Table 333 below provides a snapshot of workforce concerns and proposed solutions identified in the Community Action Plans.

Table 33: Proposed Workforce Solutions in Community Action Plans

Workforce Concern	Proposed Workforce Solution
Remote geographic location and low population density	• Work with surrounding counties through regional coordination to create a pool of qualified and experienced construction workers. • For example, Pacific Mountain Workforce Development Council will be submitting a Pathways to Infrastructure grant proposal that would fund workforce development programs for broadband deployment, IT, fiber optic construction, cybersecurity training, and more in Mason County, as well as Lewis, Grays Harbor, Pacific, Thurston Counties.
Shortage of experienced construction workers	• Upskill community members through pre-existing programs: for example, Veterans could be upskilled through Washington state's YesVets Program.

	• Encourage local ISPs to augment on-the-job training opportunities for employees looking to shift careers.
Lack of basic computer and technical skills related to broadband deployment	• Establish partnerships between local BATs, educational institutions – community and technical colleges, local workforce development council, and community organizations to support digital literacy training and knowledge-transfer around basic computer skills. • Establish a technical skills community center to train additional workers, especially those needed for broadband deployment.
Limited staff capacity for grants management and application	• Increase capacity building funding to provide rural and disadvantaged areas with the ability to hire additional staff to both apply for grants and manage the project and related funding if selected.
Lack of community awareness	• Invest in the promotion of training programs and apprenticeships designed to support BEAD related activities, such as broadband deployment, fiber optic construction, customer support, network management, and security. • Develop public campaigns to elevate community awareness of workforce opportunities related to training programs, available certification programs, and traditional and non-traditional training and education resources.

Leveraging the proposed workforce solutions identified in Community Action Plans – such as the ones described above – will ensure that Washington is accounting for concerns identified at a local and regional level. Since many of the local workforce solutions proposed overlap, this is where the statewide overarching strategies and activities can help create cohesion and support for regional coordination efforts. In the next phase of the BEAD program, the WSBO will work with workforce development stakeholders across the state to build off this initial workforce plan and to establish a broadband workforce development taskforce that can support identifying activities at an even more granular local level.

7.8 WSBO ARPA Capital Awardee Affordability Programs and DE Efforts Beyond Participating in BATs[250]

Public Utility District No. 1 of Franklin County

Franklin PUD will be developing a wholesale broadband assistance program that will be available to subscribers based on if they are already involved in a free and reduced lunch or electric service program. This data is already being gathered by the Child Advocacy Center (CAC) of Franklin County and the local school districts. Once the school districts have verified these accounts, the ISPs are incentivized to pass on a discount to the customers. Another discount often provided is Franklin PUD comparing customer's electric bill to determine cost of broadband service. If qualified, customers can match the same discount for their electrical services. Other eligible groups such as the elderly or those living with disabilities, retail service providers (RSPs) are required to offer generous discounts (up to 30%). Eligibility is determined based on information provided by organizations like Big Bend Rural Electric Association (REA).

Franklin PUD will also be working with ISPs on the technical side to bring them up to date on the new wholesale offerings and provide technical support on installations, provisioning, and troubleshooting. The PUD will provide educational information to institutions such as Mid-Columbia Library and local schools to highlight available resources related to fiber connections and job training.

Public Utility District No. 1 of Grays Harbor County

Grays Harbor PUD (GHPUD) Discount Program- Senior Discount Program: GHPUD currently offers a discount to low-income senior customers for their eclectic utility service. The PUD is evaluating if offering a similar discount for broadband services is feasible. The Senior Discount Program qualifications are as follows: -Are at least 62 years of age -Have a household annual gross income of $32,988 or less -Receive an electric bill from the P.U.D. in your name or have the bill included in your rent.

Project HELP: Through this donation fund, GHPUD in partnership with the Coastal Community Action Program (CCAP) community members may contribute to neighbors to support keeping their utilities paid up when they are experiencing financial hardship. Project Help began in 1984 and has helped many neighbors in need in the nearly 40 years of operations. This program gives local community members a chance to help other local families when circumstances have made it impossible for them to pay their utility bills. Contributions are collected in a variety of ways: -Customers of Grays Harbor PUD can contribute a small amount mailed in with their electric bill each month -Make a one-time donation by filling out the pledge payment coupon and returning it with their monthly bill payment or calling the PUD to submit a donation over the phone.

There are no administrative costs deducted by the Grays Harbor PUD or CCAP from the contributions. GHPUD and CCAP donate their time and facilities to support this important community program. Of the contributions received, 100% go to CCA.

[250] Note: Information comes directly from awardees, and the current status of any programs described needs to be verified with individual awardees

Public Utility District No. 1 of Jefferson County

Jefferson County's PUD (JPUD) has low-income rates for its electric and water customers that will be automatically extended to eligible internet service customers as well. Eligibility is based on income, with verification done in house by JPUD staff. JPUD's low-income rate is available to customers who earn either 150% of the median federal poverty level or less or are over the age of 62 whose household income (after allowable deductions) does not exceed $30,000 per year. The low-income benefit for internet service comes in the form of a $20/mo. discount for JPUD internet service customers. A $10 discount is extended to residential customers of our open access providers, with a strong incentive to the provider to match the discount. Eligible customers can receive both ACP and JPUD low-income benefits, meaning some low-income customers could receive 150/150Mbps internet for only $15/mo.

Kittitas County

There are no installation fees for customers accessing the network and the end user rates coupled with the ACP program make this an incredibly affordable program with high-capacity broadband services.

Kittitas County intends to establish an online marketplace where consumers can engage in the best internet experience most fitting their budget. This innovative new method will provide residential and business consumers an opportunity to competitively review ISP offerings and streamline their purchase of services. Through this program, the county will offer a no-cost installation and provisioning program for all consumers of the broadband network, not just low-income households. Everyone in the community will enjoy the same program of affordability and access to the best possible products by utilizing this marketplace. Additionally, the marketplace will not be limited to terrestrial broadband providers. As many residents outside the proposed project area will still not have access to traditional ground-based connectivity options that exceeds 25/3, those local wireless providers who have worked to historically fill this gap will be able to offer services where needed. The proposed project has included fiber routing to geographic points necessary for maximum wireless coverage to provide backhaul capability for wireless ISPs.

Lewis County Public Utility District No. 1

Lewis PUD intends to establish an online marketplace that allows consumers to engage in the internet experience. This marketplace will provide residential and business consumers the opportunity to streamline their purchase of services. Through this program, the PUD will offer a no-cost installation and provisioning program for all consumers of the broadband network, not just low-income households. Everyone in the community will be able to enjoy the same program of affordability utilizing this marketplace. Furthermore, those that cannot currently use broadband will be invited to the locally developed community center where assistance on access will be provided to all community members.

The population must have knowledge of how to leverage the Internet to maximize their benefits of access. After successful network expansion, the PUD will work with the local library and

community center to provide digital literacy classes for community members, including training programs and tech support for Internet-based skills.

The Lewis County PUD Broadband Access Project will renovate an existing community center to provide Americans with Disabilities Act (ADA) compliant accessibility to three designated computer stations and four desks for bring-your-own-device stations. Connectivity will also be provided to households in the community that are currently unconnected or that cannot achieve broadband speeds The Baw Faw Grange #34 has agreed to become a Community Center under the Rural Utilities Service (RUS) Community Connects grant. The Grange's grant funded computer stations will be accessible to the community before, during, and after regular business hours, and on weekends. The Grange is well positioned to serve in this vital role to offer connectivity to the residents of the project areas. For the Baw Faw Grange and the Boistfort Valley, broadband access will allow local students adequate access to school programs offered through the Internet, provide access to agriculture information for our local farmers, and provide critical Internet access to our local school and fire department. This community center, further discussed throughout this application, will serve as the digital equity and inclusion center that this community needs to gain adequate access and education to use, adopt, and enjoy the broadband services this project will deliver.

Lincoln County

The successful completion of the project will make future digital equity programs more relevant. The project will solve the availability of broadband for the area and efforts can focus on affordability issues (assisting users in signing up for ACP), lack of device issues (providing devices that can be used to access the internet), and knowledge-based issues (providing training and support for users to utilize the accessibility to its fullest extent).

Lincoln County's Economic Development Council (EDC) will facilitate adoption assistance activities as part of the County's efforts to address digital equity. The libraries in Lincoln County play a critical role in the addressing digital equity through technical support, digital literacy programming and the availability of devices. Each of the five libraries in Lincoln County offer public computers with free Wi-Fi that can assist in the enrollment in ACP programs. The library has e-readers available for checkout, and digital downs loads such as eBooks and audiobooks and digital literacy programs to teach patrons how to best utilize technology. Each library offers extensive research databases covering K-12 education, social sciences, science and technology, literature and language, health and medicine, world and local news, business and more. These internet resources are accessible to all patrons.

In addition, the Lincoln County libraries offer access to online courseware for technology training at no cost through the Washington State Library and Microsoft Imagine Academy. Microsoft's digital literacy program has easy multimedia courses on computer basics, the Internet and online safety without any sign-in required. Advanced users can take courses that qualify for Microsoft Certification testing. Course topics span the gamut of advanced IT use, from database classes to developer programs. The Lincoln County Libraries offer a robust collection of programs and courses designed to improve the digital literacy of those they serve.

Mason County Public Utility District No. 3

In partnership with their retail service providers, Mason County PUD 3 offers a low-income discount for qualifying services. PUD 3's electric assistance programs are very effective in providing a helping hand to customers in need. The Low-Income Fiber Discount expands assistance programs to fiber consumers and allows qualifying low-income households to see a slight reduction in broadband access costs. This discount amounts to a $10/month reduction in wholesale costs to the retail service provider. Participating retailers have made a commitment to not only pass on the discount to the end user, but to match it with an additional $10/month discount. This means, qualifying customers are eligible to receive a $20 monthly discount on their internet bill and bring the price of gigabit broadband below the advertised cost of DSL in Mason County. These customers will no longer have to decide between inadequate internet and affordable service. Now, they can get the best internet available at incredible prices. There are no speed or data caps associated with the low-income fiber discount. Qualifying customers for the Low-Income Fiber Discount program are low-income seniors aged 61 years and older with permanent, not federally subsidized housing served year-round by PUD 3 and an adjusted household income of less than $40,000 per year; and low income disable citizens with permanent, not federally subsidized housing served year-round by PUD 3 and qualified by through the Community Action Council. Disabled customers are those that meet at least one of the following criteria: have a special parking permit, i.e., card, decal or special license plate for the disabled as set forth in RCW 46.16.381 (1), (a) through (f); meet the definition for the blind as set forth in RCW 74.18.020; or have 100% disability as determined by the Veterans Administration or qualify for Social Security Income or Social Security Disability benefits by reason of a disability.

