Five-Year Action Plan

Broadband Equity, Access, and Deployment (BEAD) Program

Oregon Broadband Office

Oregon Business Development Department

State of Oregon

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Contents

1. Executive summary 1
1.1 Vision and objectives 1
1.2 Current state of broadband and digital inclusion 1
1.3 Obstacles or barriers 2
1.4 Implementation plan 2
1.4.1 Priorities 3
1.4.2 Estimated timeline and cost for universal service 3
1.5 Confirmation that this BEAD Five-Year Action Plan meets minimum requirements 3
2. Overview of the Five-Year Action Plan 4
2.1 Vision 4
2.2 Goals and objectives 5
3. Current state of broadband and digital inclusion 7
3.1 Existing programs 9
3.2 Partnerships 18
3.3 Asset inventory 23
3.3.1 Broadband deployment 24
3.3.2 Broadband adoption 27
3.3.3 Broadband affordability 31
3.3.4 Broadband access 37
3.3.5 Digital equity 41
3.4 Needs and gaps assessment 44
3.4.1 Broadband deployment 44
3.4.2 Broadband adoption 45
3.4.3 Broadband affordability 46
3.4.4 Broadband access 46
3.4.5 Digital equity 47
4. Obstacles or barriers 50
4.1 Legislative and regulatory barriers 52
4.2 Labor shortages 52
4.3 Supply chain issues and materials availability 56

4.4 Industry participation 57
4.5 Topography 58
4.6 Affordability 58
4.7 Digital literacy 58
4.8 Procurement and contracting 59
4.9 Natural disasters and infrastructure survivability 59
5. Implementation plan 62
5.1 Stakeholder engagement process 62
5.1.1 Full geographic coverage 63
5.1.2 Meaningful engagement and outreach to diverse stakeholder groups 67
5.1.3 Multiple awareness and participation mechanisms 68
5.1.4 Clear procedures to ensure transparency 69
5.1.5 Outreach and engagement of unserved and underserved communities 69
5.2 Priorities 69
5.3 Planned activities 70
5.4 Key execution strategies 71
5.4.1 Successfully utilizing partnerships to increase broadband adoption 71
5.4.2 Eliminating affordability as a barrier to broadband adoption 71
5.4.3 Streamlining procedures to increase efficiency 72
5.4.4 Supporting workforce development training to enable deployment with high labor standards 72
5.5 Estimated timeline for universal service 72
5.5.1 Mapping of served, unserved, and underserved locations 72
5.5.2 Timeline assumptions 79
5.6 Estimated cost for universal service 79
5.7 Alignment 80
5.8 Technical assistance 82
6. Conclusion 83
Appendix A: Survey instruments 84
Survey instrument 1: Broadband Equity, Access, and Deployment/Digital Equity Needs Assessment 84

Survey instrument 2: Oregon Agency Asset Inventory 91
Survey instrument 3: Community Anchor Institution Broadband Access 96
Survey instrument 4: Internet Service Provider Engagement 102
Survey instrument 5: Digital Equity Program Inventory 106
Survey instrument 6: Covered Populations Broadband Barriers Analysis 117
Survey instrument 7: Oregon Workforce Development Opportunity 123
Appendix B: Stakeholder engagement schedule of sessions 129
Appendix C: Stakeholder engagement schedule of virtual meetings 130
Appendix D: Stakeholder engagement list of participants 131
Stakeholder engagement session 1: Government 131
Stakeholder engagement session 2: ISPs 132
Stakeholder engagement session 3: Workforce development 133
Stakeholder engagement session 4: Community anchor institutions 134
Stakeholder engagement session 5: Public 135
Stakeholder engagement session 6: General sectors 136
Stakeholder engagement session 7: Government (part 2) 138
Appendix E: Flyers and outreach materials 140
Oregon community outreach flyer 140
Residential phone survey flyer 142
Broadband outreach (English & Spanish) 143
Eastern Oregon broadband regional meeting flyer 144
Sample LinkedIn BEAD and Digital Equity outreach 145
Sample Twitter BEAD and Digital Equity outreach 148
General expert representative facilitation session save-the-date 151
General expert representative facilitation session reminder 152
General expert representative facilitation session follow-up 153
ISP expert representative facilitation session save-the-date 154
ISP expert representative facilitation session reminder 155
ISP expert representative facilitation session follow-up 156
Invitation to lived-experience discussion groups 157
Appendix F: ISPs that participate in the ACP 159

Tables

Table 1: Current activities that the Oregon Broadband Office conducts 9
Table 2: Current and planned full-time and part-time employees 15
Table 3: Current and planned contractor support 16
Table 4: Broadband funding 17
Table 5: Partners 18
Table 6: Broadband deployment assets 24
Table 7: Broadband adoption assets 28
Table 8: Broadband affordability assets 32
Table 9: Broadband access assets 38
Table 10: Digital equity assets 41
Table 11: Priorities for broadband deployment and digital inclusion 70
Table 12: Planned activities 70
Table 13: Estimated fiber deployment costs to reach all unserved addresses 79
Table 14: Estimated deployment costs to reach all unserved and underserved addresses 80
Table 15: ISPs participating in the ACP (including no-cost plans and device discounts) 159

Figures

Figure 1: Broadband availability in Oregon 23
Figure 2: Broadband adoption in Oregon 28
Figure 3: Federal broadband subsidy use in Oregon 32
Figure 4: Fiber optic cable producer price index, January 2020 to April 2023 57
Figure 5: Advertisements of in-person meetings 64
Figure 6: Locations in Oregon that have received federal grant funding for future broadband deployment 73
Figure 7: Unserved locations in Oregon 74
Figure 8: Underserved locations in Oregon 75
Figure 9: Served locations in Oregon 76
Figure 10: Unserved locations per median household income 77
Figure 11: Median household income per census tract and unserved locations 78

1. Executive summary

The Oregon Broadband Office[1] (OBO, an entity within the Oregon Business Development Department), the Eligible Entity for purposes of this Five-Year Action Plan, is pleased to present this Broadband Equity, Access, and Deployment (BEAD) Program Five-Year Action Plan, which comprises a comprehensive needs assessment (including the needs of covered populations and underrepresented communities) and establishes Oregon's goal of ensuring universal broadband service availability and increased adoption among the residents, businesses, and institutions of Oregon.

