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A large, artistic image of fiber optic cables. The cables are bundled together and curve across the top half of the page. They are illuminated from below, creating a glowing effect with orange and yellow light trails. The background is a dark blue gradient.

WASHINGTON COUNTY Broadband Investment Strategy

Prepared for
WASHINGTON COUNTY

by

ECO
NW

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1. Introduction

Affordable, reliable broadband is critical to communities' access to economic and social opportunities, education, and healthcare. Broadband access is increasingly necessary for people to connect to telehealth opportunities, educational materials, employment resources, cultural entertainment, and other important information sources. However, not everyone in Washington County has access to affordable and reliable broadband internet. Lower-income residents, rural residents, and households within communities of color are often much less likely to have quality broadband service than higher-income residents, white households, and those who live in urban areas.

Washington County initiated a Broadband Investment Strategy to better understand community broadband needs and barriers to access, and to identify policies and investment opportunities to remove barriers to broadband deployment and accelerate investment in broadband programs and infrastructure.

This report summarizes the findings from a detailed county-wide analysis of broadband infrastructure, access, and affordability, and lays forth broadband investment and implementation recommendations based on these findings.

The purpose of this work is to help the County and its local government partners develop a shared vision and collaborative plan for potential future investments in broadband programs and infrastructure to ensure fast, reliable, and affordable internet access to all residents and businesses within the county.



Why Should Washington County Develop a Broadband Investment Strategy?

Economic Impacts and Benefits of Broadband

Broadband has become essential infrastructure; the need for high-capacity broadband is now pervasive across nearly all sectors of the economy. Broadband access is an economic mobility tool, allowing individuals to tap into resources, jobs, and entrepreneurship opportunities. Broadband infrastructure can also serve as an economic development tool, allowing regions to attract new industries and provide opportunities for innovation or increased efficiency within existing industries.

Governments, businesses, and nonprofit sectors rely upon high-capacity broadband to distribute resources, sell products, provide services, and seek employees. Ensuring equitable access to these services and opportunities can help individuals secure resources, employment, and economic stability. Specific economic impacts of broadband access include:



- **RESOURCE DISTRIBUTION & MANAGEMENT:** Government institutions and the nonprofit sector utilize online platforms to manage, inform, and distribute resources (e.g., grant funding). Residents’ inability to access reliable internet can impede their awareness of and ability to access these vital resources.
- **EMPLOYMENT OPPORTUNITIES & RESOURCES:** Broadband access helps job seekers and employers alike. Businesses increasingly rely on the internet to promote open positions and accept applications. Prospective applicants need internet to access job postings, professional trainings, and mentorship and employee support resources.
- **JOB CREATION:** Research shows that an increase of high-speed internet access can lead to job creation within high-tech job markets, directly increasing the number of available jobs.¹
- **JOB QUALIFICATIONS:** Positions increasingly require enhanced basic digital skills for qualification. Affordable and accessible digital skills training and resources are vital to prepare job seekers for a wide variety of industries (e.g., education, healthcare, etc.).
- **WEALTH MANAGEMENT & BUILDING:** Access to online banking services can help provide greater economic stability (e.g., direct deposits and finance management). Common barriers to these financial services include narrow identification requirements, predatory banking practices, lack of access to financial literacy trainings, and lack of access to bank accounts.² Reducing these barriers can increase equitable access to these wealth building and management services.
- **SERVICE & DATA MANAGEMENT:** Successful service and product administration rely on data management (e.g., the ability to store, process, and move large sets of data). Broadband infrastructure that allows large amounts of data transmission is necessary for reliable and efficient service and data management.
- **INFORMATION SHARING:** While print sources are still used to distribute information, schools, organizations, and city government distribute urgent information around local announcements and public safety measures through social media platforms (e.g., Facebook, email, Instagram). Reliable access to this information is important for the health, civic involvement, and social awareness of all communities.

Despite growing reliance on broadband access for resource distribution and economic opportunity, many households do not have equitable access to fast and reliable internet, affordable services, and accessible digital literacy training.

Social, Health, and Public Safety Impacts

Broadband access now directly and indirectly impacts a wide range of conditions that affect health and life outcomes, known as the social determinants of health (SDOH).³ The Center for Disease Control defines SDOH as “the nonmedical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies, racism, climate change, and political systems.”⁴ Examples of broadband’s impacts on the SDOH include:

- **EDUCATION ACCESS & QUALITY:** Broadband access can help “democratize” our education systems by providing equitable access to course material, free open education platforms, and resources.
- **HEALTHCARE ACCESS:** Telehealth access to health services through telecommunication technologies has been shown to improve health outcomes for communities without access to traditional health services. Telehealth access can play a particularly vital role in rural communities that lack convenient access to physicians and medical facilities.
- **SOCIAL & COMMUNITY CONNECTION:** From email to social media platforms, access to reliable and fast

1 Nick Turner Lee and Brady Tavernier, [Reimagining the broadband technology workforce](#) (Washington, D.C., Brookings, 2022).

2 BER Staff, “[Banking and Poverty: Why the Poor turn to Alternative Financial Services.](#)” Berkeley, CA: Berkeley Economic Review, April 15, 2019.

3 Adie Tomer et al., [Digital prosperity: How broadband can deliver health and equity to all communities](#), Washington, DC: Brookings, 2020, 18-19.

4 <https://www.cdc.gov/about/sdoh/index.html>



internet allows individuals to stay connected, informed, and engaged. Equitable access to these social webs is crucial for social bonding, information sharing, and civic engagement.

- **NEIGHBORHOOD & BUILT ENVIRONMENT:** Research continues to show how where one lives has a great impact on their overall life outcomes. Ensuring all neighborhoods have robust broadband infrastructure is crucial to providing equitable access to all the SDOHs mentioned above.

Family immigration status, non-English speaking families, the age of householders, the presence of children, and adverse living conditions are key indicators of lower internet availability, and many households with these intersecting identities experience the greatest barriers. For many communities, the lack of affordable and reliable broadband furthers their marginalization by preventing or diminishing their access to or quality of service or participation.

The impact of the COVID-19 pandemic further exposed the existing digital disparities and exacerbated the digital divide.⁵ To address this digital divide, recent federal and state funding has been allocated to support digital equity efforts. Most of these efforts include subsidizing internet service costs, device distribution, and sharing digital literacy resources. Additionally, smaller-scale community broadband investments through community-based organizations (CBOs) have also proven fruitful, with schools distributing Chromebooks and hot spots, libraries increasing their computer lab hours, and culturally-specific CBOs providing resources and translating digital literacy materials into multiple languages.

However, many communities still lack access to quality high-speed internet, depriving them of the vast array of social and economic opportunities broadband can provide. This report looks at the broadband access and digital equity issues specific to Washington County and identifies key opportunities to improve connectivity throughout the county.

DIGITAL EQUITY

Digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services.

It is important to note here the use of “equity” vs. “equality.” When we use the word equity, we accurately acknowledge the systemic barriers that must be dismantled before achieving equality for all.

DIGITAL INCLUSION

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

1. Affordable, robust broadband internet service;
2. Internet-enabled devices that meet the needs of the user;
3. Access to digital literacy training;
4. Quality technical support; and
5. Applications and online content designed to enable and encourage self-sufficiency, participation, and collaboration.

Digital Inclusion must evolve as technology advances. Digital Inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional, and structural barriers to access and use technology.⁶

⁵ Caius Z. Willingham and Areeba Haider, “[Rural Broadband Investments Promote an Inclusive Economy](#),” CAP (blog), American Progress Organization, July 12, 2021.

⁶ Definitions provided by the National Digital Inclusion Alliance, <https://www.digitalinclusion.org/definitions/>



Broadband Assessment Key Takeaways

Washington County's broadband needs are as diverse as the County itself. Large portions of rural western Washington County lack the infrastructure to access high-capacity broadband. In urbanized Washington County, the lack of broadband infrastructure poses less of a barrier, but communities face a host of other issues including a lack of affordability, devices, or digital skills to effectively access the internet. These realities necessitate a multifaceted policy approach for broadband planning in Washington County.

OUR ANALYSIS IDENTIFIED SEVERAL KEY TAKEAWAYS THAT SHOULD INFORM POLICY RECOMMENDATIONS:

- Investing in middle-mile and/or last-mile infrastructure would improve accessibility in rural areas.
- Even in areas that are served with physical infrastructure, accessibility and affordability challenges remain, especially among non-white lower-income households.
- Households that are eligible for federal and other programs to subsidize broadband affordability are not accessing these programs due to lack of awareness and other socioeconomic barriers.
- Community Based Organizations could be key partners in strategy implementation but are limited due to existing capacity and other high-priority issues.
- The jurisdictions in Washington County vary broadly in their prioritization of broadband in relation to other community services in the context of limited resources.
- Within Washington County, there is not a clear regional champion to act as a convener, a liaison to the State, and an information clearinghouse.