PUD 3's retail Internet Service Providers offer outstanding technical support and site visits, during installation and when necessary, to end users to ensure their home and business networking connections are functioning appropriately. All of PUD 3's retail Internet Service Providers are required to offer customer service availability 24/7 through phone and email; Hood Canal Communications offers written tutorials on how to set up and use their email services. Advanced Stream staff, including their CEO, regularly make house calls to support their customers' technology needs.

Okanogan County Electric Cooperative

The Okanogan County Electric Cooperative (OCEC) project partners will continue their important work with local community organizations such as the Okanogan County Community Action Council, Room One, and the Cove (a local Food Bank) to provide outreach and enrollment assistance related to the ACP program. In addition to participating in the FCC's Affordable Connectivity Program, Methownet offers affordable service plans to residents who are enrolled in social service programs for the economically disadvantaged or physically disabled within the community. There is not a formal process in place. Instead, if a person asks for help, Methownet will assist them. Additionally, the Methownet team has gone above and beyond to discreetly work with customers, as needed, to provide discounts based on individual needs. Methownet has, in the past, provided discounts to seniors on a fixed income and has heavily discounted services for

local businesses during the COVID-19 pandemic. It also provided a year of free service for the family of a local laborer during a significant health and income crisis.

Beyond customer service and as a community service Methownet provides phone-based network support to both customers and non-customers to promote digital literacy and assist with security issues. If needed, they will dispatch their technical staff to provide on-site support. Additionally, over the last year, Methownet's customer base has increased 15 percent with no formal advertising. Word-of-mouth advertising has also been heavily relied upon and effective in this tight-knit community.

If granted funding, and in addition to the current level of helpdesk/technical support offered, Methownet will conduct digital navigation and training outreach to increase adoption. Working in coordination with community partners, OCEC and Methownet will hold monthly outreach events to engage with residents, provide training, ACP awareness, and advance digital adoption and literacy.

Methownet has worked with area homeowner associations (HOAs) to explore both wireless and fiber solutions to improve neighborhood service. It has collaborated with both the Pine Forest HOA and the Liberty Woodlands HOA to set up wireless access points. Further, Methownet is currently working with Methow Housing Trust to deliver fiber service to two developments and has also installed conduit for future fiber for the Trust. In addition, Methownet installed a fiber conduit in the Edelweiss subdivision.

Okanogan County Electric Cooperative (OCEC) operates a monthly newsletter via email, reaching most of the residents of Methow Valley and will advertise in the local newspaper. Print media will also be used to advise the community about the project and advertise the available services, assistance programs, and training opportunities.

OCEC utilized an emailed survey of its members on December 16, 2021, to gauge interest in broadband and evaluate the internet service market. They obtained 1,084 responses. The survey results indicated that 80 percent of respondents were overwhelmingly interested in switching to fiber broadband from OCEC, demonstrating an unmet demand for fiber-based services in the Methow Valley area. They will perform outreach activities as a follow-up to this survey.

Orcas Power and Light Cooperative

Orcas Power and Light Cooperative's (OPALCO) Energy Assist Program (EAP) was started in 2016 to assist low-income households with their OPALCO electric bills on a year-round basis. This is an OPALCO administered program that is meant to ease the affordability gap in San Juan County and support the community. The program is funded through rates as a separate line item on each co-op member's monthly bill. Members must be on the standard residential rate and verify their qualification through another endorsed low-income assistance program to qualify for the Energy Assist Credit. Once an individual obtains this assistance from OPALCO, the customer can use that discount to add a $25 discount to their monthly Rock Island internet bill. The program renews annually.

San Juan Island Chamber Subsidy for Low Income: A volunteer match account between OPALCO, Rock Island, and its main lending partner CoBank holds funds that may be used for the one-time

fees for connecting to services. The San Juan Community Foundation oversees the program and the eligible disbursement of funds. An individual who is an active participant in the ACP or EAP program qualifies for assistance in onboarding fees, up to $500, to connect to the internet service.

The partnered ISP, Rock Island, provides a full suite of technical support and offers many add-on services to support network security, propagation, and configuration for IT needs. As a company based in the same location as all our users, we offer a localized support operation, with local knowledge of the network and personalized troubleshooting. The ISP also sponsors user education classes for customers who are seeking assistance in using modern technology. The Cooperative publishes a monthly magazine sent to all members that includes helpful tips and articles to support members' technological needs. Engagement continues to be a major priority of the Cooperative.

Port of Skagit County

In addition to ACP, the program fees associated with this project do not require additional subsidization plans; there are no installation fees for customers and no end user rates above the ACP subsidy that is paid to the broadband provider.

There is no need for a secondary program because the Committed ISP (Astound Broadband) is an active and enthusiastic participant in the Affordable Care Program. A $30.00 discount will be available for application to a qualified customer's service cost each month. Furthermore, Astound has committed to offer a $30.00 service to all qualified customers for the Affordable Connectivity Program in the project area, resulting in a zero-cost service for low-income households in this project area. If the subscriber requires a higher-bandwidth service, they may also have the $30.00 ACP discount applied to their service cost, thereby reducing the end-user fee.

To support this free service program, the Port of Skagit will not charge a fiber lease rate to the ISP when a zero-cost service is offered to an to enrolled customer. Affordability and accessibility are critical elements for the Port, and we are committed to creating a community where all citizens have access to broadband and the skills to utilize the internet to enhance a quality of life.

Digital literacy in the Bow outlying areas project area is a priority of the Port of Skagit. The Port of Skagit leads the Skagit County BAT which is focused on digital equity and inclusion efforts countywide. The project area has an adoption rate to the Affordable Connectivity Program of 6% much lower than the national average of 17% which is a very poor result for the community. The Skagit County BAT is working to bring the enrollment numbers in the Affordable Connectivity Program countywide through the efforts of the Port and its partner organizations that make up the Skagit County BAT.

To increase the adoption rate of the Affordable Connectivity Program, the Port of Skagit is partnering with the Burlington-Edison School District to distribute information about the ACP. The school district has committed to wide distribution of this information to all students in the B-E District, in hopes of removing unnecessary barriers to learning and accessibility for their students and families, and to take another step towards digital equity in the district. Rebecca Skrinde, CEO of Helping Hands Solution Center which has a satellite location to serve this outlying area, knows firsthand of the hardships faced by her program participants. The Port of Skagit will also be

requesting the assistance of the Helping Hands Solution Center to distribute information through their program to reach people who may qualify for, and benefit from the Affordable Connectivity Program.

There are 441 potential locations in the zip code 98232 that the project area is in that are eligible for the Affordable Connectivity Program (ACP). The ACP and its predecessor, the Emergency Broadband Benefit (EBB), are subsidy programs intended to help all Americans have affordable access to the technologies that drive the modern digital economy.

Rural Local Initiatives Support Corporation (LISC) developed a map to assist digital navigators and digital inclusion support organizations gain insight into the reach of the new Affordable Connectivity Program.

Port of Whitman County

Inland Cellular participates in the Lifeline program, which offers discounts for eligible low-income households. The successful completion of the project will make future digital equity programs more relevant. The project will solve the availability of broadband for the area and efforts can focus on affordability issues (assisting users in signing up for ACP), lack of device issues (providing devices that can be used to access the internet), and knowledge-based issues (providing training and support for users to utilize the accessibility to its fullest extent).

Affordable, robust broadband internet service – Successful Digital Navigator programs have one key prerequisite – the wide availability of adequate internet service. The completion of this project enhances the success of Whitman County Library's (WCL) Digital Navigator program that provides technical support, digital literacy, and tools. WCL's Digital Navigator program provides assistance on a range of popular devices on various platforms, as well as help with requests on lesser-known devices and applications whenever possible. WCL's gifted devices program provides a laptop and MS Office to every qualifying household, up to 19 per library branch or 266 laptops overall, providing a device that can meet the basic computing needs of everyone in the household (work, school, telehealth, entertainment, communication, finances). WCL's Digital Navigator program incorporates digital literacy skills through different types of training, including via telephone, one-on-one appointments, walk-in assistance, scheduled classes, requested topic workshops, written material, YouTube videos, resources on our website, and Zoom sessions where appropriate. In addition to helping people with hardware issues, WCL's program assists with connectivity, cybersecurity, as well as training on how to use popular software and applications. WCL provides a tiered program by providing different levels of assistance depending upon what each resident's needs are. Library staff is available to assist with ACP questions and enrollment, online resources available for job seekers and online learners, and a wide range of other topics of interest to patrons. Each library is hiring a local high school student to help people during the additional open hours each week designated for Digital Navigator assistance, bringing a new perspective and skill set (especially with social media and apps) to the program. In addition, WCL recruits volunteers from the local communities who want to help deliver Digital Navigator services during library hours. For more involved hardware or software issues, designated staff with Pullman Marketing are available, including helping people communicate effectively with their ISP if needed. Pullman Marketing also established and staffs a hotline and email address for

people needing to set up an appointment or that cannot physically visit a library. For those residents who need someone to visit their home to assist, Pullman Marketing staff connects them with private providers of such services and helps arrange appointments.

Spokane Tribe of Indians

The service provided on this network will qualify for subsidization through the FCC Lifeline Program. Lifeline is the FCC's program to help make communications services more affordable for low-income consumers. Lifeline provides subscribers a discount on monthly Internet and telephone services purchased from participating providers. Standard Lifeline provides federal monthly support of up to $9.25. The discounts, which can be applied to stand-alone broadband, bundled voice-broadband packages – either fixed or mobile – and/or stand-alone voice service, help ensure that low-income consumers can afford state-of-the-art Broadband and the access it provides to jobs, education, and opportunities.

In addition, SBS participates in the E-rate program. The local school districts can receive e-rate funds to assist in providing their students with high-quality telecommunications access. The Universal Service Fund for Schools and Libraries, or E-rate, provides discounted services on telecommunications, internet access, and internal connections for all public and private schools, and libraries. The Universal Service Program is administered by the Schools and Libraries Division (SLD). The E-rate program provides discounts of 20-90% on the cost of eligible services. Discounts are based on the number of students eligible for the National Free and Reduced Lunch Program and the location of the organization (rural or urban). To qualify for this program, the home receiving our service must have a student enrolled in 1 of the 3 school districts near this area.

Policy: Members of the Spokane County / Spokane Tribe (SC/ST) BAT, including the Spokane Tribe of Indians, have commented on national legislation, attended webinars, engaged with comments specific to challenges from the rural community perspective, and discussed ways to promote and alleviate issues for Internet Service Providers and people who wish to enroll for the ACP Program. This will continue and the SC/ST BAT will continue to advocate for and support ISPs and efforts to deploy broadband in the area.