1.1 Vision and objectives

High-speed internet access is a necessity for all Oregonians regardless of their age, race, income, living space, native language, resources available to them, and specific challenges they may face in their daily lives.

The State's primary goals for broadband deployment are aligned with the principal focus of the BEAD program:[2]

1. Connecting 100 percent of unserved locations (i.e., below 25/3 Mbps);
2. Connecting 100 percent of underserved locations (i.e., between 25/3 and 100/20 Mbps); and
3. Delivering gigabit connections to community anchor institutions (CAI) that do not have that level of service.

Although broadband is widely available in Oregon, it is not universally available. This Plan builds on Oregon's world-class telecommunications networks from undersea cables to statewide fiber optic backbone networks.

Oregon Revised Statutes (ORS) 285A.166 created the Oregon Broadband Office (OBO) to "[a]dvocate for the adoption of public policies that close the continuing digital divide by removing barriers to and supporting broadband infrastructure deployment."[3]

1.2 Current state of broadband and digital inclusion

Oregon is ahead of the U.S. average in internet use. According to the most recent NTIA data (November 2021), 84.1 percent of Oregon residents use internet at home (compared to a national

[1] Oregon Broadband Office, https://www.oregon.gov/biz/programs/oregon_broadband_office/pages/default.aspx.
[2] "NOFO: BEAD Program," NTIA, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf, p. 7.
[3] ORS 285A.166, "Oregon Broadband Office," https://oregon.public.law/statutes/ors_285A.166. See also "Broadband Program Development," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/BroadbandProgramDevelopment.aspx.

average of 75.6 percent).[4] However, across Oregon many residents still face barriers to adoption. These barriers include access to high-speed internet, affordable service and devices, accessible devices and content, as well as digital literacy skills.

OBO looks forward to bridging the digital divide, in part by expanding its partnerships with local governments, nonprofits, internet service providers (ISP), private corporations, state agencies, and tribal entities as it works to allocate, fairly and efficiently, the $689 million that the NTIA has allocated to Oregon under the BEAD program.[5]

"Access to quality internet in 2023 is critical to a community's local economy," Governor Tina Kotek said also acknowledging the positive impact BEAD funding will have on the state. "This substantial investment in Oregon's broadband infrastructure will help to remedy the digital divide in rural, unserved, and underserved communities across the state, ensuring that Oregonians are able to access telehealth, business opportunities, education, and so much more."[6]

"High-speed Internet is essential to our daily lives, but too many communities across our state lack access to reliable, affordable, high speed broadband speeds. We're changing that," emphasized Sophorn Cheang, Director, Business Oregon.[7]

1.3 Obstacles or barriers

Oregon faces unique obstacles and barriers to broadband deployment caused by its impressive topography. As described in greater detail in Section 4, Oregon faces natural disaster challenges from coastal hazards and tsunamis, droughts, earthquakes, extreme heat, floods, landslides, volcanos, wildfires, windstorms, and winter storms. Although state and local entities have created plans—especially for handling wildfire risks—there is a possibility that natural disaster and emergency events will affect the timelines in this Plan, even as broadband networks help any affected communities recover.

1.4 Implementation plan

This Plan presents the state's estimated costs, timeline, and strategies for achieving universal service—along with strategies related to remedying inequities in digital inclusion (see Section 5).

[4] "Digital Nation Data Explorer: Internet Use at Home," NTIA, November 2021 data, https://ntia.gov/other-publication/2022/digital-nation-data-explorer.
[5] "Biden-Harris Administration Announces State Allocations for $42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda," NTIA Press Release, June 26, 2023, https://ntia.gov/press-release/2023/biden-harris-administration-announces-state-allocations-4245-billion-high-speed; "Oregon to Receive $689 Million for Broadband Infrastructure," State of Oregon, June 26, 2023, https://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=166749.
[6] "Oregon to Receive $689 Million for Broadband Infrastructure," State of Oregon, June 26, 2023, https://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=166749.
[7] "Oregon to Receive $689 Million for Broadband Infrastructure," State of Oregon, June 26, 2023, https://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=166749.

1.4.1 Priorities

OBO staff have actively worked to build trusting relationships with stakeholders and the public through longstanding collaboration and advocacy. OBO's comprehensive stakeholder engagement is described in Section 5.1. OBO has kept stakeholders informed about the BEAD program as information became available, and outreach and engagement is ongoing.

1.4.2 Estimated timeline and cost for universal service

NTIA allocated $688,914,932.17 to Oregon under the BEAD program to help close the broadband gap in the state. Oregon projects, however, it cannot achieve universal service with BEAD program funding alone. Oregon estimates that current funding, subject to assumptions described in Section 5, will deliver broadband to most but not all of the unserved and underserved addresses in Oregon.