DEI FRAMEWORK

Washington County guided this broadband study through a diversity, equity, and inclusion (DEI) framework and a focus on advancing racial equity.⁷ This project team took a DEI approach, through targeted outreach and analysis of demographic data, in order to dive deeper into the specific issues of broadband accessibility and affordability among marginalized populations in Washington County.



⁷ Washington County uses the following definitions to guide the County's diversity, equity and inclusion (DEI) efforts:

Diversity: In an organization, the ways in which people differ. Diversity encompasses all of the different characteristics that make one individual or group different from another.

Equity: The result of fairness and justice in the creation and delivery of public policy. Equity in Washington County will exist when every county resident participates fully in the region's economic vitality, has access to the County's services and other resources, and has the opportunity to reach their full potential.

Inclusion: Welcoming and supporting the active engagement and participation of diverse individuals in the decision-making process of an organization or group.

Racial Equity: The condition that results when race no longer determines one's socio-economic outcomes. Resources contributing to racial equity include strategic investments, policies and practices that reverse racial disparities, eliminate institutional racism and ensure that outcomes and opportunities for all people are no longer predictable by race.

Washington County Racial Equity Resolution, <https://www.washingtoncountyor.gov/cao/documents/draft-equity-resolution-addenda/download?inline>



2. Broadband Needs and Gaps in Washington County

ECONorthwest and Uptown Services (the Consultant Team) worked with Washington County to conduct an analysis of broadband infrastructure, access, and affordability issues in the county. The Consultant team conducted interviews with city agencies and community organizations, analyzed data regarding internet availability by geography and across racial and economic variables, and conducted a survey to gauge broadband service usage across the county. This section outlines key findings and takeaways from these data collection, analyses, and interviews.

Key Findings About Broadband Needs and Gaps in Washington County

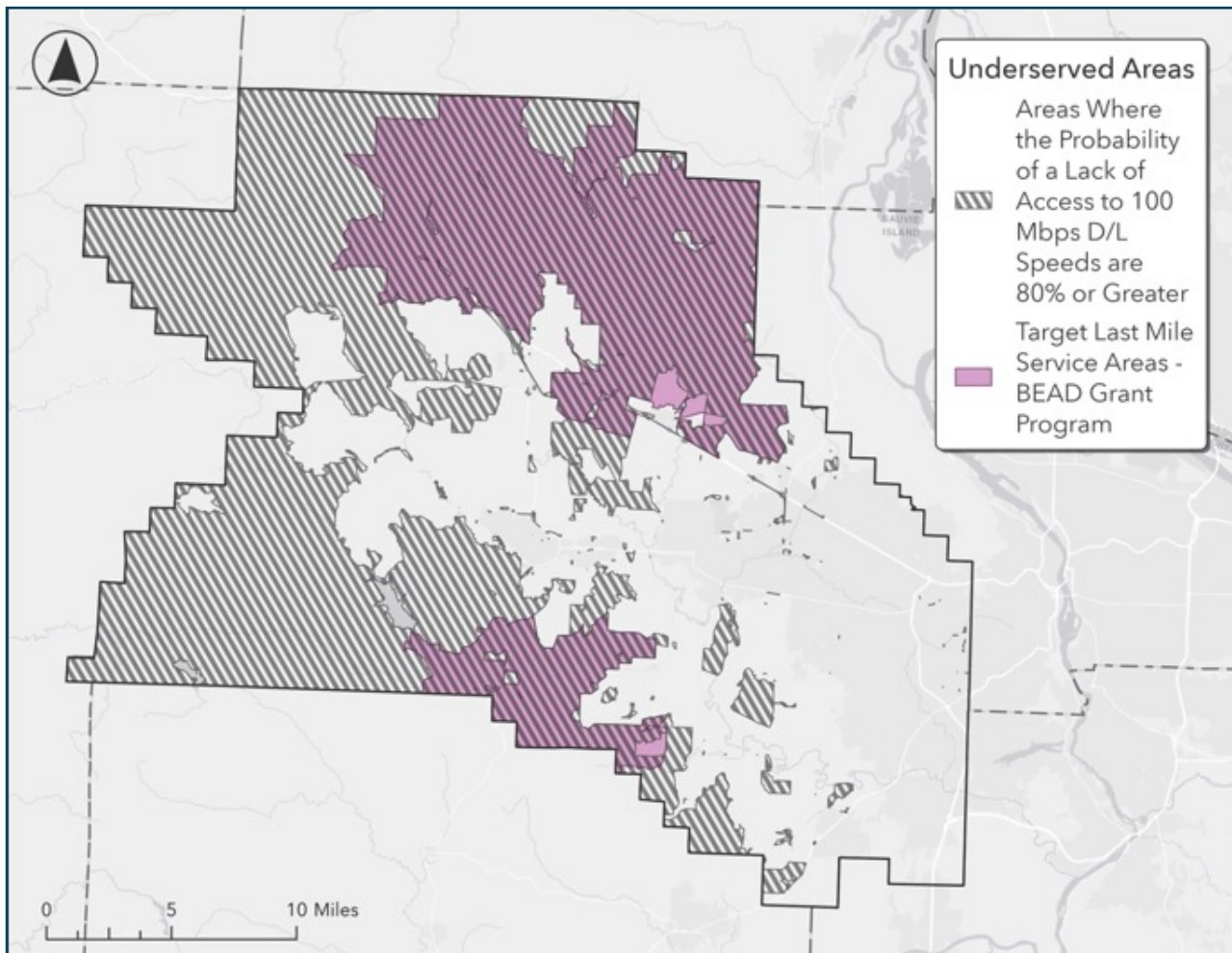
Infrastructure

- **The federal grant programs currently available to support broadband projects are primarily focused on broadband infrastructure.** Eligibility for these programs is generally limited to areas without sufficient broadband service, defined as at least 100 megabits per second (Mbps) download / 20 Mbps upload speeds (see [Section 5](#) of this report).
- **The majority of urbanized Washington County would not be eligible for federal broadband grant funding** as these areas, per FCC regulations and federal legislation, are considered served with one or more wireline broadband providers offering a minimum of 100Mbps/20Mbps Internet connections.
- **This project identified Target Last-Mile Service Areas that would likely be eligible for federal broadband grant programs and should be the focus of Washington County’s broadband infrastructure planning.** Large portions of rural western Washington County lack the infrastructure to provide sufficient broadband service and would meet the federal definition for lack of access. Using Federal Communications Commission (FCC) 477 data, M-Lab test data, and market research, the Consultant Team identified target underserved areas, referred to as “Target Last-Mile Service Areas” (See [Exhibit 1](#)):⁸
 - **BANKS/NORTH PLAINS** represents a contiguous area north of Highway 26 and excluding the city limits of both Banks and North Plains
 - **GASTON** represents a contiguous area surrounding but not including the city of Gaston proper.

⁸ Uptown Analysis, 2022. See Appendix A.



EXHIBIT 1. WASHINGTON COUNTY UNDERSERVED AREAS AND TARGET LAST-MILE SERVICE AREAS



- **Low demand in the Target Last-Mile Service areas creates financial feasibility issues for build out of broadband infrastructure in these areas.** In the two rural areas, only around 20 percent of respondents indicated they would be willing to pay \$60 per month for a 1 Gigabits per second (Gbps) internet offering. A penetration rate in this range is not likely to generate sufficient ongoing cash flow streams, even with grant funding subsidization, to achieve financial self-sufficiency for a last-mile infrastructure project.⁹
- **Infrastructure build-out is critical to meeting the broadband goals for western Washington County jurisdictions.** Nearly all of the jurisdictions interviewed for this project cited the need for expanded broadband infrastructure (see [Appendix E](#)). Expansion of broadband infrastructure would serve these jurisdictions' interests around:
 - supporting economic development goals
 - supporting schools by replacing outdated infrastructure
 - serving new housing developments with quality internet
 - providing better internet access to underserved residents including seniors, low-income households, migrant households, and people in rural areas

**INFRASTRUCTURE
BUILD-OUT
is critical to meeting
the broadband
goals for western
Washington County
jurisdictions.**

Infrastructure expansion is particularly important to provide service for rural areas in and around Banks, North Plains, Cornelius, and Gaston.

⁹ Broadband Assessment Survey 2022, See Appendix B.

Affordability

Broadband service affordability is an issue for a significant number of households across the County. While wireline Internet subscription levels are high, some households are ‘undersubscribing’ to due affordability constraints. This marketplace gap will likely intensify as more households need additional Internet capacity over time but cannot afford higher monthly fees.