Digital literacy and training: The Libraries of Stevens County (LOSC) has applied for funding to the WA State Broadband Office for the Digital Navigators grant. This grant sparked conversations with the Spokane Tribe of Indians and multiple agencies serving constituents who need access and digital literacy. We are developing a "Digital Equity Census" to ascertain the true issue of not being connected (price, availability, fear, ignorance of value, etc.) with trusted people in each agency and then connecting them to Digital Navigators who will be regionally and tribally based with cultural competencies to address the specific need. LOSC has secured $20K from the Better Health Together Accountable Communities of Health to begin this work and met with Providence Health and Microsoft for a larger project and effort.

Tri County Economic Development District (TEDD)

PCs for PEOPLE: PCs for People is offering discounted desktop and laptop computers with the TEDD. This program offers households a one-time discounted desktop computer for $20.00, or a laptop for $49.99, while supplies last. Customers must be currently participating in a government-based assistance program or have a qualifying household income (less than 200% of federal poverty guidelines or 60% of area median income). Before completing your purchase, PCs for People requires photo identification and income documentation to ensure that customers meet our eligibility criteria.

Customers who engage in this program can access a desktop computer for just $20 with these features: Wi-Fi-enabled refurbished desktop with Windows 10 operating system. The system includes i5 or i7 processor, 6 GB RAM, and a 500 GB or solid state drive (SSD) hard drive. Microsoft Office, antivirus software, monitor, keyboard, and mouse. A one-year warranty is also included.

Customers who engage in this program can access a laptop for just $49.99 with these features: Wi-Fi-enabled refurbished laptop with Windows 10 operating system. The system includes i5 or i7 processors, 6 GB RAM, and 500 GB or SSD hard drive. Microsoft Office, antivirus software, and an AC power adapter. A one-year warranty is also included.

Seasonal Pause: An innovative cost-saving option has been set up for customers who may travel for long periods of time or not utilize a location as a year-round residence is the opportunity to lower their service cost and speed temporarily. This seasonal pause option allows customers to reduce their service to less than 1 Mbps and pay only $15/month while they are away and up to 4 months per year. Maintaining the reduced internet connection allows customers to remotely access their internet to monitor devices like cameras and thermostats while they are away but not spending money on higher capacity service that they don't need while not at home. There are no qualifying criteria to participate in this program.

Airband Initiative: This program allows participants to build their digital skills with learning resources from Microsoft. The Microsoft Airband Initiative gives the community access to curated learning resources that can help consumers build the technical skills needed to participate in today's digital economy. These skills include Digital Literacy and the foundational skills needed to understand and safely use digital devices, software, and the Internet. Get tips for protecting your privacy, using the internet safely and combating online bullying and harassment, learning how to code, accessing computer science courses online, and sharpening technical skills through hands-on learning modules. There are no eligibility requirements for this program, and access to this service will be provided for all customers. (https://www.microsoft.com/en-us/corporate-responsibility/airband)

Telemedicine Kits: The Colville School District received a $10,000 grant to purchase MiFi hotspots and pay for two months of service for graduating seniors, partnering with Libraries of Stevens County (LOSC) to manage, deploy and retain the hotspots for continued use. This led to a partnership with Providence Health Care (PHC) to solve telehealth access issues. LOSC developed five "check-outable" telemedicine kits including a hotspot puck and a laptop already loaded with Zoom software and appropriate links. Providers identify Stevens County patients who have a "prescription" for technology to participate in telemedicine appointments. The patient can bring the prescription to the library, or phone them, to reserve a telemedicine kit to take home or

use from the library parking lot on high-speed Wi-Fi. They can also receive training if necessary. In some cases, these patients are able to avoid a three-hour round-trip drive to a clinic or hospital and reduce the number of people in those clinics and hospitals.

Policy: Members of the SC/ST BAT have commented on national legislation, attended webinars, engaged with comments specific to challenges from the rural community perspective, and discussed ways to promote and alleviate issues for ISPs and people who wish to enroll in the ACP Program. These activities will continue and TEDD and SC/ST BAT will continue to advocate for and support ISPs and efforts to deploy broadband in the area. Their extensive contacts and long-term relationships have proven very effective in moving projects to completion.

Drive-In Wi-Fi Sites: One of the first Drive-In Wi-Fi projects deployed by WSU Extension was on the Spokane Indian Reservation; it became the third most visited site in the system. A second site was deployed at the Tri-County Economic Development District/WSU Extension office. The free drive-up Wi-Fi hotspots are still operational and there is no plan to end services.

TEDD Digital Equity Advocates: TEDD works in close partnership with the Stevens County WSU Extension Office on its digital equity initiatives which are set to ramp up in Q1 of 2023. TEDD will be an integral partner in advocating for the traditionally underrepresented populations in Stevens County to ensure that programs and resources are available to residents in the area as part of the state's BEAD strategy.

Public Utility District No. 1 of Whatcom County

Whatcom County Fire Chief Christopher Carleton FD5 asked if PointNet would consider free service to local hardship cases and PointNet has agreed to provide this on a confidential basis and the Fire Dept. will provide a list of those who may require special aid. FD5 indicated that a maximum of 15 such cases should be sufficient and PointNet has committed to support this provided that the Fire Dept. identify the parties and service addresses.

Yakima County

Prior to Affordable Connectivity Program (ACP) our committed ISP was involved in Emergency Broadband Benefit (EBB) program. The ISP gave 250 free internet accounts to homes during covid-19 in the Tieton and Naches area for students to do schoolwork. Later in process the schools paid for service at a discounted rate. There were no install fees and service charges. To this date these accounts are still active in ACP. Our committed ISP is also the K-20 internet service provider for the Tieton school district.

In this project area, 1,614 of the 5,303 households qualified for the ACP program are currently enrolled. While these numbers are higher than the national average enrollment of 17%, it still means that there are 3,689 homes in this project area that are qualified for the ACP program benefit that are not currently utilizing it.

Every subscriber will have no-cost access to an online subscription marketplace where residential and commercial subscribers can acquire open access broadband services from any qualitied ISP serving in this community. This user-friendly system, provided by COS systems, will create a highly flexible system to allow subscribers to navigate between service offerings, price plans, and

ISP's. This platform will enable subscribers who qualify to easily access the Affordable Connectivity Program and PUD sponsored Affordable Broadband program. This marketplace will also host other content, social services, digital equity, and other social services platforms usable by our rural community.

Our committed ISP works with the Tieton school district, sends mass communications that explain the ACP to enable enrollment, and provides tech support to help individuals with their computer needs. Forbes Mercy, the founder of our committed ISP, was also a co-founder in Yakima Networking, which provides free computer support for the committed ISP's internet subscribers.

Yakama Nation Library also has a program called Northstar Digital Literacy. The Program works on essential computer skills, essential software skills, and the use of technology in daily life. Also in Yakima County, the Yakima Valley Partners for Education from Heritage University (YVPE) has a Rural Accelerator Initiative Leadership Program (RALPH) that includes local school district leaders, community members, and Community–Based Organizations. One of the RALPH workgroup's focus areas is improving digital connectivity for students in Yakima County – they have been coordinating home connectivity for students and families through digital library subscriptions and internet and computer access. Yakima Neighborhood Health Services, a low-income medical clinic that serves all of Yakima County, has implemented a digital literacy program through their Community Health Worker program to help patients obtain smart phone, find options to support free minutes on their phones, and provide one-on-one education on using technology.

7.9 List of Public Engagement Activities Contributing to Washington's Plan in 2023

Table 34: List of Engagement Activities in 2023

Engagement Description	Engagement Date	Engagement Location	Number of People Engaged	Underrepresented Communities / Covered Populations
Interview with Public Works Board	03/16/23	Virtual	2	--
Interview with Department of Transportation	03/21/23	Virtual	3	--
Internet for All Kickoff	03/29/23	Virtual	330	All
Interview with City of Seattle & King County	04/04/23	Virtual	2	Individuals in covered households, Aging individuals, Individuals with disabilities, Individuals with language barriers, Individuals from racial or ethnic minority group
Interview with Office of the Superintendent Public Instruction	04/13/23	Virtual	2	Individuals in covered households, Individuals with disabilities, Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
Interview with Community Economic Revitalization Board	04/13/23	Virtual	1	--
City of Seattle Focus group (Spanish, Mixed Ages)	04/13/23	Virtual or in-person	5	Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups
Interview with Equity in Education Coalition	04/18/23	Virtual	3	All
City of Seattle Focus group (Elders from Mexico)	04/19/23	Virtual / in-person	5	Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups

Engagement Description	Engagement Date	Engagement Location	Number of People Engaged	Underrepresented Communities / Covered Populations
Interview with Goodwill	04/20/23	Virtual	1	Individuals living in covered households, Aging individuals, Individuals with disabilities, Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
City of Seattle Focus group (Vietnamese, Elders)	04/20/23	Virtual / in-person	5	Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups
City of Seattle Focus group (Housing Insecure, Community Workers)	04/20/23	Virtual or in-person	5	Individuals living in covered households, Individuals with language barriers, Individuals from racial or ethnic minority groups
City of Seattle Focus group (Vietnamese, Housing Insecure Individuals)	04/24/23	Virtual / in-person	5	Individuals living in covered households, Individuals with language barriers, Individuals from racial or ethnic minority groups
City of Seattle Focus group (Veterans, Community Workers)	04/24/23	Virtual / in-person	5	Veterans
City of Seattle Focus group (Vietnamese, Community Workers)	04/25/23	Virtual / in-person	5	Aging individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups
City of Seattle Focus group (Housing Insecure, Mixed Ages)	04/25/23	Virtual / in-person	5	Individuals living in covered households, Aging individuals
City of Seattle Focus group (Veterans, Mixed Ages)	04/25/23	Virtual / in-person	5	Aging individuals, Veterans
City of Seattle Focus group (Vietnamese, Mixed Ages)	04/26/23	Virtual / in-person	5	Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups

Engagement Description	Engagement Date	Engagement Location	Number of People Engaged	Underrepresented Communities / Covered Populations
City of Seattle Focus group (Veterans, Housing Insecure Individuals)	04/27/23	Virtual / in-person	5	Individuals living in covered households, Veterans
City of Seattle Focus group (Spanish, Housing Insecure Individuals from Mexico)	05/01/23	Virtual / in-person	5	Individuals living in covered households, Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups
City of Seattle Focus group (Cantonese, Elders)	05/01/23	Virtual / in-person	5	Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups
City of Seattle Focus group (Cantonese, Mixed Ages)	05/01/23	Virtual / in-person	5	Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups
ISP/PUD Focus group	05/03/23	128 N 2nd Street, Yakima, WA 98901	12	Individuals living in covered households, Aging individuals, Individuals with language barriers, Individuals living in rural areas
City of Seattle Focus group (Community Workers from Mexico)	05/03/23	Virtual o/in-person	5	Individuals with language barriers, Individuals from racial or ethnic minority groups
Sunnyside School District Listening Session	05/04/23	1110 S. 6th Street, Sunnyside, WA. 98944	30	Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
Pahto Bus Outreach	05/04/23	Yakama Nation	20	Individuals from racial or ethnic minority group, Individuals living in rural areas
Moses Lake Focus group	05/05/23	124 E. Third Suite 205 Moses Lake, WA 98837	15	Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
Cinco de Mayo Festival	05/05/23	Downtown Sunnyside, WA	15	Individuals with language barriers, Individuals from racial or ethnic minority group,