Oregon will adhere to the timeline requirements of the BEAD program. Construction will take longer where larger-scale deployment is needed, where geography is challenging, or where Oregon's unique topography, geography, and history require extra care and permitting.

1.5 Confirmation that this BEAD Five-Year Action Plan meets minimum requirements

This Five-Year Action Plan meets minimum requirements as outlined in the NOFO and summarized in Section 7.1 of the NTIA's "Five-Year Action Plan: Guidance" document:

Requirement	Section in this Plan
1. Details of existing broadband program of office within the Eligible Entity	Section 3
2. Funding the Eligible Entity has available	Section 3.1
3. Existing efforts funded by the federal government	Section 3.1
4. Employees and contract support	Section 3.1
5. Obstacles or barriers	Section 4
6. Asset inventories	Section 3.3
7. Description of external engagement process	Section 3 Section 5.1
8. Broadband availability and adoption data	Section 3 Section 5
9. Broadband service needs and gaps	Section 3 Section 5
10. Comprehensive, high-level plan, including timeline and cost for universal service	Section 5
11. Digital equity and inclusion needs, goals, and implementation strategies	Section 3 Section 5
12. Alignment of the Plan with other efforts and priorities	Section 5
13. Technical assistance and capacity needed for successful implementation	Section 5.8

2. Overview of the Five-Year Action Plan

This Five-Year Action Plan establishes Oregon's broadband goals and priorities—and presents a high-level needs assessment that will inform the state's Initial Proposal.

2.1 Vision

High-speed internet access is a necessity for all Oregonians regardless of their age, race, income, living space, native language, resources available to them, and specific challenges they may face in their daily lives.

The State's primary goals for broadband deployment are aligned with the principal focus of the BEAD program:[8]

1. Connecting 100 percent of unserved locations (i.e., below 25/3 Mbps);
2. Connecting 100 percent of underserved locations (i.e., between 25/3 and 100/20 Mbps); and
3. Delivering gigabit connections to community anchor institutions (CAI) that do not have that level of service.

Although broadband is widely available in Oregon, it is not universally available. This Plan builds on Oregon's world-class telecommunications networks from undersea cables to statewide fiber optic backbone networks.

To achieve that vision, the Oregon Broadband Office (OBO, the Eligible Entity for purposes of this Five-Year Action Plan), will develop and run grant programs that effectively distribute funds under the Broadband Equity, Access, & Deployment (BEAD) and Digital Equity (DE) programs.[9] OBO is developing rules, adding staff, and conducing the outreach, data collection, and analysis needed to develop and execute an implementation strategy.

This Plan presents the path forward for Oregon—starting with a comprehensive engagement and needs assessment effort across the state.

[8] "NOFO: BEAD Program," NTIA, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf, p. 7.
[9] "2022-2023 Oregon Broadband Office (OBO) Priorities," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/2021-22_Oregon_Broadband_Office_Priorities.aspx.

2.2 Goals and objectives

Oregon Revised Statutes (ORS) 285A.166 created the Oregon Broadband Office (OBO) to "[a]dvocate for the adoption of public policies that close the continuing digital divide by removing barriers to and supporting broadband infrastructure deployment."[10]

The State's primary goals for broadband deployment are aligned with the principal focus of the BEAD program:[11]

4. Serving 100 percent of unserved locations (i.e., below 25/3 Mbps);
5. Serving 100 percent of underserved locations (i.e., between 25/3 and 100/20); and
6. Delivering gigabit connections to community anchor institutions (CAI) that do not have that level of service.

In support of these primary objectives, OBO's establishing statute sets forth the following objectives for Oregon:[12]

1. Advocate for the adoption of public policies that close the continuing digital divide by removing barriers to and supporting broadband infrastructure deployment;
2. Develop broadband investment and deployment strategies for unserved and underserved areas;
3. Promote private sector, public sector, and cooperative broadband solutions;
4. Support and promote local and regional broadband planning;
5. Promote technology and service provider neutrality by focusing on desired outcomes rather than specific technological solutions;
6. Pursue and leverage federal sources of broadband funding to achieve state goals related to broadband;
7. Manage and award funds allocated to the Oregon Business Development Department for use by the office for broadband projects;
8. Engage with diverse groups of stakeholders representing a wide variety of interests, including but not limited to elected officials, government officials, healthcare providers, educators, business leaders, agricultural leaders, community leaders, and broadband

[10] ORS 285A.166, "Oregon Broadband Office," https://oregon.public.law/statutes/ors_285A.166. See also "Broadband Program Development," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/BroadbandProgramDevelopment.aspx.
[11] "NOFO: BEAD Program," NTIA, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf, p. 7.
[12] These objectives are also listed in HB 2173, pending before the Legislature as of the writing of this Plan. See: House Bill 2173, https://olis.oregonlegislature.gov/liz/2019R1/Downloads/MeasureDocument/HB2173.

service providers, to facilitate communications and collect information necessary to help make a business case for broadband investments;

9. Promote digital literacy, equity and inclusion;
10. Generate public awareness of the value of broadband technologies and applications;
11. Promote adoption and utilization of broadband technologies and applications;
12. Develop, maintain and provide public access to:
    a. A statewide broadband map as a platform for data collection to track the availability of broadband services and to measure progress; and
    b. Other information relating to broadband;
13. Convene relevant state and federal agencies and advise the Governor, state agency leadership and the Oregon Congressional Delegation on actions to leverage state government activities to pursue state goals related to broadband; and
14. Support and coordinate efforts with the Oregon Broadband Advisory Council.