- **Lack of affordability is the primary reason households cited for not having internet.** Out of the possible reasons for not having internet at home, 66 percent of survey responses said it was due to internet being too expensive.¹⁰
- **Lower-income households are significantly less likely to have in-home internet access than higher-income households.** Only 67 percent of Washington County households earning below \$25,000 annually have in-home internet access, compared to 93 percent of those earning \$120,000 or more.¹¹
- **Average monthly internet costs are significantly higher than what some households can afford.** Survey respondents in Washington County households, across all income levels, are spending up to \$100 per month on internet, with an average spending of \$71 per month. Households in Gaston spend an average of \$57 per month on internet. Similarly, households in Banks and North Plains spend an average of \$59 per month. CBOs reported a great need for lower prices, around \$10-\$30 per month, and/or increased subsidies for lower-income households.¹²
- **Households are ‘undersubscribing’ to save money.** Even in areas of the county that have higher-capacity access, higher speed tiers are expensive (> \$100/month) and lead to households “undersubscribing” to lower capacity internet tiers to save money. Undersubscription is even more predominant in rural areas, with up to 70 percent of households stating they undersubscribe. Within rural areas that have lower access, demand-side factors are limiting the adoption and use of higher-capacity internet at this time. Programs addressing subsidy participation, awareness, and training may be key to improved broadband utilization.¹³
- **There is a lack of awareness of broadband subsidy programs.** The Consultant Team estimates that 10-15 percent of Washington County households qualify for affordable connectivity program (ACP).¹⁴ However, fewer than 1 in 5 households across these areas stated knowledge of income-based subsidies offered by their internet providers. This lack of awareness is highest among non-white households and households with lower education attainment.
- **Subsidies requiring personal information and credit histories can be a barrier to nondocumented residents,** just as requiring bank accounts can be a barrier to those who do not have one.

Access

- **Households in rural areas experience significantly lower download and upload speeds than average for Washington County households** (see Exhibit 2).

EXHIBIT 2. AVERAGE AND MEDIAN DOWNLOAD AND UPLOAD SPEEDS BY SAMPLE AREA

Uptown Services, LLC. Broadband Assessment Survey, 2022

Survey Area	Average Download	Average Upload	Median Download	Median Upload
Washington County	210M	106M	119M	24M
Gaston Sample Area ¹⁵	127M	55M	110M	15M
Banks/North Plains Sample Area ¹⁶	123M	25M	112M	15M

10, 12, 13 Broadband Assessment Survey 2022, See Appendix B.

11 ECONorthwest analysis of Public Use Microdata Sample (PUMS) data. See Appendix C.

14 Estimation is based on federal income eligibility limits combined with survey responses. See Appendix B.

15 The Gaston Sample Area represents a contiguous area surrounding but not including the city of Gaston proper.

16 The Banks/North Plains Sample Area represents a contiguous area north of Hwy 26 and excluding the city limits of both Banks and North Plains.



- **Device distribution is critical to ensuring broadband access for certain communities.** Interviews with jurisdiction staff and community organizations expressed the importance and success of device distribution during the pandemic. These programs allowed lower-income households, students, and senior residents to have continued broadband access after the closing of many key institutions such as public libraries and community centers.
- **School districts and CBOs have played a large role in the distribution of devices throughout the last two years** to help close the device access gap (e.g., chromebooks, hotspots, iPads).
- **Interviews illustrated concerns about the capacity of the devices distributed through giveaway programs,** particularly data storage and upload/download speeds. As some interviewees noted, because devices like Chromebooks have limited local storage capacity, they often rely on access to cloud storage (such as Google Drive/Google Docs), and therefore can put additional pressures on the internet subscription of households. Hotspot programs, designed to help mitigate these pressures, come with their own limitations of poor quality of service and inefficiency (e.g., student inability to have their Zoom camera on).
- **Subscriptions associated with addresses can be a barrier for houseless families** or those who move often.

Digital Equity Issues for Specific Populations

Households in Washington County enjoy higher levels of internet connectivity than the state as a whole. However, households from rural, lower-income, and non-Hispanic Black, Indigenous, People of Color (BIPOC) communities in Washington County face barriers to broadband access.

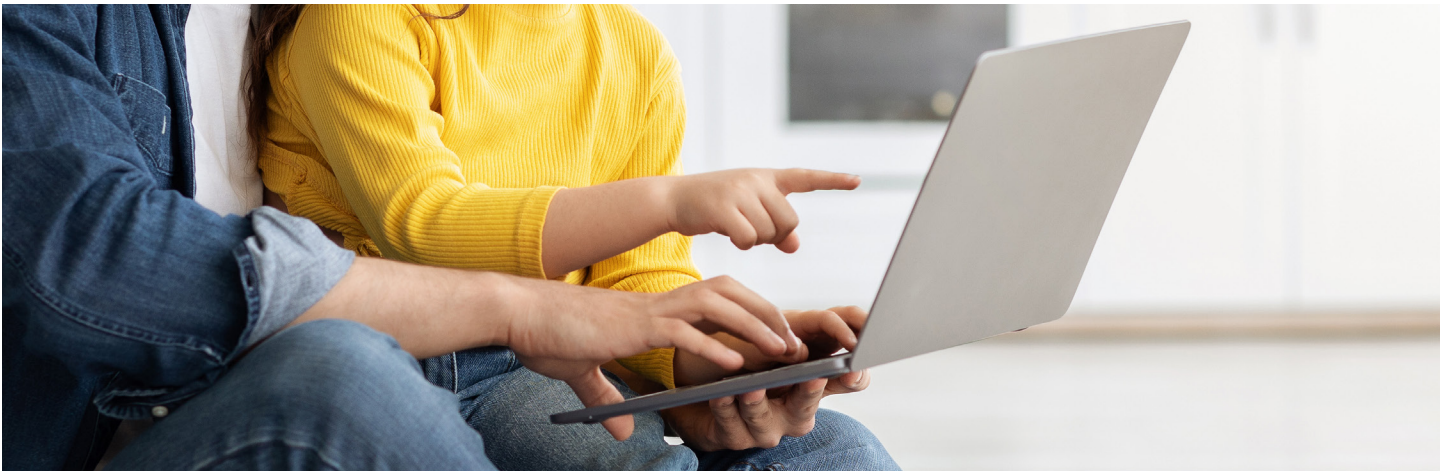
- **Interviews with community organizations highlighted the unique experiences and barriers specific to certain communities.** Community organizations highlighted disparities in broadband and internet access, largely for households who already face various forms of marginalization due to other identities or life circumstances. These specific communities include, but are not limited to, low-income households, housing-insecure or populations who frequently move housing, households speaking languages other than English (limited English proficiency), recent arrivals/immigrants, seniors, and small business owners. Lacking access to internet often furthers these communities' marginalization by preventing or diminishing their access to and/or quality of service and participation. Highlights of some specific issues faced by these community members are described below:
 - **HOUSING INSTABILITY** can create situations where people have to move often to chase affordable housing. In speaking to school staff, students who are houseless or living in a car or doubled up often have difficulty accessing internet.
 - **A LACK OF DIGITAL SKILLS** limits many people's ability to both set up and then use internet services. Seniors often lack these skills and though youth have more familiarity with using social media apps, other digital skills may be missing, especially if their parents are not able to teach these skills.
 - **LIMITED ENGLISH PROFICIENCY:** Interviewees highlighted barriers for non-English-speaking households, as language barriers can reduce access to broadband services as well as digital literacy and support. For instance, English-only subscription applications are often inaccessible to non-English speakers.
- **The Consultant Team conducted an analysis of Public Use Microdata Samples (PUMS) from the Census Bureau's American Community Survey to identify key demographic variables associated with lack of access and a high degree of intersectionality among these variables.**¹⁷ The five variables most highly correlated to lack of internet access were:

¹⁷ ECONorthwest analyzed Public Use Microdata (PUMS), which provides in-depth information about characteristics of individual households, allowing the study of relationships between internet availability and various racial and economic variables. The full analysis is available in Appendix C.



- **HOUSEHOLD INCOME.** Lower income households are much less likely to have internet access. Over 93 percent of Washington County’s highest income group (\$120,000 and above) enjoy in-home internet access, compared to 67 percent of the lowest income group (below \$25,000).
- **RACE/ETHNICITY:** Communities of color have disproportionately low levels of internet access. Households with the lowest rates of internet access are those with heads of households who identify as Black (20 percent), Hispanic (25 percent), and American Indian/Alaskan Native (45 percent), compared to non-Hispanic white (14 percent), Asian (11 percent), and multi-race (13 percent).
- **AGE OF HOUSEHOLD:** Older residents tend to have less access to the internet, especially when combined with income. The PUMS analysis found that 35 percent of households headed by householders 65 and older with incomes less than \$50,000 lacked internet access, compared to just 18 percent of households with householders in the 18-to-24-year-old age group.
- **HOUSEHOLDS WITH CHILDREN & INTERGENERATIONAL HOUSEHOLDS:** In middle-income households (\$50,000 to \$75,000), non-Asian BIPOC households with children were nearly twice as likely to lack internet access (33 percent) compared to their counterparts without children (17 percent).
- **HOUSEHOLDS IN MULTIFAMILY STRUCTURES:** Households living in multifamily structures were less likely to have internet access (20-27 percent) than households living in single-family homes (10-12 percent).