Engagement Description	Engagement Date	Engagement Location	Number of People Engaged	Underrepresented Communities / Covered Populations
Asotin Listening Session	05/09/23	2377 Appleside Blvd., Clarkston, WA 99403	5	Individuals living in rural areas
City of Seattle Focus group (Housing Insecure, Elders)	05/09/23	Virtual or in-person	5	Individuals living in covered households, Aging Individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups
City of Seattle Focus group (Housing Insecure, Mixed Ages)	05/09/23	Virtual / in-person	5	Individuals living in covered households, Aging individuals
Spokane Listening Session	05/10/23	Spokane County Water Resource Center, 1004 N Freya St, Spokane, WA 99202	17	Individuals living in covered households, Aging individuals, Individuals with language barriers, Individuals from racial or ethnic minority groups, Individuals living in rural areas
City of Seattle Focus group (Veterans, Elders)	05/10/23	Virtual / in-person	5	Aging individuals, Veterans
Okanogan Listening Session	05/11/23	Public Utility District #1 Of Okanogan County, 1331 2nd Ave N, Okanogan WA 98840	15	Aging individuals, Individuals from racial or ethnic minority group, Individuals living in rural areas
City of Seattle Focus group (Cantonese, Community Workers)	05/12/23	Virtual / in-person	5	Individuals with language barriers, Individuals from racial or ethnic minority groups
Interview with Stevens County Library	05/15/23	Virtual	1	Individuals living in rural areas

Engagement Description	Engagement Date	Engagement Location	Number of People Engaged	Underrepresented Communities / Covered Populations
Royal City	05/19/23	117 Camelia St. NW Royal City, WA. 99357	14	Individuals in covered households, Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
City of Seattle Focus group (Cantonese, Housing Insecure Individuals)	05/23/23	Virtual or in-person	5	Individuals living in covered households, Individuals with language barriers, Individuals from racial or ethnic minority groups
Interview with Washington State Library	05/24/23	Virtual	1	All
Lower Columbia College Career Fair	05/25/23	Lower Columbia Community College, 1600 Maple St, Longview, WA 98632	18	Individuals in covered households, Individuals with disabilities, Individuals with language barriers, Individuals from racial or ethnic minority group
Aberdeen Focus group	05/26/23	Grays Harbor County Public Health 2109 Sumner Ave. Aberdeen, WA 98520	8	Individuals with language barriers, Individuals from racial or ethnic minority group
Ocean Shores Focus group	05/26/23	Oceans Shore Lions Club, 832 Ocean Shores Blvd NW, Ocean Shores, WA 98569	9	Aging individuals
Interview with NoaNet	05/30/23	Virtual	1	
Forks Listening Session	05/30/23	481 S Forks Ave, Forks, WA 98331	5	

Engagement Description	Engagement Date	Engagement Location	Number of People Engaged	Underrepresented Communities / Covered Populations
Prescott	05/30/23	1111 Fishhook Park Road Prescott, WA . 99348	16	Individuals in covered households, Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
Port Angeles Food Bank	05/31/23	Port Angeles Food Bank, 632 N. Oakridge Dr. Port Angeles, WA 98362	83	Individuals in covered households, Aging individuals, Individuals with disabilities, Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural area
Spokane	05/31/23	1502 N Monroe St, Spokane, WA. 99201	24	Individuals in covered households, Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
Oak Harbor Listening Session	06/01/23	Oak Harbor Library, 1000 S.E. Regatta Drive, Oak Harbor, WA 98277	7	Individuals living in rural areas
Lynnwood Library Tabling Event	06/01/23	Lynnwood Library, 19200 44th Ave W, Lynnwood, WA 98036	21	Individuals in covered households, Aging individuals, Individuals from racial or ethnic minority group
Tacoma Focus group	06/02/23	714 South 27th Street Tacoma, WA 98409	5	Individuals in covered households, Aging individuals, Veterans, Individuals with language barriers, Individuals from racial or ethnic minority groups
Interview with Washington Public Utilities District Association	06/02/23	Virtual	1	--
Interview with Department of Corrections	06/02/23	Virtual	3	All

Engagement Description	Engagement Date	Engagement Location	Number of People Engaged	Underrepresented Communities / Covered Populations
Virtual Listening Session #1	06/07/23	Virtual	5	Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
Virtual Listening Session #2 (Workforce & Education Focused)	06/08/23	Virtual	97	Individuals living in covered households, Individuals with language barriers, Individuals from racial or ethnic minority groups, Individuals living in rural areas
Virtual Listening Session #3	06/09/23	Virtual	52	All
Walla Walla	06/15/23	209 E. Birch St, Walla Walla, WA 99362	19	Individuals in covered households, Individuals with language barriers, Individuals from racial or ethnic minority group, Individuals living in rural areas
White Salmon Focus group (Veterans Service Office)	06/21/23	Pioneer Center; 501 NE Washington St; White Salmon, WA 98672	9	Aging individuals, Veterans
Interview with Re-entry Council	06/26/23	Virtual	2	All
Interview with Ziply	06/26/23	Virtual	2	--
Interview with Washington Independent Telecommunications Association (WITA)	06/27/23	Virtual	1	--
Interview with Comcast	06/27/23	Virtual	3	--
Interview with Charter	06/28/23	Virtual	1	--

7.10 List of Tribal Public Engagement Activities Contributing to Washington's Plan in 2023

Table 35: List of Tribal Engagement Activities in 2023

Engagement Title	Engagement Type	Engagement Date	# Engaged
DTLL Workgroup	Virtual	03/07/23	5
DTLL Letter review	Virtual	03/15/23	4
Lower Elwha and BEAD/DE	Virtual	03/27/23	5
Broadband and Digital Equity and Jamestown S'Klallam	Virtual	03/28/23	4
Digital Equity and Tribal Broadband Leaders Network	Virtual	04/06/23	378
SC/SP Monthly BAT	Virtual	04/13/23	15
Colville Tribal Broadband Consultation	Virtual	05/03/23	N/A
ATNI Conference - Day 1	In-Person	05/08/23	12
ATNI Conference - Day 2	In-Person	05/09/23	200
ATNI Conference - Day 3	In-Person	05/10/23	15
Tribal Broadband at Spokane	Virtual	05/10/23	1
Tribal Broadband at Suquamish	Virtual	05/15/23	1
Tribal Broadband at Makah discussion	Virtual	05/22/23	1
Tribal Broadband at Shoalwater Bay Tribe	Virtual	05/23/23	1
Tribal Listening Session #1	Virtual	06/26/23	12
Tribal Listening Session #2	Virtual	06/2823	14
Tribal Listening Session #3	Virtual	06/29/23	8
FCC Tribal Workshop hosted by Lummi Nation	In-Person	07/12/23	N/A

7.11 Stakeholder Organizations and the Covered Populations They Serve

The table below identifies organizations that participated in engagement activities in 2023. This list is not exhaustive as it relies on information participants provided at the time of the event.

Table 36: List of Organizations That Participated in Engagement Activities in 2023

Stakeholder Organizations by Type
Adult education agency
Washington State Board of Community and Technical Colleges
Civil Rights Organization
Equity in Education Coalition
Latino Civic Alliance
Community anchor institution
Always Better Together LLC
ANSWERS Counseling
Asotin County Broadband Action Team; Asotin County Library
Asotin County Library
Cascade Wellness Clinic
Fort Vancouver Regional Libraries
Jefferson County Library District
Kitsap Regional Library
Liberty School District
Libraries of Stevens County
North Valley Hospital
Seattle Public Library
Sno-isle Libraries
Tacoma Public Library
Tri-State Memorial Hospital
Washington State Library
Whitman County Rural Library District
Willapa Behavioral Health & Wellness
Yakima Valley Libraries
County or municipal government
Adams County Development Council
Asotin County
Benton-Franklin Council of Governments
City of Anacortes
City of College Place
City of Oak Harbor
City of Ocean Shores
City of Poulsbo/ state Public Works Board
City of Seattle
City of Spokane

Stakeholder Organizations by Type
City of Tukwila
Cowlitz Wahkiakum Council of Governments
Grays Harbor County
Grays Harbor County Health Department
King County
Kitsap County
Lake Forest Park Citizens' Commission
Libraries of Stevens County
Lincoln County
Pierce County
Snohomish County
Spokane County
Town of Ione
Town of Wilkeson
Whatcom County
Yakima County
Economic development organization
CenterFuse
Chelan Douglas Regional Port Authority
Community Economic Revitalization Board (CERB)
Cowlitz Wahkiakum Council of Governments
Ferry County Sunrise
Key Peninsula Community Council
Lincoln County Economic Development Council
Mason County Economic Development Council
Mid-Columbia Economic Development District
North Olympic Development Council
Port District #2 of Wahkiakum County Washington
Port of Bellingham
Port of Clarkston
Port of Columbia
Port of Skagit
Port of Whitman County
Waitsburg Commercial Club
Yakima County Development Association
Faith-based organization
Sequim Trinity UMC
Higher education institution
Edmonds College
Olympic College
Washington State University

Stakeholder Organizations by Type
Washington State University Extension
Washington State University Extension - Stevens County
Washington State University Extension - Wahkiakum County
Internet service provider
Advanced Stream
Astound
Avista Edge, Inc.
BROADLINC
CCI Systems
Charter Communications
Columbia Energy LLC dba Columbia iConnect
Comcast
Comcast Cable Communications, LLC
Commnet Rural America, LLC
Company
CresComm WiFi, LLC
Crown Castle
Declaration Networks Group, Inc.
Hood Canal Communications
Hoosier Fiber Networks
Inland Cellular
Inland Networks
Interisland.net / Computer Place
Intermax
Klick Networks, LLC
Link Oregon (dba for Oregon Fiber Partnership)
LocalTel Communications
Lumen
Lumen/CenturyLink
Monmouth Independence Networks
NoaNet
NoaNet (Northwest Open Access Network)
Petrichor Broadband
Ptera Inc
Ranier Connect
Rock Island Communications
Silver Star Telecom
TDS
TDS Telecom
T-Mobile
ToledoTel