3. Current state of broadband and digital inclusion

This section describes the current state of broadband and digital inclusion in Oregon, as documented through rigorous and comprehensive data collection and stakeholder outreach efforts. It begins with an overview of the state's past and current efforts to promote broadband deployment and digital equity; describes the resources and relationships available to the Oregon Broadband Office (OBO, the Eligible Entity); presents detailed asset inventories related to broadband deployment, adoption, affordability, and access, and digital equity; and presents a needs and gaps assessment.

The Oregon Broadband Office (OBO) was established within Business Oregon, the state's economic development agency, by Executive Order 18-31 in December 2018[13] and codified in statute by ORS 285A.166.[14]

Beginning in 2019, OBO completed foundational strategy development and data collection. The office launched a new version of the online Oregon Broadband Map in 2019 and published a Broadband Strategic Plan in 2020 documenting plans to achieve its statutory goals.

In 2020, Business Oregon was allocated $20 million in Coronavirus Aid, Relief, and Economic Security (CARES) Act funds to implement broadband-related pandemic recovery programs. Of that total, $1.61 million was earmarked for school districts, which OBO used to fund 26 projects in coordination with the Oregon Department of Education; projects included mobile hotspot and device distribution, as well as provision of wired home connections and Wi-Fi networks.[15]

An additional $10 million in CARES funds were allocated to The Rural Broadband Capacity Program, which provided grants to support increased broadband capacity for telework, telehealth, and K-12 distance learning applications in unserved and underserved areas in response to the pandemic.[16] The program awarded funding to 33 projects across 24 counties, primarily in rural communities, supporting a diverse range of applicants—including municipalities, tribes, cooperatives, and private ISPs—and network types. Funds were used to deploy fiber-to-the-home, fixed wireless networks, and hybrid fiber/wireless solutions, as well as provide 2,000 hotspots to students, impacting an estimated 12,975 locations.[17]

The remaining funds ($8.39 million) were administered through a direct allocation to Link Oregon—a research and education network (REN) operated by the state and four universities—to

[13] Executive Order 18-31, https://www.oregon.gov/gov/eo/eo_18-31.pdf.
[14] Oregon Statutes, https://oregon.public.law/statutes/ors_285a.166.
[15] "CRF Broadband Closeout Memo," Business Oregon, March 14, 2022, https://www.oregon.gov/biz/programs/RuralBroadbandCapacityProgram/Documents/CRF%20Broadband%20Closeout%20Memo.pdf.
[16] "Rural Broadband Capacity Program," OBO, https://www.oregon.gov/biz/programs/RuralBroadbandCapacityProgram/Pages/default.aspx.
[17] "CRF Broadband Closeout Memo," Business Oregon, March 14, 2022, https://www.oregon.gov/biz/programs/RuralBroadbandCapacityProgram/Documents/CRF%20Broadband%20Closeout%20Memo.pdf.

extend its fiber-based network into eastern and southern Oregon to provide high-speed reliable network services to public and non-profit entities.

In the same year, SB 1603 (2020)[18] established the Oregon Broadband Fund to support further broadband infrastructure deployment and digital equity-related projects. The Public Utilities Commission (PUC) authorized the transfer of $1.5 million into the Fund in 2021.[19]

OBO began developing two grant programs in 2022. The Broadband Technical Assistance Program (BTAP) will be funded by the Oregon Broadband Fund. According to the draft program guidelines, BTAP plans to provide awards of up to $100,000 to assist eligible applicants with developing or evaluating strategies to serve unserved and underserved areas of the state, including strategic planning, conducting feasibility studies or business plans, and preliminary engineering.[20]

The Broadband Deployment Program (BDP) will be funded by the American Rescue Plan Act (ARPA) Capital Projects Fund (CPF). Oregon has elected to use its entire CPF allocation for BDP.[21] (Oregon was allocated $156,795,418;[22] as of June 2023, an award has not yet been announced.[23]) According to the draft program guidelines, BDP will award up to $20 million per applicant to support the construction and deployment of broadband infrastructure that offers reliable 100/100 Mbps broadband service to locations lacking at least 100/20 Mbps reliable service. Eligible providers must participate in the ACP and priority will be given to projects that address affordability and/or target areas with high levels of digital inequity.[24]

OBO released the draft rules and draft program handbooks for both programs for public comment in September and October 2022. The input provided will inform the design of the two programs. Though federal and state funds have not yet been received for these programs, funds are expected in 2023. A notice of proposed rulemaking for broadband programs was filed with the Oregon Secretary of State on March 24, 2023.[25] Adoption of the program rules will allow BTAP and BDP to open for applications. OBO expects to launch BTAP in late 2023 and to open BDP in early 2024,

[18] See, https://olis.oregonlegislature.gov/liz/2020S1/Downloads/MeasureDocument/SB1603.
[19] "Business Oregon Broadband Timeline," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/timeline.aspx.
[20] Per the draft program handbook; see https://www.oregon.gov/biz/Publications/Broadband/Draft_Broadband_Technical_Assistance_Handbook.pdf.
[21] "ARPA Capital Projects Grant Plan," OBO, https://www.oregon.gov/biz/Publications/Broadband/ARPA%20Capital%20Projects%20Grant%20Plan.pdf.
[22] "Coronavirus Capital Projects Fund: Allocations for States, District of Columbia, and Puerto Rico," U.S. Treasury, August 2021, https://home.treasury.gov/system/files/136/Allocations-States.pdf.
[23] "Capital Projects Fund Awards Made to States, Territories, and Freely Associated States, to date," U.S. Treasury, https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/capital-projects-fund/awards-made-to-states-territories-and-freely-associated-states (accessed June 9, 2023).
[24] Per the draft program handbook, subject to 2023 legislation; see, https://www.oregon.gov/biz/Publications/Broadband/Draft_ARPA_CP_BDP_Handbook.pdf.
[25] "2022-23 Oregon Broadband Office (OBO) Priorities," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/2021-22_Oregon_Broadband_Office_Priorities.aspx.