The County needs a MULTI-FACETED POLICY APPROACH to target infrastructure in rural western Washington County and focus on solutions to other digital equity issues in urbanized Washington County.



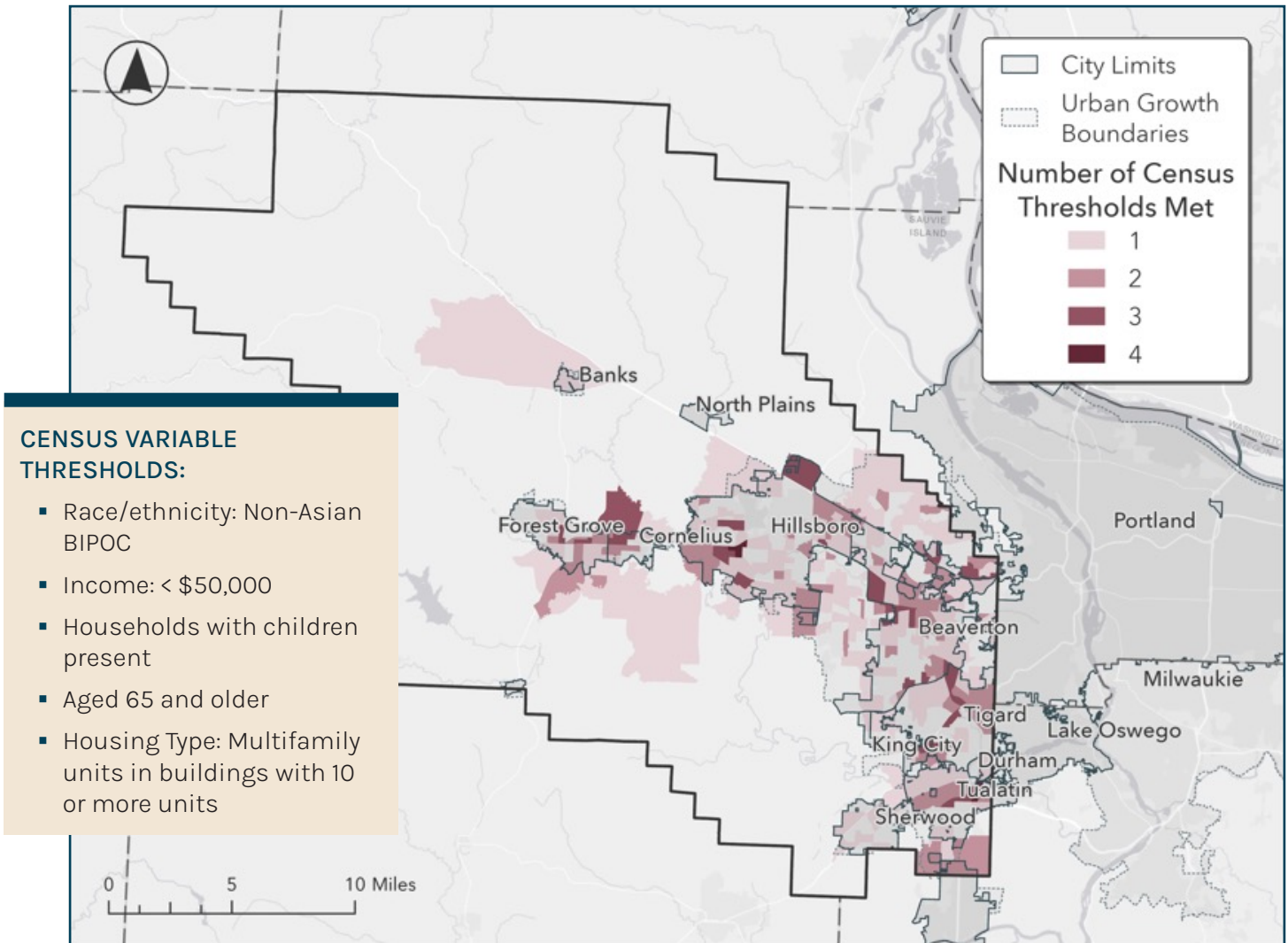
We used these findings to develop a composite demographics map to help identify potential areas to target investment efforts ([Exhibit 3](#)). The darker areas on the map have higher shares of multiple variables correlated with low internet access (see Appendix C for methodology on identifying census variable thresholds). In other words, [Exhibit 3](#) shows areas with higher shares of people who are less likely to have internet access. The County could use this map to identify areas to target programmatic support.

As shown in [Exhibit 3](#), the areas with greatest need for broadband support based on demographics have little overlap with the areas with the greatest need based on lack of infrastructure (shown in [Exhibit 1](#)). These findings, combined with feedback from community organizations, suggest that the reasons these populations lack internet access have little to do with infrastructure and more because of affordability, a lack of devices or digital skills, or other access issues. The implications for broadband policy development are clear: the County needs a multi-faceted policy approach to target infrastructure in rural western Washington County and focus on solutions to other digital equity issues in urbanized Washington County.



EXHIBIT 3. COMPOSITE MAP OF DEMOGRAPHIC VARIABLES MOST HIGHLY CORRELATED WITH LACK OF BROADBAND ACCESS

Source: ECONorthwest Analysis of PUMS data, US Census Bureau, American Community Survey Five-year Estimates, 2016-2020



CENSUS VARIABLE THRESHOLDS:

- Race/ethnicity: Non-Asian BIPOC
- Income: < \$50,000
- Households with children present
- Aged 65 and older
- Housing Type: Multifamily units in buildings with 10 or more units

Digital Skills for Community Members

- **There is demand for programs that increase device access and digital literacy for communities in need.** Many of those who work at CBOs suggested program ideas that linked services together, including access, training, and devices as well as other services people need such as school, healthcare, or housing services to provide culturally relevant resources. Greater translation resources for non-English speakers and added intergenerational programs for senior populations are also shared from our interviews with CBOs.
- **Community organizations have limited capacity to focus on broadband issues and welcome County support.** Capacity building through additional County support is another shared desire by CBOs. Most of the organizations we spoke with felt that their staff were already overburdened with other priorities and constraints and would welcome support from the County. Immediate support for community members and organizations participating is important to prevent burn out. There is also a desire for the County to play a larger role, especially as CBOs and schools did not feel they had as much capacity to take on more projects. However, working in partnership with the schools, libraries or other anchor or community organizations could offer support to students and households in need of greater broadband access.



Public Support for Municipal Broadband

- **Survey respondents indicated a high degree of interest in municipally-owned broadband.** As observed from the Broadband Assessment survey (See [Appendix B](#)), within greater Washington County, when given the choice of provider, receiving high speed Internet from “my local government” is the top choice. Just under one third (30 percent) of all respondents would prefer to receive high speed Internet from “a community-owned local agency.” However, this share increases to 49 percent among respondents that would “definitely” subscribe. In comparison, within the two other survey sample areas (Gaston and Banks/North Plains), the current two private ISP incumbents are the top provider choices. That said, 66 percent of all respondents would prefer to receive high speed Internet from “a community-owned local agency,” and this share increases to 39/49 percent among respondents who would “definitely” subscribe.
- **Both CBOs and city staff also cited a growing interest in broadband as utility.** Due to school, health, and government services being largely accessed online, internet access has risen to a basic need for many. A community-owned broadband could therefore democratize internet access and equitably increase access to the social, cultural, and economic benefits of broadband.

Education and Resource Needs for Jurisdictional Partners

City staff in Washington County jurisdictions cited a range of information needs that would help them increase broadband access in their city.

- **City staff need information to share with City Councils on the importance of broadband,** and the benefits of broadband access and digital skills training, to help bolster it as a policy priority.
- **City agencies need a better understanding of the specific broadband needs and barriers for members of their communities.** More community engagement is necessary to assess cities’ specific community needs.
- **Cities need more information on available funding opportunities** to expand infrastructure and internet access, increase redundancy in their connectivity, expand their broadband access/affordability, and meet their future development needs.
- **City agencies would benefit from and would utilize model policies and programs.** City staff cited the need for resources such as example policies that prioritize connectivity in residential development and model curriculum to help educate community members, especially seniors, on digital literacy skills and fraud prevention.