Stakeholder Organizations by Type
Velocity Communications Inc
Velocity Communications Inc.
Vyve Broadband
Washington Broadband
Whidbey Telecom
WIFIBER
Ziply Fiber
Key stakeholder partnership
Blue Mountain Action Council
Coastal Community Action Program
Foundation For Homeless & Poverty Management
Fresh Start Professional Services
Lewis County Broadband Action Team
Pend Oreille County BAT
Solid Ground
Sound Generations
Weld Seattle
Labor organization or union
Communications Workers of America
IEEE
Wireless Infrastructure Association
Local educational agency
Children's Life Inc.
Dieringer School District
Educational Service District 101
Kennewick School District
Mt Adams School District
Naselle-Grays River Valley Schools
Oak Harbor Public Schools
Onalaska School District #300
Seattle Public Schools
Sultan School District
The Little Farm Preschool
Nonprofit organization
American Indian Health Commission
Association of WA Cities
CAFE: Community for the Advancement of Family Education
Centro Americano
Coastal Community Action Program
Community Council
Community Health Plan of Washington

Stakeholder Organizations by Type
Comunidades sin Fronteras WA
Filipino Community of Seattle
Financial Empowerment Network
Goodwill Connect
Goodwill Industries of the Columbia
Goodwill of the Olympics & Rainier Region
KNKX
Mt Baker Rim Community Club
National Digital Inclusion Alliance
NCW Tech Alliance
Pacific NorthWest Economic Region
Pacific Northwest Gigapop
Safe Homes
Seattle YMCA
Snowden Community Council
Technology Alliance
Underwood Park & Recreation District
Urban League of Metropolitan Seattle
Walla Walla Community Council Broadband Study
Washington Independent Telecommunications Association
Washington Public Utility Districts Association
Washington State Horse Park
YMCA of Greater Seattle
Organization representing aging individuals (60+)
Sound Generations
Organization representing immigrants
Mother Africa
Other
ADTRAN
Amazon
Cisco
CPTS
Discovery Bay Resort (RV Park)
Discovery Bay Women's Club
E-Copernicus
eXp Realty
Flash Networks Group
Horrocks
JSI
Kitsap Bank
KLJ Engineering

Stakeholder Organizations by Type
LeadToResults, LLC
Learn Design Apply, Inc.
lightbox
LightRiver Technologies
Native Network Inc
Northwest Technologies
NT SYSTEMS
NTIA
Port of Bellingham
Port of Whitman County
Prysmian Group
Rain Forest Resort
Seabeck Systems
StateScoop
Strategic Alliance Consulting Inc.
Talitha Consults LLC
TEKsystems
Transportation and Warehouse
WBE Technologies LLC
Other - Organization representing underrepresented communities
Black Brilliance Research
Cambodian American Community Council of WA
Make Digital Equity
Public housing authority
Chicago Housing Authority
Seattle Housing Authority
Walla Walla Housing Authority
Public utility commission
Chelan County PUD
Grays Harbor PUD No. 1
Jefferson County PUD
Kitsap Public Utility District
Lewis County PUD
Mason PUD 3
Okanogan County Electric Cooperative
Pacific County PUD
Public Utility District No. 1 of Okanogan County
Snohomish County PUD
Washington Public Utility Districts Association (WPUDA)
Whatcom PUD
State agency

Stakeholder Organizations by Type
Aging and Long-Term Support Administration
Attorney General of Washington
House of Representative
House of Representatives WA08
OSPI
Public Works Board
Washington Department of Commerce
Washington Department of Commerce (PWB and CERB)
Washington Department of Health
Washington Department of Veterans Affairs
Washington Employment Security Department
Washington Public Works Board - Broadband Program
Washington State Broadband Office
Washington State Department of Financial Institutions
Washington State Department of Social and Health Services
Washington State Department of Transportation
Washington State Office of Equity
Washington Utilities and Transportation Commission
Tribal government or organization
Chehalis Tribe
Colville Confederated Tribes
Confederated Tribes and Bands of the Yakama Nation
Confederated Tribes of the Chehalis Reservation
Confederated Tribes of the Colville Reservation
Hoh Indian Tribe
HU-Yakima Valley Partners for Education
Jamestown S'Klallam Tribe
Lower Elwha Klallam Tribe
Lummi Indian Business Council
Lummi Nation
Makah Tribe
Nisqually Tribe
Quileute Tribe
Samish Indian Nation
Shoalwater Bay Indian Tribe
Spokane Tribe
Spokane Tribe of Indians
Suquamish Tribe
Swinomish Indian Tribal Community
T3 (Tribal Technology Training)
The Chehalis Tribe

Stakeholder Organizations by Type
Tulalip Tribes of WA, Salish Networks
Workforce Development Organization
Seattle Jobs Initiative
SWB Technology LLC
T3 Tribal Technology Training
Washington Cradle to Career Advocacy Network
Workforce Central
Workforce Development Council of Seattle
WorkSource Walla Walla

7.12 Washington's Tribal Communications and Outreach Plan and Engagement Activities

Washington State Broadband Office

Tribal Broadband Engagement Plan

Broadband Equity, Access and Deployment (BEAD) and Digital Equity Programs

Project Summary

The Washington State Broadband Office is charged with leading a statewide process to develop plans for **Internet for All in Washington**. This initiative will create strategies to ensure reliable, high-speed internet across the state of Washington, along with opportunities to invest in digital equity programs to make sure that in addition to internet access, people also have the tools and skillsets necessary to fully take advantage of the benefits that come with digital inclusion

The Five-Year Action Plan and the Digital Equity Act Plan will establish the state's eligibility for federal funding from the Biden-Harris administration's Bipartisan Infrastructure Law. This law delivers significant investments for the expansion of broadband access to help close the digital divide nationwide through the Broadband Equity, Access and Deployment (BEAD) Program and Digital Equity (DE) Program.

Tribal Engagement Objective

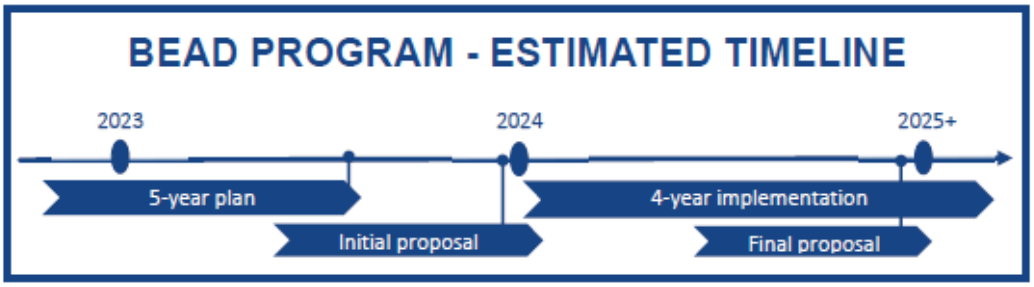
To confer with tribal governments at every step of the BEAD and Digital Equity planning process to ensure that tribes have numerous opportunities to provide input and feedback on the planning process, to shape what WSBO understands to be the unique needs of each tribal community/government, and any final documentation/plans that may impact their community, people or lands. The state of Washington is hopeful that all tribes in Washington will consult with the state as part of the planning process.

Approach

WSBO will embark on a tribe-informed engagement approach, which centers the expressed needs, resources and interests of each of the 29 federally recognized tribes in Washington state. This framework is based on the understanding that tribal governments are subject matter experts in the needs of their communities and therefore should direct how they wish to engage with WSBO throughout the planning process.

Methods of engagement WSBO will offer include but are not limited to:

- Formal Government to Government Consultation
- Virtual and in-person listening sessions
- 1:1 conversations between subject matter experts



Tiered approach scaled to individual tribal needs

- **Listen** to tribes about how they would like lead their engagement in this process.
- **Learn** about tribal priorities around broadband and digital equity.
- **Engage** with tribes to achieve shared clarity regarding key milestones for the BEAD planning process and potential funding opportunities.
- **Communicate** with tribes regarding eligibility and requirements for tribes as sub-grantees and offer technical assistance as requested.
- **Share** resources throughout the planning process.
- **Consult** with tribes, tribal leadership and staff
- **Follow Up** with tribes to maintain communication once established
- **Document** engagement for accuracy and accountability throughout the planning process

Examples of activities WSBO has and will continue to engage in to maintain open communication with tribes:

- Dear Tribal Leader Letter announcing the BEAD and DE programs.
- Announcements sent to Tribal Leaders and SMEs sharing relevant resources regarding the BEAD and DE Programs.
- WSBO attendance at regional conferences where tribal leaders will be in attendance such as ATNI and COMTAC.
- Virtual and in-person listening sessions
- Regional group listening sessions
- Individual information sessions/meetings

Contact information summary:

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7.13 Universal Services Estimated Cost Methodology

Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful. – George Box

In developing a universal cost estimate, it is important to remember that it is just a starting point for understanding the true cost of providing universal service across the state. However, given that Washington state had the opportunity to compare costs using two very different approaches, it was helpful to compare results between a very high-level statewide estimate approach and individual regional level estimates that accounted for design factors and fiber routing. In most cases the more detailed rapid design studies produced higher cost estimates, but overall, the conclusion drawn was the same – BEAD funding alone will be insufficient to provide a fully fiber network to all unserved and underserved locations. There will need to be alternative technologies considered in addition to alternative sources of funding whether through state match dollars, higher match percentages from subgrantees, or other mechanisms to close the funding gap.

7.13.1 Identifying Unserved and Underserved Locations

Two different data sets were downloaded for this project. The first set used was the V2 Fabric broadband serviceable location (BSL) points, which was downloaded in December of 2022. The second data set used was broadband data collection (BDC) data which was downloaded on July 7, 2023. For the State of Washington, the model included the following when filtering residential and commercial address points or locations.

- Cable
- Copper
- Fiber
- Licensed wireless
- LBR wireless

Conversely, the model excluded unlicensed wireless when filtering points or locations.

BSL address points are merged with BDC data, which contains information on if a point or location is marked as unserved, underserved, and served. Merging the two data sets resulted in 236,757 unserved location points and 79,886 underserved location points, bringing the total of unserved and underserved points for the State of Washington to 316,643.

This data was then linked to hex codes to determine the cost per passing. Hexagons are made using a geospatial system that divides the world into hexagonal cells, effectively forming a hexagonal grid system. These hexagons are used as a boundary to determine an area, which can range in size or resolution. The resolution or size used for this study was resolution seven which is a size of 1.80 square miles. Density is then calculated by taking the unserved, underserved, and served living unit counts that fall within the area of a hexagon which gives a measurement in terms of living units per square mile.

With the density of a particular unserved or underserved point now known, it is then applied to an equation that calculates the cost per passing of any unserved or underserved point based on the density range.

7.13.2 Accounting for Previously Funded Programs

Previously funded programs accounted for in GIS and number of locations served:

- Rural Digital Opportunity Fund (RDOF): 22,301
- ReConnect: 4,180
- Community Connect: 489
- Tribal Broadband Connectivity Project (TBCP): 3,204

The exact locations for these points were known, therefore these points were filtered out of the unserved and underserved data in GIS.