along with a potential second round of BTAP (dependent on the first round's outcomes and availability).[26]

OBO's efforts, including the development of grant programs, are supported by an advisory body, the Oregon Broadband Advisory Council (OBAC).[27] While OBAC was originally created in the 2009 legislative session, HB 4092 (2022)[28] modified the composition and duties of the council in preparation for historical federal broadband investment. Some of the modifications include new representation for rural businesses, urban businesses, telehealth, and digital equity interests of historically disadvantaged communities.

The development of BTAP and BDP was also informed by outreach to a diverse range of stakeholders. In 2022, prior to the BEAD program, OBO engaged a Technical Working Group of industry, tribal, municipal, library, and Oregon Department of Education representatives[29] as well as conducting a series of community listening sessions. Outreach has been a consistent component of OBO's work since its inception, and that outreach is ongoing to support the development of Oregon's BEAD and Digital Equity plans.

3.1 Existing programs

The table below identifies OBO's current and recent activities and programs (including stakeholder engagement conducted for this BEAD Five-Year Action Plan and Oregon's Digital Equity Plan), its previous statewide plans comprising goals for the availability of broadband, and its prior experience awarding broadband deployment grants.

Table 1: Current activities that the Oregon Broadband Office conducts

Activity name	Description	Intended outcome(s)
Oregon Broadband Office Strategic Plan[30]	In 2020, OBO issued a Broadband Strategic Plan documenting its activities and planned programs to meet the state's policy goals.	Establish how OBO will carry out its mission as defined by executive order and statute.

[26] "Broadband Program Development," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/BroadbandProgramDevelopment.aspx.
[27] "Oregon Broadband Advisory Council," Business Oregon, https://www.oregon.gov/biz/aboutus/boards/bac/Pages/default.aspx.
[28] See, https://olis.oregonlegislature.gov/liz/2022R1/Downloads/MeasureDocument/HB4092/Enrolled.
[29] "Broadband Programs Technical Working Group," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/Technical_Working_Group_Meeting_Schedule.aspx.
[30] Oregon Broadband Office Strategic Plan, January 30, 2020, https://www.oregon.gov/biz/Publications/BroadbandStratPlan2020.pdf.

Activity name	Description	Intended outcome(s)
Oregon Broadband Map[31]	OBO maintains an online, interactive map of broadband availability in the state, created in 2009 with a new version launched in 2019.[32] Data layers currently include service providers, broadband technologies, service speeds, service availability as reported to the FCC by providers, population density, and anchor institutions.[33] As noted in Table 4, Oregon has received funding from the U.S. Economic Development Administration. With this funding, and OBO's partnership with Oregon State University, the map will be upgraded to include an application portal, dig once map, and data submission portal.	Measure progress in the availability of broadband and provide public access to these data. The map has several layers of information that will enable OBO to develop and execute this Five-Year Action Plan and the BEAD program, and support Oregon's Digital Equity Plan. New layers added as part of the upgrade include a map of the maximum download speed available, a layer showing locations that lack service, and separate layers for each of the following categories of community anchor institution: community support (government), community support (non-government), library, hospital, fire station, law enforcement, school (K-12), and higher education.
Stakeholder engagement: facilitated sessions	OBO hosted discussions in 2023 with the following six critical groups: local governments, ISPs, organizations that represent and serve covered populations, community anchor institutions, and workforce development entities. Details	Observations and feedback from community outreach will inform the development of OBO's broadband deployment and digital

[31] Oregon Broadband Map, https://geo.maps.arcgis.com/apps/webappviewer/index.html?id=002a3eee6efb48a1868b4494168d730a.
[32] "Business Oregon Broadband Timeline," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/timeline.aspx.
[33] Oregon Broadband Office Strategic Plan, OBO, January 30, 2020, https://www.oregon.gov/biz/Publications/BroadbandStratPlan2020.pdf.

Activity name	Description	Intended outcome(s)
	regarding OBO's comprehensive outreach efforts are in Section 5.1.	equity plans, objectives, and implementation approach.
Stakeholder engagement: follow-up surveys	OBO sent follow-up surveys in 2023 to each group in the above six stakeholder engagements to collect more information about existing assets, programs, and needs.	Feedback from community outreach will inform the development of OBO's broadband deployment and digital equity plans, objectives, and implementation approach.
Residential broadband survey for the State's Digital Equity Plan	OBO conducted a statistically valid survey of residential internet access, adoption, and needs in 2023 as part of the Digital Equity planning process.	Residential broadband survey data will be analyzed and compared to other available data.
Oregon Statewide Broadband Assessment and Best Practices Study[34]	OBO published a statewide broadband study in 2020 presenting findings and insights regarding the current state of broadband in Oregon, drawing from multiple independent data sources.	Identify the state's unserved and underserved areas and the cost to bridge broadband gaps, in order to inform policies and programs to address these gaps and encourage advancement in productive use of broadband technology.
Rural Broadband Capacity Program	Business Oregon was allocated $20 million in CARES Act funds in 2020; $10 million was dedicated to supporting a grant program to provide increased broadband capacity for telework, telehealth, and K-12 distance learning applications in unserved and underserved areas in response to the COVID-19 pandemic.	Awarded contracts to 33 projects across 24 counties[35] in July 2020, including 26 infrastructure construction projects totaling $8,653,582 and seven emergency response projects totaling $1,340,924; funded infrastructure included fiber-to-the-home buildouts, hybrid fiber/wireless systems, construction of

[34] Oregon Statewide Broadband Assessment and Best Practices Study, https://www.oregon.gov/biz/Publications/SNGStudy2020.pdf.