3. Cross-Jurisdictional Partnership Framework

The interviews we conducted with Washington County jurisdictions identified cities' existing broadband investments, approaches, and attitudes toward the priority of broadband in relation to other public services, and any specific efforts being used to engage with or gather information from underrepresented populations about broadband.¹⁸

These findings helped establish key areas of overlap between county, city, and community values, and areas of critical need specific to each city. Based on this feedback, there are many ways Washington County can help these jurisdictions advance their broadband access and infrastructure goals:

Policies

- Developing model policies that prioritize connectivity in residential development.

Education

- Sharing information and providing education regarding digital skills training.
- Sharing key city-specific outcomes and information from the broadband assessment survey.
- Providing educational materials for City Councils on benefits of broadband access and investment opportunities.
- Creating a model curriculum to help educate community on digital literacy skills and fraud prevention.
- Sharing further education and developing model examples around strategic plan strategies for public broadband access.

Funding

- Connecting jurisdictions with funding opportunities to increase expand infrastructure and internet access, increase redundancy in their connectivity, expand their broadband access/affordability, and meet their future development needs.

Engagement

- Coordinating engagement between jurisdictions to extend broadband infrastructure and access to those outside of city limits in order to further build redundancy (especially coordination between Hillsboro and neighboring jurisdictions).
- Helping cities coordinate future community outreach and engagement.
- Helping cities coordinate ongoing partnerships with CBOs and other jurisdictions to address their broadband needs.

The interviews also served to help us identify partners throughout the county and develop a partnership framework for advancing regional broadband goals and equitable broadband access for residents throughout the County.

¹⁸ See Appendix E for a full summary of interviews with Washington County jurisdictions.

PARTNER SUMMARY for Broadband Investment

CATEGORIES OF PARTNERS

This chart lists the categories of partners identified by Washington County jurisdictions and identifies potential roles they might play in supporting local broadband goals.

CATEGORY	PARTNERS	ROLES
INSTITUTIONAL PARTNERS		
Education Service Districts	<ul style="list-style-type: none"> McKinney-Vento Program (Banks School District) Local School Districts Portland Community College Pacific University Oregon State University 	<ul style="list-style-type: none"> Research Participation/capacity-building for city projects Outreach and engagement related to digital inclusion Information Sharing Workforce/digital skills training
Libraries	<ul style="list-style-type: none"> Local Libraries 	<ul style="list-style-type: none"> Coordinate engagement Offer digital skills trainings Share information and educational materials on broadband access
Healthcare Institutions	<ul style="list-style-type: none"> Long-term care facilities Medical office / Healthcare providers Senior Center 	<ul style="list-style-type: none"> Coordinate engagement
GOVERNMENT / COMMUNITY PARTNERS		
Economic Development Organizations	<ul style="list-style-type: none"> Micro Enterprise Services of Oregon (MESO) Organization Columbia Pacific Economic Development District (Col-Pac) Impact Program (Chamber) Chamber of Commerce 	<ul style="list-style-type: none"> Coordinate engagement Collaborate on long-term planning for local and regional projects Identify needs, resources, partners, and potential users
Community Non-profits and Anchor Institutions	<ul style="list-style-type: none"> Adelante Mujeres Organization Muslim Educational Trust Community Action Organization Local Churches / Faith-based Organizations Central Cultural Organization Just Compassion Organization Willamette Water Supply Knights of Pythias City Club King City Civic Association & Foundation 	<ul style="list-style-type: none"> Coordinate engagement Information Sharing Connect with communities most need of greater broadband access Distribute Devices Provide digital skills trainings Collaborate on planning for local and regional projects Encourage community participation
Governments	<ul style="list-style-type: none"> Sherwood and Hillsboro Adjacent jurisdictions Fire Department Washington County Clean Water Services Youth Action Council HOA Highland HOA Edgewater City Departments 	<ul style="list-style-type: none"> Participate in planning and implementation Develop plans to scale successful projects Coordinate engagement Connect to funding sources Facilitate coordination and broadband implementation Provide funding
PRIVATE SECTOR PARTNERS		
Private Sector Partners	<ul style="list-style-type: none"> Core businesses like Nike and Intel Internet Service Providers Equipment/ Hardware Vendors Manufacturing Businesses Video Production Companies Food Processing Companies Agriculture Businesses Data Centers Other Large Businesses Informal Network 	<ul style="list-style-type: none"> Cost-saving programs Coordinate broadband expansion Infrastructure expertise and facilities

The categorization of this table aligns with National Telecommunications and Information Administration (NTIA's) "Categories of Partners" from their "Using Partnership to Power a Smart City: A Toolkit for Local Communities" 2016 report, page 6.



4. Infrastructure Opportunities

The Role of Middle-Mile Infrastructure

While last-mile infrastructure is typically the focus of access to broadband connectivity, middle-mile infrastructure enables last-mile networks by carrying end-user data traffic onto the greater Internet. In other words, without middle-mile infrastructure, last-mile broadband infrastructure cannot provide Internet connectivity. Accordingly, the performance of last-mile infrastructure and internet connectivity at the household and business level relies upon the availability, capacity, resiliency, and cost efficiency of middle-mile fiber. The importance and value of middle-mile fiber infrastructure in achieving meaningful improvements in digital equity and access within the County include:

- Providing necessary backhaul capacity to serve last-mile broadband networks proximate to the middle-mile fiber route.
- Ensuring that middle-mile fibers are available to multiple last-mile internet service providers via “open access” policies.
- Implementing “on/off ramps” for last-mile fiber to connect to the middle-mile backbone. In many cases, middle-mile routes are implemented as “long-haul” routes that express through rural areas without access points available for interconnection onto a last-mile network.
- Providing physical and logical redundancy to minimize internet outages.
- Improving the economics of last-mile infrastructure investment by lowering transport fees paid by last-mile internet service providers by increasing competition and transport options available to them.

Proposed Middle-Mile Route

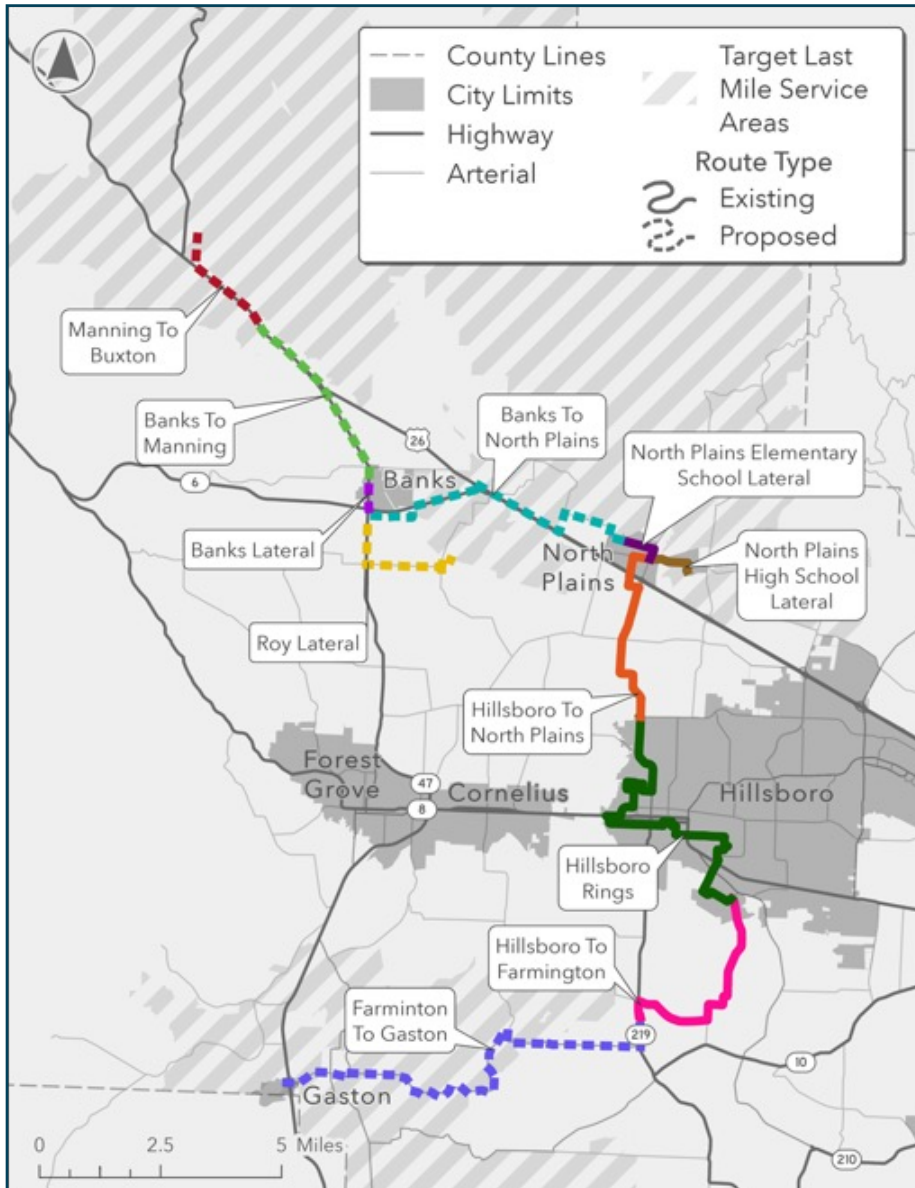
To address the County’s major infrastructure deficiencies and allow the region to tap into funding sources for last-mile investments, the Consultant Team developed a proposed Middle-Mile route ([Exhibit 4](#)).¹⁹