Previously funded programs not accounted for in GIS, subtracted out manually and number of locations served:

- American Rescue Plan Act (ARPA): 21,625
- Broadband Infrastructure Program (BIP): 3,937
- State Match Program: 1,393
- Community Economic Revitalization Board (CERB): 20,175
- Public Works Board (PWB) Broadband Program: 10,898

Other portions of previous funding that were accounted for are ARPA, BIP, State Match Program, CERB and PWB, as **Table 37** describes. The exact location of points for these programs was not known, therefore these points were left in for the cost analysis which established the gross universal service cost for Washington state. The dollar amounts and points for these funding programs were taken from data sources available as of June 2023. These amounts were subtracted from the cost analysis to arrive at the final value for the net universal cost for the State of Washington.

Table 37: Summary of Previously Funded Programs Not Accounted for in GIS

Total Cost	Underserved/Unserved Locations	Average Cost Per Passing	Notes:
$258,513,410	21,625	$11,955	The WSBO 2021 ARPA SLFRF and 2023 ARPA Capital
$37,999,113	3,937	$9,652	The WSBO 2022 NTIA BIP
$22,154,464	1,393	$15,905	The WSBO 2022 & 2023 State Match Program
$59,078,706	20,175	$2,929	CERB
$64,224,548	10,898	$5,894	PWB
$441,970,241	58,028	$7,617	Total for previously funded programs not accounted for in GIS

Previously funded programs not accounted for in GIS or subtracted out manually and number of locations served:

- Connect America Fund Phase II (CAF II): 16,644
- Alternative Connect America Cost Model, 2016 (A-CAM I): 13,460
- Alternative Connect America Cost Model, 2018 (A-CAM II): 4,074

Furthermore, there are three other funding programs that were considered within the State of Washington but weren't subtracted out. There were 16,644 CAF II funded sites in the State of Washington, however these sites do not meet BEAD requirements for upload and download speeds. Therefore, costs and points for CAF II funded sites were not subtracted out of the BDC data and were included in the cost analysis.

At the time this Plan was drafted, the Enhanced Alternative Connect America Cost Model (EA-CAM) program had just been announced. This program is an extension of the existing ACAM and ACAM II programs, which requires ISPs to meet BEAD download and upload speed requirements. In total there are 17,534 A-CAM I and A-CAM II funded project locations in the State of Washington. Since it is not yet known if all these locations or just a portion of the locations will be included as a part of the Enhanced Alternative program for A-CAM I and A-CAM II, they have not been subtracted out of the BDC data and were included in the cost analysis. Additionally, a specific funding amount has not been announced for the enhancement of this program in Washington, therefore, costs have not been subtracted out of the overall cost model.

As more information on the EA-CAM program is released including types of technology employed, and which providers will participate is released, it should be noted that removing all A-CAM I and A-CAM II points would reduce the overall net of unserved/underserved locations for the State of Washington by roughly 7-8%, which in turn would lead to a decrease in the overall net universal service cost for Washington.

Summary of Serviceable Location Data:

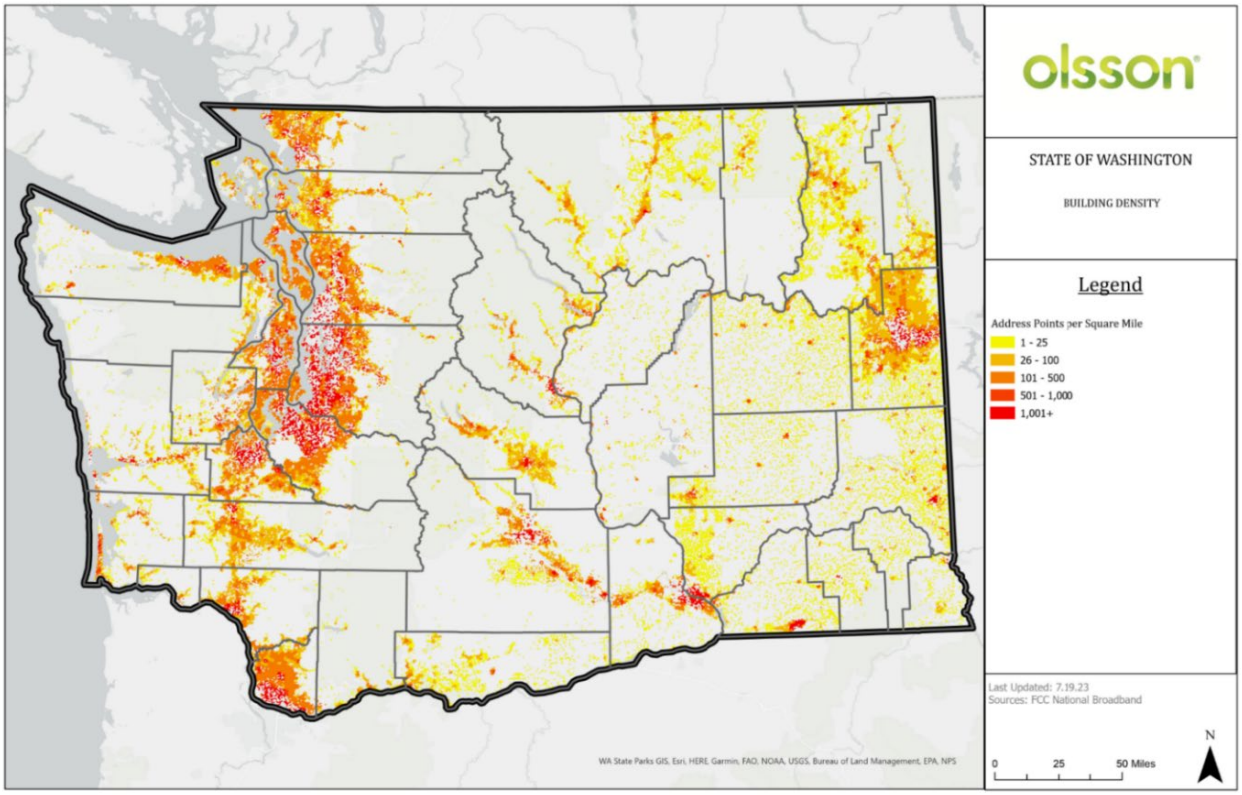
The total unserved and underserved locations subtracting for RDOF, ReConnect, Community Connect, and TBCP is 286,469 unserved and underserved locations. This is the location point total accounted for in the GIS model. Further subtracting the ARPA, BIP, State Match Program, CERB, and PWB funded locations brings the overall net unserved and underserved points to 228,441, which is summarized in **Table 38**. As stated above, CAF II, A-CAM I, A-CAM II costs and points are not included in the cost model. The cost model could be updated if locations for A-CAM I and II are provided.

Table 38: Net Unserved and Underserved Locations and Previously Funded Locations

Service Category	Locations	Service Category	Locations
Unserved	236,757	Previously Funded Programs	
Underserved	79,886	RDOF	22,301
Total Unserved/ Underserved	316,643	ARPA	21,625
		CERB	20,175
*Previously Funded programs that have not been subtracted out for points or funding. Reference the "Previously funded programs not accounted for in GIS or subtracted out manually" portion of the "Accounting for Previously Funded Programs" section of this Chapter.		PWB Broadband Program	10,898
		ReConnect	4,180
		BIP	3,937
		TBCP	3,204
		State Match Program	1,393
		Community Connect	489
		CAF II*	16,644*
		A-CAM I *	13,460*
		A-CAM II*	4,074*
		Previously Funded to Subtract	**88,202**
		Net Unserved/Underserved	**228,441**

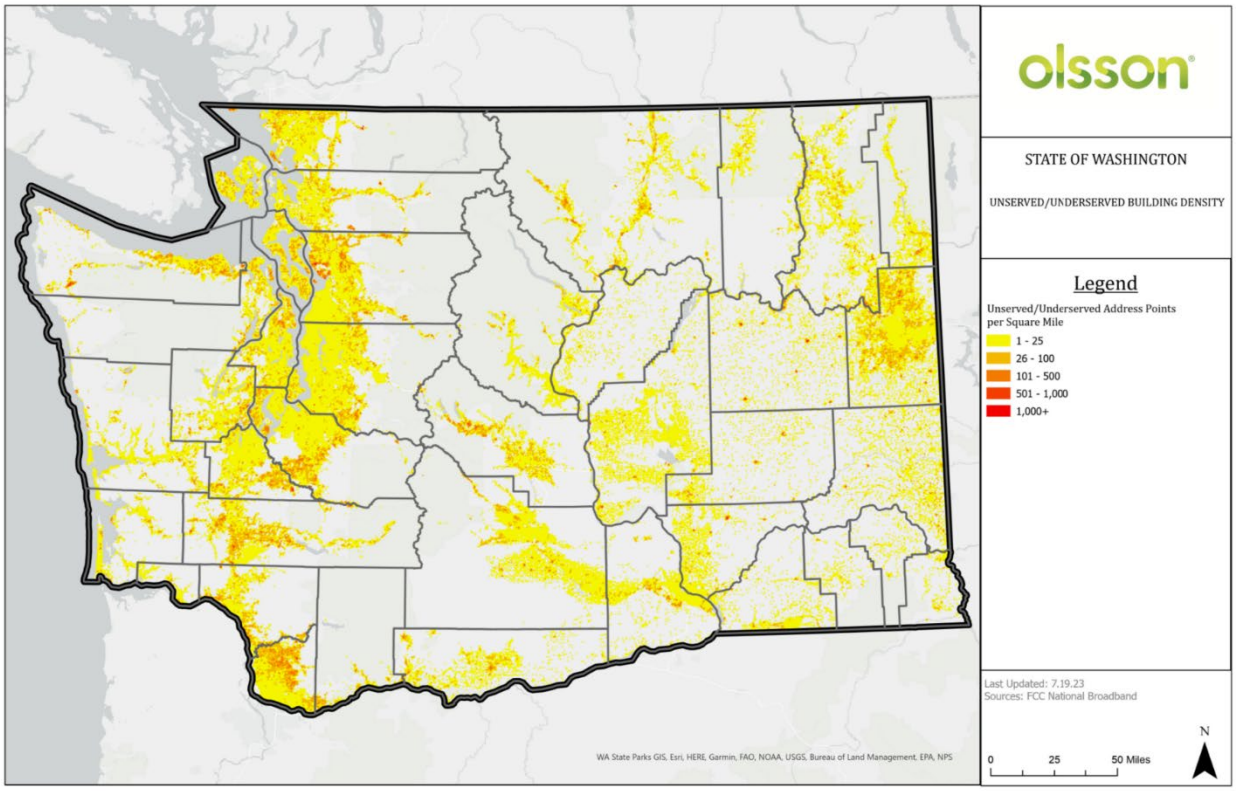
Map 22 illustrates address point density within Washington, with high density areas typically having the lowest costs for deployment. The highest density of address points, in red, is located along the I-5 corridor, the Spokane area and along I-82 through Yakima and Benton Counties.