[35] The original completion deadline for CARES Act-funded projects was December 30, 2020. A one-year extension was authorized by the US Congress (H.R. 133); projects were extended on a need and case by case basis.

Activity name	Description	Intended outcome(s)
		several new mobile wireless towers, delivery over 2,000 hotspots for students, and the construction or expansion of several fixed wireless networks.[36]
CARES Act Funding: Schools and Education Allocation	Of the $20 million allocated to Business Oregon to support broadband-related pandemic recovery projects, $1.61 million was set aside for school districts.	Business Oregon selected and allocated funding for 26 projects totaling $1,599,845.25 in coordination with the Oregon Department of Education (ODE)'s Comprehensive Distance Learning Grant Program. Of the 26 projects awarded funding, 23 projects included the deployment of emergency hot spots. Device allocation and distribution, access points, residential wired internet connections, and Wi-Fi network expansion were also funded in 19 counties.[37]
CARES Act Funding: Link Oregon	Business Oregon administered the remaining $8.39 million in its CARES funding allocation to Link Oregon[38] to extend its fiber-based network into eastern and southern Oregon, building on long-haul fiber segments previously acquired but not	Provide high-capacity, reliable network services to public and non-profit entities, including greater network access to dispersed locations and a new interconnectivity location in

[36] "CRF Broadband Closeout Memo," Business Oregon, March 14, 2022, https://www.oregon.gov/biz/programs/RuralBroadbandCapacityProgram/Documents/CRF%20Broadband%20Closeout%20Memo.pdf.
[37] "CRF Broadband Closeout Memo," Business Oregon, March 14, 2022, https://www.oregon.gov/biz/programs/RuralBroadbandCapacityProgram/Documents/CRF%20Broadband%20Closeout%20Memo.pdf
[38] Link Oregon, the service name of the Oregon Fiber Partnership, is a government, research and education network (REN) serving Oregon's public and non-profit sectors. This non-profit organization operates as a consortium of its five founding members: the State of Oregon (through the Enterprise Information Services division) and the four research universities—Oregon State University (OSU), Oregon Health & Science University (OHSU), Portland State University (PSU), and the University of Oregon (UO). See, https://www.linkoregon.org/.

Activity name	Description	Intended outcome(s)
	yet implemented due to lack of funding.	Boise, Idaho that provides greater resiliency. The new network created 400-Gbps connectivity to link Portland, Corvallis, and Eugene and offered improved bandwidth to the University of Oregon and Oregon State University campus networks. Thirty-four network access points and two adjoining states were enabled either fully or partially through this grant.[39]
ARPA CPF: Broadband Deployment Program (BDP)	Currently under review by the U.S. Treasury,[40] this grant program will utilize the state's full allocation of CPF funding to support broadband infrastructure projects that deliver reliable 100/100 Mbps service to locations lacking reliable 100/20 service.	Should Oregon receive its full allocation of CPF funding ($156,795,418), thousands of Oregon households will get access to high-speed internet.[41]
Broadband Technical Assistance Program (BTAP)	Currently in development, this program—supported by the Oregon Broadband Fund—will award grants to assist eligible applicants[42] with strategic planning, conducting feasibility studies or business plans, and preliminary engineering to	Respond meaningfully to stakeholders' requests for broadband technical assistance ahead of the upcoming major federal infrastructure funding opportunities.

[39] "CRF Broadband Closeout Memo," Business Oregon, March 14, 2022, https://www.oregon.gov/biz/programs/RuralBroadbandCapacityProgram/Documents/CRF%20Broadband%20Closeout%20Memo.pdf

[40] For a status tracker of OBO's current programs, see https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/2021-22_Oregon_Broadband_Office_Priorities.aspx.

[41] "Draft Rules for Broadband Programs," OBO, https://www.oregon.gov/biz/Publications/Broadband/Broadband_Rules_Rollout.pdf. OBO is located within Business Oregon, which is the Eligible Entity.

[42] Eligible applicants include municipalities, electric cooperatives, nonprofits, municipal affiliates, and the nine federally recognized tribes in Oregon; private for-profit providers are ineligible but may partner with eligible applicants.