The existing middle-mile network (Hillsboro’s network) extends north to North Plains and south to Farmington Road. Building off of this network would provide middle-mile services to potential last-mile service providers in underserved areas. Last-mile service providers could tie into the middle-mile network where required, allowing them to provide service to the Target Last-Mile Service areas shown in [Exhibit 4](#).

¹⁹ The Consultant Team was unable to identify existing middle-mile fiber along the proposed route.

EXHIBIT 4. PROPOSED MIDDLE-MILE ROUTES AND TARGET LAST-MILE SERVICE AREAS

Source: Uptown Services Analysis, 2023



HILLSBORO NETWORK EXPANSION:

- Build from North Plains to Banks
- Extend to Manning, Roy, and Buxton
- Build from Farmington to Gaston

Funding Considerations

It would be possible to fund middle-mile infrastructure by grant dollars if the middle-mile infrastructure is built as part of a last-mile infrastructure project that will bring 100 Mbps to an un- or underserved area (See BEAD Program description in [Section 5](#) of this report for more information). The rationale for including middle-mile in the grant application would be that the last-mile build area would need to the new middle-mile infrastructure to enable the ISP to serve the new last-mile area with enough capacity and economic efficiency.

Even if middle- and last-mile infrastructure were to be subsidized by grant funding, low demand will affect financial feasibility regardless of the funding model. Recruiting Internet Service Providers (ISPs) into the Target Last-Mile Service Areas will be challenging. If grant funded, a lower penetration rate, around 20 percent, may be financially feasible but local partners would still likely need to bring significant funding to the table.

Cost Estimates

The total outside plant construction cost estimate for the proposed middle-mile route is approximately \$3.6 million dollars. If the project were to receive grant funding, the Consultant Team estimates that a 25 percent local match by the grant recipient, totaling just under \$900,000, would be required for most grants. Details are shown per route segment in [Exhibit 5](#) below.

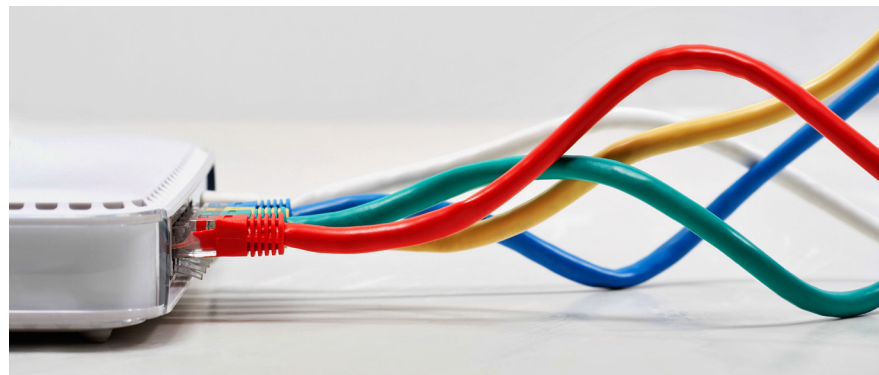
EXHIBIT 5. MIDDLE-MILE OUTSIDE PLANT CONSTRUCTION COST ESTIMATES

Source: Uptown Estimates, 2023

New Middle Mile Routes	Total Miles	Construction (Labor and Materials)	Design	Construction Management	Contingency	Total Cost	County Match (25%) ²⁰
Banks Lateral	0.71	\$56,291	\$3,554	\$5,331	\$16,294	\$81,469	\$20,367
Banks to Manning	4.04	\$319,759	\$20,187	\$30,280	\$92,557	\$462,783	\$115,696
Banks to North Plains	6.68	\$636,381	\$33,407	\$50,111	\$179,975	\$899,874	\$224,968
Farmington to Gaston	9.94	\$1,097,630	\$49,721	\$74,581	\$305,483	\$1,527,414	\$381,854
Manning to Buxton	2.27	\$180,118	\$11,371	\$17,057	\$52,136	\$260,682	\$65,171
Roy Lateral	3.00	\$237,394	\$14,987	\$22,480	\$68,715	\$343,576	\$85,894
Total	26.65	\$2,527,573	\$133,226	\$199,840	\$715,160	\$3,575,799	\$893,950

Middle-Mile Partnership Opportunities

Should the County proceed with broadband infrastructure investment, whether middle-mile or last-mile in nature, consideration should be given to establishing an Operating Partnership framework to leverage existing broadband expertise within the county. Both Sherwood and Hillsboro have invested in staffing and broadband supporting systems infrastructure (in addition to deployed fiber infrastructure) that create an opportunity for “public-public” partnership. Especially in the early years of operation, these existing resources could allow the County to outsource certain function to a public sector operator that is proximate to the new infrastructure investment and thereby delay staffing of some functions. As an example, should the County proceed with a middle-mile backbone connecting to the City of Hillsboro’s fiber network (terminating in North Plains), the City of Hillsboro could potentially (and typically under an Interagency Agreement that includes term and compensation) provide operational support and network maintenance for the County without the need for incremental staffing. See [Appendix F](#) for more details.



²⁰ Estimates assume that most grants would require a minimum 25 percent match from the recipient to qualify for a grant.



5. Funding Opportunities

This section summarizes available funding sources that the County and its partners could utilize for planning and build-out of last- and middle-mile infrastructure.

ARPA: State and Local Fiscal Recovery Funds

PROGRAM DESCRIPTION

The American Rescue Plan Act of 2021 (ARPA) is a federal grant program available to public sector entities that includes funds for the construction of broadband infrastructure, along with numerous other programs.

<p>Program Overview</p>	<ul style="list-style-type: none"> ▪ Total program funds of \$350B were allocated to various governmental jurisdictions: <ul style="list-style-type: none"> ▪ States: \$195B ▪ Counties: \$65B ▪ Cities: \$45B ▪ Tribal Governments/Territories/Other Local Government: \$44B ▪ Funds investment in broadband infrastructure (build or upgrade). ▪ Funding starts March 3, 2021. Funds must be “obligated” by December 31, 2024. ▪ Program rules issued by Department of the Treasury with Final Rule effective April 1, 2022.
<p>Eligible Use of Funds</p>	<ul style="list-style-type: none"> ▪ Necessary investment: Service area is eligible if there is an identified need for additional broadband infrastructure investment (e.g., lack of reliable 100M symmetrical speed) using data methods from speed tests, federal or state maps, interviews and surveys. ▪ Minimum level of service: Minimum speed of 100Mbps symmetrical. ▪ Labor standards: Local hiring, prevailing wages, and safety and training standards. ▪ Affordability: Service provider participation in qualifying affordability plan.
<p>Project Prioritization</p>	<ul style="list-style-type: none"> ▪ Priority given to projects that provide last mile connections using wireline technology. ▪ Construction contracts should reflect prevailing wages and robust labor standards. ▪ Project ownership, operation, or affiliation with local governments or cooperatives. ▪ Avoid service areas under existing funding commitments via federal or state grants.



Broadband Equity, Access & Deployment Program

PROGRAM DESCRIPTION

The Broadband Equity, Access, and Deployment Program (BEAD) is a federal grant program that includes funds broadband deployment, mapping, and adoption projects.