Map 22: Address Point Density within Washington



Map 23 removes served locations and highlights where the greatest density of unserved and underserved address points is in Washington. Clark and Spokane Counties have some of the highest density of unserved and underserved locations. There are also notable pockets of unserved and underserved locations just outside of densely populated urban areas even in counties classified as urban such as Snohomish, King, Kitsap, Pierce, and Thurston Counties. Overall, as the map indicates, every county in the state has unserved and/or underserved locations that will need to be included as part of universal service cost estimates.

Map 23: Density of Unserved and Underserved Address Points



7.13.3 Cost Modeling and Cost Calibrations

Data for cost modeling was analyzed based on the hexagons – 1.80 square mile hexagon areas – included within the BDC data on a housing density basis – Living Units / Sq Mile – and applying an appropriate build cost per density threshold. Build costs were originally evaluated from studies and cost data from across the United States. In general, costs per passing are lower in dense urban areas where there is greater access to telecommunications infrastructure. Costs per living unit are higher in rural areas where the number of living units per square mile are less, houses are farther apart and the distance to telecommunications infrastructure is greater. Costs from national research were adjusted and calibrated to data based on recently awarded grant projects from the State of Washington which are listed below.

- ReConnect – 2019, 2020, 2022, 2023
- Infrastructure Acceleration Grant (Federal - ARPA SLFRF) – 2021
- Broadband Infrastructure Program (Federal - NTIA BIP) – 2022
- Broadband Infrastructure Grant (Federal - ARPA Capital) – 2023
- State Match Program – 2022 & 2023

More detailed information from these funding programs is included in **Appendix 7.5**. Inflation was considered, and we are presenting this data in 2023 construction dollars. Costs range from $1,190 per living unit in high density areas (1,075 living units per square mile and above) to approximately $25,000 per living unit in low density areas (five living units per square mile and below)—noting that is an average and there are costs that exceed that amount.

Model for Density Range of 50 to 1,075 living units/mi^2

Costs were initially calculated using a model from a Cartesian study that was prepared for the Fiber Broadband Association in June of 2019.[251] From this study, cost per passing was modeled using the following equation: ***Cost = (Cpass) = $7,549 - $2,161 * log10(Density)***. After further analysis, it was found that this model was most accurate for calculating costs between the 50 and 1,075 living units per square mile density range. Since this study was published in June of 2019, an inflation factor of 19% was used to align 2019 costs with present day costs.

Model for Density Range of 1,075 living units/mi^2 and above

This model was not accurate for calculating costs over a density of 1,075, due to lack of sufficient information of previously funded projects. Upon further research, it was found that average costs per passing in more dense, residential/urban areas are around $1,000. Again, an inflation factor of 19% was utilized to calculate the cost per passing in present day dollars, at a total of $1,190. Once this high-density threshold is reached, costs per passing generally won't go any lower. The

[251] Cartesian (2019), Fiber to the Home Study 2019. Accessed at: https://optics.fiberbroadband.org/Portals/0/Cartesian%202019%20FTTH%20Study%20Summary%20Findings%2020190604%20SENT.pdf

equation used to model cost per passing for densities over 1,075 living units per square mile is: ***Cost = (Cpass) = $1,190***.

Model for Density Range of 5 to 50 living units/mi^2

The Cartesian model was also found to be less accurate in predicting cost per passings for densities of 50 living units per square miles and below. The cartesian model essentially caps out at a max cost of $7,549 per passing at a density of 1 living unit per square mile which through further research was found to be exceedingly undervalued based on current project cost data. Data from Reconnect and ARPA Funding specific to the State of Washington was used to graph cost per passing vs. density of living units per square mile. Which is how the following equation was obtained for the low-density range: ***Cost = (Cpass) = $39,250 - $20,400 * log10(Density)***. This data was then used to develop a best fit line. This data was also used to establish the range of densities of use, which was between five and 50 living units per square mile. Since the funding data for these points ranged from 2019 to 2023, with most being more current, an inflation factor was not used for this range as there was concern that any factor would over inflate the cost per passing calculated.

Model for Density Range of 5 living units/mi^2 and below

The Cartesian model from 2019 did not have any points under a density of 10 living units per square mile, therefore a new model had to be developed. Data from Reconnect and ARPA funding specific to the state of Washington was referenced to model the density range of five living units per square mile and below. Unfortunately, limited data points from previous funding in Washington were available for points below a density of five living units per square mile. Looking at the data points for the region of 5 to 50 living units per square mile and the best fit line, a cost per passing of $25,000 equated to a density of five living units per square mile. Given the limited information for a density of five and below, it was decided that the model would provide an upper maximum of $25,000 per passing. Therefore, the equation used for a density of five living units per square mile and below is: ***Cost = (Cpass) = $25,000***. Since the funding data for these points ranged from 2019 to 2023, an inflation factor was not used for this range.

Table 39 illustrates how the unserved and underserved locations are distributed by density ranges and compares the density ranges to the percentage of the total cost and percentage of total unserved and underserved locations. The highest cost density range is from 0 to 10 living units per square mile (hh/mi²). While this is the second largest unserved/underserved range by sheer number of points (40,008) or approximately 14% of the total unserved and underserved count for the State of Washington, it also equates to roughly 38% of the cost per passing for the whole state. In comparison, the second largest density range by number of unserved/underserved locations is the 100 to 4,330 hh/mi², range. While this range has a total of 88,155 unserved/underserved points or nearly 31% of the total unserved/underserved points for the whole state, it only equates to a cost of 10.6% of the state's total cost. These correlations are understood and expected since more densely populated areas have lower unserved/underserved rates and a closer proximity to existing fiber backbones. Thus, more densely populated areas show a lower cost per passing and lower rates of unserved/underserved points.

Table 39: Cost in Relation to Density and Number of Unserved and Underserved Locations

Density Range (HH/Mi²)	Cost to serve ($)	Number of Locations	Percentage of Cost	Percentage of Locations
0 to 10	$937,194,599	40,008	38.1%	14.0%
11 to 20	$453,132,222	29,300	18.4%	10.2%
21 to 30	$271,433,931	25,067	11.0%	8.8%
31 to 40	$162,539,051	20,885	6.6%	7.3%
41 to 50	$95,241,638	17,039	3.9%	5.9%
51 to 60	$75,595,998	16,726	3.1%	5.8%
61 to 70	$63,891,681	14,782	2.6%	5.2%
71 to 80	$45,266,860	10,849	1.8%	3.8%
81 to 90	$48,522,699	12,074	2.0%	4.2%
91 to 100	$45,191,675	11,584	1.8%	4.0%
100 to 4330	$260,032,796	88,155	10.6%	30.8%
Totals	$2,458,043,150	286,469		

Figure 20: Cost estimates by building density regions

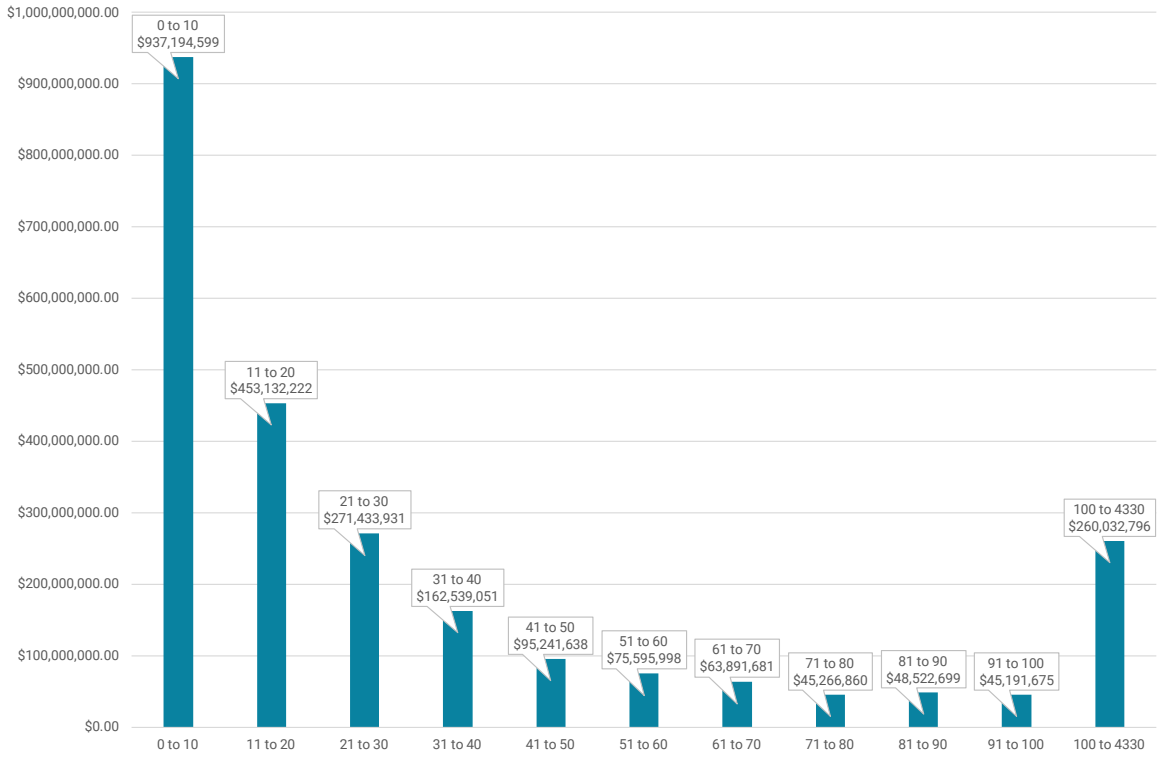


Figure 20 shows the cost per passing vs density regions as a visual representation of the information displayed in **Table 39**, which helps demonstrate that a large portion of the funding, more than three quarters, would needed to serve areas with a density below 50 hh/mi², with fiber—essentially these areas are likely to be the high-cost locations.