Activity name	Description	Intended outcome(s)
	develop strategies to serve unserved and underserved areas.	
Community Listening Sessions	OBO held five listening sessions in April 2022 focused on individuals with intellectual and developmental disabilities, stakeholders, rural areas, Oregon's nine federally recognized tribes, and the Portland Metro area.[43]	Inform the development of OBO's two forthcoming grant programs, BDP and BTAP.[44]
Broadband in Oregon Reports	The Oregon Broadband Advisory Council has issued a report every two years since 2014 on the state of broadband in Oregon.[45] The latest report was issued in 2020.[46]	Inform the Oregon Legislature on the affordability, accessibility, and use of broadband technology in all areas of the state.
Request for Information	OBO issued a Request for Information on broadband projects in 2021.[47, 48]	Help inform the Oregon Legislature on the next budget. Responses included 78 projects at a total cost of $501 million, with $345 million needed in grants and 32 projects requesting technical assistance.[49]

[43] "Oregon Broadband Community Listening Sessions," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/Oregon_Broadband_Community_Listening_Sessions.aspx.
[44] For a summary of outreach findings, see https://www.oregon.gov/biz/Publications/Broadband/OBO%20Broadband%20Listening%20Sessions%20Summary.pdf.
[45] "Oregon Broadband Advisory Council," OBO, https://www.oregon.gov/biz/aboutus/boards/bac/Pages/default.aspx.
[46] The reports are available here: Local Broadband Champions Report, 2020 Broadband in Oregon Report, 2018 Broadband in Oregon Report, 2016 Rural Broadband Strategies Report, 2016 Broadband in Oregon Report, 2014 Broadband in Oregon Report.
[47] "Business Oregon Broadband Timeline," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/timeline.aspx.
[48] For a list of responses, see https://www.oregon.gov/biz/Publications/2021_RFI_Broadband_Projects%20.xlsxand "Oregon Broadband Office Request for Information: Broadband Technical Assistance Program," OBO, https://www.oregon.gov/biz/Publications/Broadband/BTAP_RFI.pdf.
[49] "Broadband Grant Program Development," OBO, June 1, 2022, https://olis.oregonlegislature.gov/liz/2021I1/Downloads/CommitteeMeetingDocument/255574.

Activity name	Description	Intended outcome(s)
Oregon Tribal Broadband Bootcamp	In 2022, OBO helped organize and contributed funding towards a summit for tribal members around broadband deployment,[50] part of a national series of bootcamps.[51]	Approximately 50 attendees were able to receive training and share resources.

OBO has managed strategic studies, needs assessments, grant programs, public-private partnerships, and other efforts to identify and close Oregon's digital divide. The tables below identify the current and planned full- and part-time employees and contractors who will assist in implementing and administering BEAD-funded activities and programs to achieve OBO's goals and objectives. Although this list is comprehensive as of the writing of this Plan, additional staff, consultants, and technology may be needed to implement Oregon's BEAD Five-Year Action Plan.

Table 2: Current and planned full-time and part-time employees

Current/planned	Full-time/part-time	Position	Description of role
Current[52]	FT	Broadband Office Director	Intergovernmental affairs and policy advisor.
Current	FT	Broadband Manager	Manage planning consultant contracts and day-to-day operations.
Current	FT	GIS Analyst	Oversees data and mapping efforts.
Current	FT	Program Policy Coordinator (OPA4)	Day-to-day project activities to manage the completion of initial and final BEAD project deliverables.
Planned	FT	Project Coordinator (PA3) (two positions)	Support day-to-day project activities to

[50] "Boot camp helps Native tribes expand broadband access," University of Oregon news release, August 10, 2022, https://around.uoregon.edu/content/boot-camp-helps-native-tribes-expand-broadband-access.
[51] Tribal Broadband Bootcamps, https://www.tribalbroadbandbootcamp.com/.
[52] "Contact Us," OBAE, https://www.oregon.gov/biz/programs/oregon_broadband_office/pages/default.aspx.

Current/planned	Full-time/part-time	Position	Description of role
			manage the completion of initial and final BEAD project deliverables.
Current	FT (funded 50% by ARPA Capital Projects)	Accounting Technician (AT3)	Manage payment of invoices for contract and project work related to the completion of initial and final BEAD project deliverables.
Current	FT	Program Policy Coordinator (OPA4)	Day-to-day project activities to manage the digital inclusion project as well as completion of the Digital Equity Plan and creating policies and procedures for the new programs.
Current	FT	Public Affairs Specialist	Day-to-day communication and public relations for program and project activities to support the completion of initial and final BEAD project deliverables.

Table 3: Current and planned contractor support

Current/ planned	Full-time/part-time	Position	Description of role
Current	PT	Broadband consultant firm	Assistance in drafting the Five-Year Action Plan and the Digital Equity Plan, and in

Current/ planned	Full-time/part-time	Position	Description of role
			planning stakeholder outreach and engagement and other tasks.
Current	PT	Community engagement specialists	Assistance with outreach.

The table below identifies OBO's available funding for broadband deployment and other broadband-related activities as of Q1 2023.

Table 4: Broadband funding

Source	Purpose	Total	Expended	Available
U.S. Department of Commerce, U.S. Economic Development Administration	ARPA state planning grant for broadband mapping project.	$500,000	$29,143	$470,857
U.S. Treasury	ARPA Capital Projects Fund for broadband infrastructure and deployment projects.	Total state allocation of $156,795,418 upon approval of grant and program plans. Administrative funds available now $7,839,768.	$50,065	Total allocation, $156,745,353. Administration (5% of total allocation), $7,837,267.65
U.S. Department of Commerce, NTIA	State planning grant for BEAD.	$5,000,000	$36,112	$4,963,888

Source	Purpose	Total	Expended	Available
U.S. Department of Commerce, NTIA	Implementation funds; amount is base allocation for each state and is pending final allocation in June 2023.	$688,914,932.17[53]	$0	$0
U.S. Department of Commerce, NTIA	State planning grant for Digital Equity.	$782,193	$6,303	$775,890
U.S. Department of Commerce, NTIA	Digital Equity Grant for States	TBD	$0	TBD
Oregon Public Utility Commission	Universal Service Fund	$6,500,000	$0	$6,500,000

3.2 Partnerships

The table below identifies OBO's current and potential future partners in the development and implementation of this Five-Year Action Plan. These partners include organizations already engaged in broadband deployment and digital inclusion efforts (e.g., local governments, K-12 schools, higher education, ISPs) and entities OBO has identified as potential future collaborators.