<p>Program Overview</p>	<ul style="list-style-type: none"> ▪ \$42.5B in total funding to be allocated at the state level. ▪ Planning and project prioritization through state broadband offices which are tasked with developing 5-year action plans. ▪ Program oversight at the state level with federal implementation and support via the National Telecommunication and Information Administration (NTIA). ▪ The 50 US states and territories are eligible grantees that can award BEAD grant funds to ‘subgrantees’ including coops, 3P partnerships, PUDs, and private firms, local governments, etc.
<p>Eligible Use of Funds</p>	<ul style="list-style-type: none"> ▪ Last mile infrastructure projects must target un- or underserved areas where 80% or more of households do not have access to a minimum of 100Mbps/20Mbps. ▪ State broadband offices are expected to begin accepting applications during the first half of 2023.
<p>Project Prioritization</p>	<ul style="list-style-type: none"> ▪ While up to each state, we expect alignment with ARPA rules for determining eligible service areas. ▪ Funding recipients will be required to collect and maintain data to help the NTIA assess the programs’ impact, evaluate targets, promote accountability and coordinate with other federal and state programs. ▪ Criteria to assess grant recipients’ plans to ensure that service providers maintain or exceed thresholds for reliability, quality of service, sustainability, upgradability and other required service characteristics. ▪ Criteria to ensure that funding is deployed in a way that maximizes the creation of “good paying” jobs.



ReConnect Program

PROGRAM DESCRIPTION

The ReConnect Program provides loans, grants, and loan/grant combinations to bring high speed Internet to rural areas, including infrastructure projects.

<p>Program Overview</p>	<ul style="list-style-type: none"> ▪ The program is funded through funding rounds with Round 4 closing on November 2, 2022. ▪ Program oversight at the U.S. Department of Agriculture (USDA). Round 4 funds up to: <ul style="list-style-type: none"> ▪ \$150M in loans ▪ \$300M in loan/grant combinations ▪ \$700M in grants ▪ Eligible grantees include both public and private sector entities.
<p>Eligible Use of Funds</p>	<ul style="list-style-type: none"> ▪ Eligible service areas must be both a) Rural*, and b) 50% or more of households must lack sufficient access to broadband, defined as “fixed terrestrial broadband service at 100 Mbps downstream and 20 Mbps upstream. ▪ For a 100% grant (with no loan), the applicant must demonstrate that at least 90% of homes in the proposed service area do not have sufficient access to broadband. ▪ Program funds can be used for the construction or improvement of facilities capable of delivering 100 Mbps symmetrical service to every premises in the proposed service area at the same time.
<p>Project Prioritization</p>	<ul style="list-style-type: none"> ▪ Awardees will be required to participate in the federal ACP program. ▪ Projects funded by a 100% grant require a 25% match.

* Service areas cannot be located in a city, town, or incorporated area with a population greater than 20,000, or an urbanized area adjacent to a city or town with a population greater than 50,000.



Oregon Broadband Technical Assistance Program

PROGRAM DESCRIPTION

The Oregon Broadband Technical Assistance Program (BTAP) provides grant funds for the development of broadband strategic plans, feasibility studies, business plans, and preliminary engineering for broadband projects targeting unserved or underserved areas.

<p>Program Overview</p>	<ul style="list-style-type: none"> ▪ The program is funded through Oregon Universal Service Fund proceeds. ▪ The 2022-23 grant funding amount is \$1.5M. ▪ Eligible grantees include municipalities, municipal affiliates, electric co-ops, and tribes. Counties are not specifically identities as eligible applicants.
<p>Eligible Use of Funds</p>	<ul style="list-style-type: none"> ▪ The program funds planning efforts to develop or evaluate strategies to serve unserved and underserved areas within the state, including: <ul style="list-style-type: none"> ▪ Strategic Plans ▪ Feasibility Studies ▪ Business Plans ▪ Preliminary Engineering ▪ Grant application costs ▪ The Study Area should emphasize inhabited, unincorporated areas with first priority on unserved locations and second priority on underserved locations.
<p>Project Prioritization</p>	<ul style="list-style-type: none"> ▪ The maximum per grant award amount is \$100,000. ▪ There is no grant match requirement.



Affordable Connectivity Program (ACP)

PROGRAM DESCRIPTION

The Affordable Connectivity Program (ACP) is a newly funded federal program to subsidize Internet service among low-income households to narrow the digital divide.

<p>Program Overview</p>	<ul style="list-style-type: none"> ▪ \$14.2B in total funding. ▪ Qualifying households receive a \$30 monthly benefit towards Internet service. ▪ Connected device reimbursement of \$100 if provider charges between \$10-\$50 for the device. ▪ No set end date. ▪ Participation qualifies the service provider to receive BEAD grant funding.
<p>Eligible Use of Funds</p>	<ul style="list-style-type: none"> ▪ Household income at or below 200% of federal poverty limit (e.g., household size of 3 earning \$44,000 or less). ▪ Participation in national school lunch program. ▪ Participate in the FCC Lifeline program.
<p>Project Prioritization</p>	<ul style="list-style-type: none"> ▪ Eligible Telecommunications Carriers (ETCs) offering residential Internet service. ▪ Requires FCC approval and USAC election notification. ▪ The \$30 discount must be available on all Internet tiers offered by the provider. ▪ No credit check and no disconnects for non-pay until 90 days past due.

The ACP program provides subsidies for subscription and devices and is therefore a readily available option to increase broadband access for low-income households. Survey responses indicate there are a large number of eligible households that are not aware of this program. The Consultant Team estimates that approximately 10 percent of greater County households qualify for ACP, but only 18 percent of households stated their provider offers this discount. In the rural survey areas this gap is even higher, with approximately 15 percent of rural survey area households qualifying, but only 14 percent of households in the Banks/North Plains sample area and 16 percent of households in the Gaston sample area stating that their provider offers this discount. Across all three survey areas, awareness of subsidy-based programs is lower in BIPOC households and households with lower educational attainment.

Potential interest in subsidy programs is high. When the Consultant Team analyzed the ACP-eligible sample of survey respondents, they found that depending on the sample area, between 62-90 percent of ACP-eligible respondents indicated that they would either definitely or probably subscribe to a reduced pricing of \$30 per month. Programs addressing subsidy participation, awareness, and training could be an important piece of Washington County's Broadband Strategy.

The government has committed \$14 billion to the ACP, and there is currently no end date. However, since the program could end once funds are exhausted, subsidy programs should be considered a near-term affordability strategy, ideally implemented alongside longer-term solutions to improve broadband affordability.



6. Broadband Strategy Recommendations

Goals

Based on the findings of the broadband analysis, the Consultant Team identified four core goals that should guide Washington County's broadband investment strategy. These goals are to:

- Remove barriers to broadband deployment
- Promote Infrastructure Development and Funding
- Improve Broadband Access, Affordability, and Digital Inclusion
- Provide Regional Leadership



Recommendations

The Consultant Team identified a range of strategies that could help Washington County and the cities within it meet the four core goals identified above.

Remove Barriers to Broadband Deployment

MODEL PROGRAMS

- **DIG ONCE AND SHADOW CONDUIT.** Dig once policies encourage the placement of fiber conduit whenever a road is dug up or a trench is opened. The County should work to create a model ordinance for a dig once policy for jurisdictions that do not have a dig once policy to consider for adoption.
- **ONE-TOUCH MAKE-READY (OTMR).** “Make-Ready” refers to the inspections, engineering, and rearrangements necessary to accommodate the installation of multiple cables on a utility pole. This process can be time consuming and costly, requiring multiple contractors. The County should work to create a model one-touch make-ready policy that allows for a single contractor to complete the make-ready process and promote this policy for regional adoption.
- **JOINT TRENCH AGREEMENTS/JOINT BUILD AGREEMENTS.** Joint trench agreements allow for the sharing of costs for placement of conduit or fiber amongst multiple entities. The County should create a model

program for making entities aware of joint trenching opportunities and facilitate joint trench/joint build agreements.

- **STREAMLINED PERMITTING.** Create a model permitting process that consolidates the responsibility of approving broadband infrastructure projects with Public Works Departments. Develop methods to streamline the broadband permitting processes within public rights of way and incentivize broadband providers to build more infrastructure as a result of lower permitting costs and shorter permit processing time frames.
- **TEMPLATE LEASE AGREEMENTS.** Create a model lease agreement for leasing out fiber assets. This program could study suitable lease rates and streamline and standardize the asset leasing process. This would benefit smaller jurisdictions in streamlining lease agreement opportunities.

STANDARDIZE LEASE RATES

Lease rates for existing assets can vary broadly for attaching aerial fiber to existing utility assets. The County should work with partner jurisdictions to model and make available lease rates and work to standardize attachment rates to reasonable and consistent fees to reduce the operating expenses of placement of fiber cable.

Promote Infrastructure Development and Funding

INVENTORY ALTERNATIVE FUNDING OPPORTUNITIES

For many communities and projects, funding will be the primary constraint on implementation. The County could maintain a repository of federal, state, and creative funding alternatives including foundations, co-op structures, and local options. The County could research opportunities to leverage existing investments, such as using those investments to meet federal funding local match requirements. The County should assume the role of tracking changes in the funding environment and communicate opportunities to local jurisdictions as appropriate.