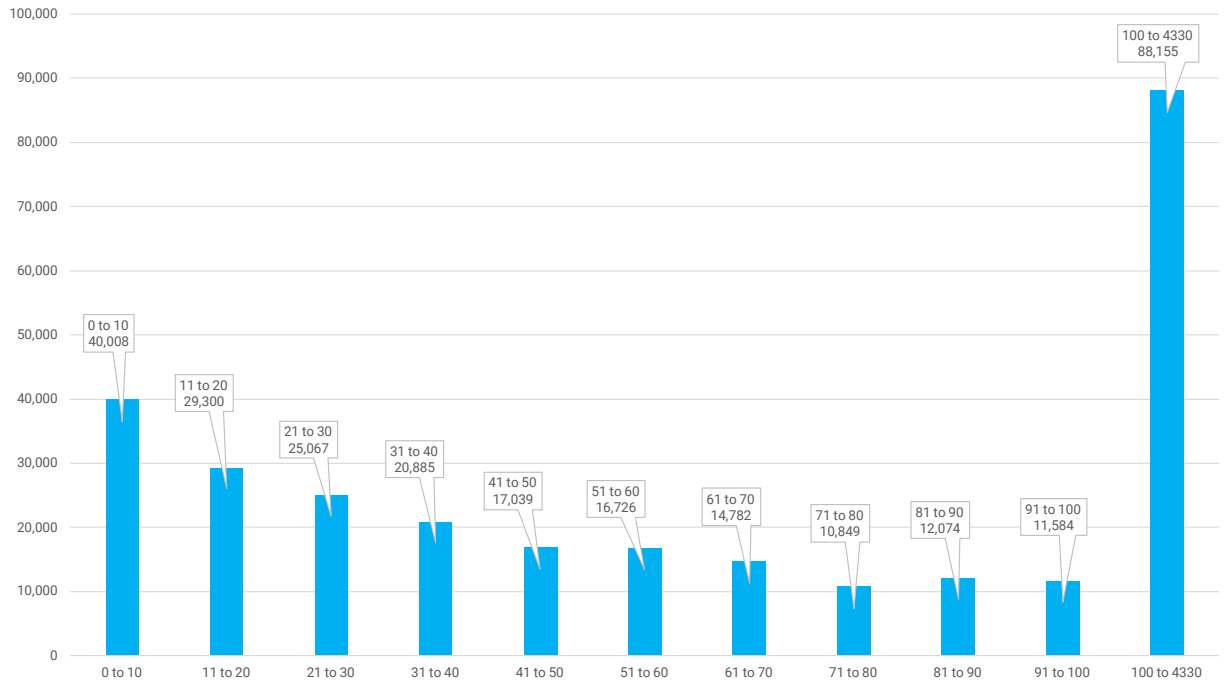
As **Table 40** summarizes and **Figure 21** illustrates**,** the majority of unserved and underserved locations are located in areas with a density above 50 hh/mi² with over 30% of unserved and underserved locations in the highest density range of 100 to 4,330 hh/mi², increasing the likelihood that they could be served with fiber with the current allocation.

Table 40: Percentage of Total Unserved and Underserved Locations by Density Regions

Density Range (HH/Mi²)	Number of Locations	Percentage of Total
0 to 10	40,008	14.0%
11 to 20	29,300	10.2%
21 to 30	25,067	8.8%
31 to 40	20,885	7.3%
41 to 50	17,039	5.9%
51 to 60	16,726	5.8%
61 to 70	14,782	5.2%

71 to 80	10,849	3.8%
81 to 90	12,074	4.2%
91 to 100	11,584	4.0%
100 to 4330	88,155	30.8%
Total	286,469	

Figure 21: Number of Unserved and Underserved Locations by Density Regions



7.13.4 Comparison of Olsson's Cost Model to Rapid Design Study Results

Breaking Point Solutions assisted counties and tribes who decided to opt into rapid design studies for expanding universal access (the Rapid Design Study) for their region. Twenty-six of 39 counties and four of tribes decided to participate since participation was optional. The Rapid Design Study included consideration for a hybrid of fixed wireless and fiber technologies and fiber connection routing which were not included in the Olsson model. These studies were conducted separately from the high-level BEAD cost estimate model developed by Olsson but were used as a comparison at the county level. Costs from Olsson's Model, the subcontractor who assisted with cost modeling, were compared to counties in Washington that were analyzed as part of the Rapid Design Studies conducted by Breaking Point Solutions as shown in the following tables. The Rapid Design Study for the counties listed below was developed using a high-level design of fiber optic routing by tying into existing fiber networks and deploying the use of wireless towers to service harder to reach areas. The Rapid Design Study also utilized OptiExpress Software, which contains a database of factors used for network design. Factors include census blocks, household data from the 2020 U.S Census and elevation data.

Olsson's data was derived from merging broadband serviceable location (BSL) address points with broadband data collection (BDC) data, which contains information on if a point/location is marked as unserved, underserved, and served. This information combined with the hex codes, allowed Olsson's Model to use the density of the living units per square mile to calculate the cost per passing. Within the Rapid Design Study, they looked at different ranges or combinations of fiber and wireless services, whereas the Olsson Model only evaluated fiber as the method of broadband service.

When comparing Olsson's all fiber model to the Rapid Design Study, the maximum fiber system design scenario was used from the Rapid Design Study to pull the number of fiber households and the fiber cost. The cost comparison was for the fiber component of the design cost only and did not include the fully burdened cost, which included alternative technologies and other project fees to make the comparisons between models more similar.

Key differences in methodology between the two studies explain the points served and cost discrepancies. While it is desirable to complete a high-level design for serviceable areas it was not practical to do for the entire State of Washington. Thus, general comparisons were made on the average cost per passing for fiber only between the Olsson Model and the Rapid Design Study, as **Tables 41 and 42** show.

Table 41: Summary of Olsson's Cost Model

Olsson Model		
County Name	**Number of Points Served**	**Avg CPP**
Adams	4,378	$12,597.34
Asotin	951	$18,328.30
Benton	4,386	$8,570.36
Clallam	10,090	$5,854.81
Clark	15,513	$4,357.30
Columbia	1,096	$20,101.06
Cowlitz	7,187	$7,585.79
Ferry	2,515	$17,264.20
Franklin	4,768	$13,926.89
Garfield	696	$22,682.58
Grays Harbor	3,157	$13,156.25
Island	5,670	$4,528.34
King	11,979	$4,504.24
Kitsap	7,100	$4,456.06
Kittitas	9,840	$8,878.44
Klickitat	5,136	$13,598.75
Lincoln	7,625	$11,580.31
Mason	6,256	$7,360.24
Skagit	6,923	$8,210.53
Skamania	2,851	$8,691.31
Spokane	25,762	$8,824.28
Stevens	15,469	$13,405.75
Walla Walla	3,149	$13,417.51
Whitman	8,109	$17,655.19
Yakima	8,262	$8,824.88
Totals:	**178,868**	**$11,134**

Table 42: Summary of Rapid Design Study

Rapid Design Study		
County Name	**Number of Points Served**	**Avg CPP**
Adams	1,502	$24,597
Asotin	712	$31,695
Benton	1,720	$9,411
Clallam	9,206	$3,061
Clark	20,738	$7,627
Columbia	636	$38,060
Cowlitz	12,319	$9,473
Ferry	2,390	$16,112
Franklin	2,854	$12,636
Garfield	350	$50,749
Grays Harbor	2,761	$13,261
Island	5,007	$11,364
King	1,564	$11,694
Kitsap	3,232	$21,282
Kittitas	7,635	$8,874
Klickitat	6,115	$16,973
Lincoln	2,747	$45,871
Mason	7,410	$9,895
Skagit	8,817	$6,247
Skamania	1,743	$5,641
Spokane	19,975	$11,639
Stevens	11,841	$54,383
Walla Walla	1,982	$17,420
Whitman	2,283	$46,743
Yakima	8,409	$10,904
Totals:	**143,948**	**$19,824**

As **Tables 43 and 44** describe, Olsson's Model accounted for 34,920 more unserved and underserved points than the Rapid Design Study since Breaking Point Solutions removed planned builds and areas with existing service providers based on dialogues with counties and tribes who participated in the Rapid Design Study. Olsson's Model for these counties was $563 million less than the Rapid Design Study Estimate. The eight counties highlighted in orange above – Adams, Asotin, Columbia, Garfield, Kitsap, Lincoln, Stevens, and Whitman – had the largest average cost per passing disparities: all over $10,000. This can be explained by the difference in methodology between Olsson's Model and the Rapid Design Study, which included various mixes of fiber optic and wireless solutions. Another contributing factor to cost was the aerial routing vs underground routing. The Rapid Design Study accounted for actual fiber routing needs and tailored to regional cost factors based on data that they had available, which also contributed to higher cost estimates in some of the counties identified.

Table 43: Difference Between Olsson Model and Rapid Design Study

Difference Between Olsson Model and Rapid Design Study			
County Name	**Number of Points Served**	**Total CPP by County**	**Avg CPP**
Adams	2,876	$18,206,167	-$12,000
Asotin	239	-$5,136,786	-$13,367
Benton	2,666	$21,402,583	-$841
Clallam	884	$30,900,061	$2,794
Clark	-5,225	-$90,584,201	-$3,270
Columbia	460	-$2,175,235	-$17,959
Cowlitz	-5,132	-$62,175,943	-$1,887
Ferry	125	$4,911,461	$1,152
Franklin	1,914	$30,340,394	$1,291
Garfield	346	-$1,974,925	-$28,066
Grays Harbor	396	$4,921,271	-$105
Island	663	-$31,225,302	-$6,836
King	10,415	$35,666,279	-$7,190
Kitsap	3,868	-$37,144,957	-$16,826
Kittitas	2,205	$19,610,831	$4
Klickitat	-979	-$33,944,810	-$3,374
Lincoln	4,878	-$37,707,098	-$34,290
Mason	-1,154	-$27,277,336	-$2,535
Skagit	-1,894	$1,763,485	$1,964
Skamania	1,108	$14,946,913	$3,050
Spokane	5,787	-$5,149,839	-$2,814
Stevens	3,628	-$436,577,431	-$40,977
Walla Walla	1,167	$7,724,732	-$4,003
Whitman	5,826	$36,451,921	-$29,088
Yakima	-147	-$18,776,843	-$2,079
Totals:	**34,920**	**-563,004,609**	**-$8,690**

Table 44: Summary Table for Comparison between Olsson Model and Rapid Design Study

	Comparison Counties for Rapid Design Study		
	Number of Points Served	**CPP by County**	**CPP**
Total	34,920	-$563,004,609	-$217,250
Average		-$6,160	-$8,690

Table 45 is a revised comparison of Olsson's Model to the Rapid Design Study by removing the eight outlier counties of Adams, Asotin, Columbia, Garfield, Kitsap, Lincoln, Stevens, and Whitman. By doing this, the point disparity closes by roughly 22,000 points and the cost per passing by county disparity is reduced from $8,690 to $987.

Table 45: Summary Table for Comparison between Olsson Model and Rapid Design Study with Outliers Removed

	Comparison Counties for Rapid Design Study		
	Number of Points Served	**CPP by County**	**CPP**
Total	12,799	-$96,946,266	-$24,677
Average		-$1,660	-$987