ENCOURAGE COMPETITION IN MULTIFAMILY DWELLING STRUCTURES

Encourage local jurisdictions to adopt policies to prohibit property managers of multifamily dwelling units from negotiating exclusive agreements with incumbent internet service providers. This will increase accessibility and competition among ISPs in multifamily structures which our research showed have lower rates of accessibility and affordability.

PROMOTE DEVELOPMENT STANDARDS FOR PLACING CONDUIT IN NEW DEVELOPMENT

Encourage Washington County jurisdictions to adopt land development codes that require all new commercial and residential development to install fiber optic infrastructure.

FUNDING SET-ASIDES

Conduit is relatively cheap, but opening a trench is very expensive. The County should work with local and State partners to establish a funding set-aside or budget process to capitalize on open trench and joint trench opportunities for unanticipated projects for installation of fiber or conduit.

INVEST IN MIDDLE-MILE INFRASTRUCTURE

Invest in middle-mile infrastructure to build out the remaining middle-mile network consistent with proposed middle-mile route outlined in this report. Near- to intermediate-term investments should include:

1. Planning work for proposed route
2. Build from North Plains to Banks
3. Extend to Manning, Roy and Buxton
4. Build from Farmington to Gaston



TARGET LAST MILE INFRASTRUCTURE IN BANKS/NORTH PLAINS AND GASTON

Secure grant funding and develop partnerships with ISPs to build out Target Last-Mile Infrastructure. The County and jurisdictional partners will likely need to bring significant funding to the table for this project, so this strategy should include the development of a funding approach that builds upon funding opportunities identified in this report.

PROVIDE ECONOMIC INCENTIVES

Explore opportunities for economic incentives to assist in broadband infrastructure development. Coordinate with the State Broadband Office to develop new incentives. Consider the role of value-capture mechanisms, development agreements, grant resources, and public-private partnerships as incentives for expanding private broadband deployment and investment.

Improve Broadband Access, Affordability, and Digital Inclusion

BUILD PARTNERSHIP CAPACITY

Work with local CBOs, School Districts, and other organizations to identify funding opportunities, partnerships, and resources to integrate broadband programs and services in their programs.

ACP AWARENESS PROGRAM

Develop a program to increase awareness about and participation in the federal ACP program and other programs to provide broadband access to lower income households.

PARTICIPATE IN STATEWIDE DIGITAL EQUITY PLAN & CONSIDER A COUNTYWIDE DIGITAL EQUITY PLAN

Participate in the development of the ongoing Statewide Digital Equity Plan. Evaluate the need to build on this plan to adapt, refine, and expand statewide strategies and create a countywide Digital Equity Plan.

DEVICES AND DIGITAL SKILLS TRAINING

Work with partners to implement digital skills training, technical assistance, and device distribution programs. The County could choose different approaches to support this effort, including directly providing trainings, collecting and disseminating curriculum to partner organizations and agencies, training CBOs to implement trainings, or partnering with libraries or jurisdictions to implement these programs.

PUBLIC HOTSPOT PROGRAM

Identify opportunities to expand public hotspot resources at anchor institutions, prioritized by neighborhoods identified as being most underserved.

Provide Regional Leadership

LOCAL EDUCATION PROGRAM

Create a program to provide informational resources and have Washington County Economic Development Staff engage with jurisdictional leaders.

REGIONAL COORDINATION

Act as a regional liaison to State and Federal Organizations, including the Oregon Broadband office. Serve as an information clearinghouse for Washington County jurisdictions.

ASSET INVENTORY

Create a process for coordinating with jurisdictions to evaluate structural assets. Identify or create a system for mapping those assets throughout the community.

Recommendations Summary

The section provides some preliminary evaluation criteria for consideration of the recommendations. For the purposes of this report, timeframes for near-term strategies are considered those that could be implemented within one-to-two years, intermediate-term strategies could be implemented in three-to-four years, and long-term strategies could be implemented within five-to-10 years. The impact rating is a preliminary assessment of how impactful the strategies would be in addressing the needs and gaps identified in this report.

Strategy	County Role	Partners	Timeframe	Potential Funding Sources	Impact (five-star scale)
Remove Barriers to Broadband Deployment					
Model Programs	Develop model programs, share information with jurisdictions	Staff at partner jurisdictions	Near term	TBD, County input	★★
Standardize Lease Rates	Develop model programs, share information with jurisdictions	Staff at partner jurisdictions	Near term	TBD, County input	★★
Promote Infrastructure Development and Funding					
Inventory Alternative Funding Opportunities	Lead role	Oregon Broadband Office	Near term (and ongoing)	TBD, County input	★★★
Encourage Competition in Multifamily Dwelling Structures	Develop model programs, share information with jurisdictions	Staff at partner jurisdictions, Developers, Landlords	Near or intermediate term	TBD, County input	★★★
Promote Development Standards for Placing Conduit in New Development	Develop model programs, share information with jurisdictions	Staff at partner jurisdictions, ISPs	Intermediate term	TBD, County input	★★★
Funding Set-asides	County could play a lead role in establishing a fund and special budget process for installation of fiber or conduit	State and local partners	Intermediate term	TBD, County input	★★★
Invest in Middle-Mile Infrastructure	Role is TBD, could include securing or contributing funding, lead or support in planning, coordination with jurisdictions and ISPs, or participating in an operating partnership.	EDA, NTIA, Oregon Broadband Office, Local Partners, Banks, Gaston, North Plains, Hillsboro, Sherwood	Intermediate term	Federal grants, County/local match, BTAP	★★★★★



Strategy	County Role	Partners	Timeframe	Potential Funding Sources	Impact (five-star scale)
Target Last Mile Infrastructure in Banks/ North Plains and Gaston	Role is TBD, could include securing or contributing funding, lead or support in planning, coordination with jurisdictions and ISPs, or participating in an operating partnership.	EDA, NTIA, Oregon Broadband Office, Local Partners, Banks, Gaston, North Plains	Long term	Federal grants, County/local match, BTAP	★★★★★
Provide Economic Incentives	Coordination role	EDA, NTIA, Oregon Broadband Office, Local Partners	Long term	TBD, County input	★★★
Improve Broadband Access, Affordability and Digital Inclusion					
Build Partnership Capacity	Coordination / Convener Role	CBOs	Ongoing	TBD, County input	★★★
ACP Awareness Program	Coordination Role	Local jurisdictions, CBOs	Near term	TBD, County input	★★★★
Digital Equity Plan	Participate in statewide plan; evaluate creation of county-specific plan	Oregon Broadband Office, CBOs, community members, school districts	Statewide Plan- Near Term County Plan- Intermediate Term	TBD, County input, BTAP	★★★★
Devices and Digital Skills Training	Coordination / Convener Role	Local jurisdictions, CBOs, school districts/ ESDs, libraries,	Intermediate to long term	TBD, County input, ARPA	★★★★
Public Hotspot Program	Coordination Role	TBD, anchor institutions, ISPs, jurisdiction partners	Long term	TBD, County input	★★★★
Provide Regional Leadership					
Local Education Program	Lead Role	Local jurisdictions	Ongoing	TBD, County input	★★★
Regional Coordination	Lead Role	TBD	Ongoing	TBD, County input	★★★★
Asset Inventory	Lead Role	Local jurisdictions	Intermediate term	TBD, County input	★★



Next Steps

This report summarizes a broad range of approaches the County could take to improve broadband access, affordability, infrastructure, and digital inclusion throughout Washington County. Some strategies, such as model policies, could benefit all Washington County jurisdictions, while other strategies might be most beneficial to specific jurisdictions, such as last-mile infrastructure build-out. As a next step, the County should meet with each jurisdiction to identify the range of policies, programs, and investments that would have the greatest impact in meeting their goals. The County and partner jurisdictions can then build off of the work included in this report to develop an implementation strategy that targets actions to the geographies where they are most needed. For instance:

- The demographics mapping (Appendix C) may guide Washington County and partner jurisdictions in deciding where to target programmatic efforts to promote digital skills or ACP awareness.
- The partnership framework (Appendix F) could guide the County in developing a middle-mile operating partnership with Hillsboro and Sherwood.
- The Broadband Infrastructure mapping and survey findings (Appendices A and B) can help inform conversations with jurisdictional partners about infrastructure needs and broadband demand in their community.

Concurrently, the County can continue exploring and pursuing the funding opportunities identified in this report to support implementation of the strategies and sharing funding information with partner jurisdictions. Throughout this process, the County should continue engagement and capacity building with the partners identified in Section 3 of this report, especially community-based organizations, libraries, and school districts. Providing on-going support and resources to these community partners will ensure that the County's efforts align with the needs of community members and advance broadband access and digital equity where it is needed most.



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