Table 5: Partners

Partners	Description of current or planned role in broadband deployment and adoption
Electric cooperatives	Oregon's electric cooperatives will be able to offer valuable assistance to broadband projects either as providers themselves or potentially as pole owners.
Nonprofits	Oregon's vibrant nonprofit sector can provide important digital equity assets for this Five-Year Action

[53] "Biden-Harris Administration Announces State Allocations for $42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda," NTIA Press Release, June 26, 2023, https://ntia.gov/press-release/2023/biden-harris-administration-announces-state-allocations-4245-billion-high-speed.

Partners	Description of current or planned role in broadband deployment and adoption
	Plan (see Section 3.3.5) and will contribute to the forthcoming State Digital Equity Plan.
Private broadband companies	In many areas of the state, private companies are investing in broadband infrastructure and deployment.
Educational institutions from primary through higher education	Oregon's vibrant educational sector can provide important digital equity assets for this Five-Year Action Plan (see Section 3.3.5) and will assist in the forthcoming State Digital Equity Plan.
Local governments	Local governments will be active partners assisting with aspects of broadband deployment and permitting (for OBO's outreach activities, see Section 5.1).
Tribal governments	Tribal governments will be directly involved in every facet of this Five-Year Action Plan, including permitting, planning, deployment, and digital equity.
Federal government	The federal government will play a crucial role in this Five-Year Action Plan by providing funding and support (see Section 5.8), and by administering the federal permitting process.
Oregon Department of Transportation (ODOT)[54]	ODOT can be a valuable participant in this Five-Year Action Plan as described in Section 3.3. ODOT also plays an important role in permitting.[55]
Oregon Public Utility Commission (PUC)[56]	The PUC is responsible for balancing regulation and competition to encourage innovation in the telecommunications industry.
State Library of Oregon[57]	The State Library will be a partner in digital equity programs.
Education system	In addition to specific entities listed in this table, Oregon's education system at all levels will play several roles in this Five-Year Action Plan: Provider of

[54] ODOT, https://www.oregon.gov/odot/pages/index.aspx.
[55] "Planning & Technical Guidance," ODOT, https://www.oregon.gov/odot/Planning/Pages/default.aspx.
[56] Oregon PUC, https://www.oregon.gov/puc/pages/default.aspx.
[57] State Library of Oregon, https://www.oregon.gov/library/pages/default.aspx.

Partners	Description of current or planned role in broadband deployment and adoption
	digital equity services, community anchor institution customers of new broadband networks, trainers of Oregon's broadband deployment workforce, and more.
Oregon Department of Forestry (ODF)[58]	ODF will play an important role overseeing broadband deployment, particularly in forested areas, including permitting.
Oregon Department of Fish and Wildlife (ODFW)[59]	ODFW can play various role in the Five-Year Action Plan, including assisting with tribal relations[60] and with habitat mitigation.[61]
Oregon Department of Energy (ODOE)[62]	ODOE will play a role in the permitting process for any energy facilities[63] deployed to support broadband infrastructure.
Oregon Department of Environmental Quality (DEQ)[64]	DEQ plays a role in permitting of broadband infrastructure in some areas.
Oregon Water Resources Department[65]	The Oregon Water Resources Department plays a role in permitting of broadband infrastructure in some areas.
Oregon Department of Land Conservation and Development (DLCD)[66]	DLCD will play a role in the siting of any renewable energy resources deployed to support broadband infrastructure.[67]
Oregon Department of State Lands (DSL)[68]	DSL will play a role in permitting for any broadband projects that cross waterways or wetlands.[69]

[58] ODF, https://www.oregon.gov/odf/pages/index.aspx.
[59] ODFW, https://www.dfw.state.or.us/.
[60] "Tribal Relations," ODFW, https://www.dfw.state.or.us/tribal_relations/.
[61] "What is the Fish and Wildlife Habitat Mitigation Policy?" ODFW, https://www.dfw.state.or.us/habitat/mitigation_policy.asp.
[62] ODOE, https://www.oregon.gov/energy/Pages/index.aspx.
[63] "Energy Facility Siting," DOE, https://www.oregon.gov/energy/facilities-safety/facilities/Pages/default.aspx. Some projects may be suitable for broadband deployment.
[64] "Business Resources," DEQ, https://www.oregon.gov/deq/Pages/Business-Resources.aspx.
[65] Oregon Water Resources Department, https://www.oregon.gov/owrd/Pages/index.aspx.
[66] DLCD, https://www.oregon.gov/lcd/About/Pages/About-DLCD.aspx.
[67] "Natural Resources Planning and Renewable Energy Siting," DLCD, https://www.oregon.gov/lcd/NRRE/Pages/Planning-Siting.aspx.
[68] Department of State Lands (DSL), https://www.oregon.gov/dsl/Pages/index.aspx.
[69] "Waterway and Wetland Conservation," DSL, https://www.oregon.gov/dsl/ww/pages/wetlandconservation.aspx.

Partners	Description of current or planned role in broadband deployment and adoption
Oregon Workforce Partnership[70]	The Oregon Workforce Partnership (OWP) is comprised of more than 200 community leaders representing business, education, workforce, and elected officials from Oregon's nine Local Workforce Development areas. These nine areas support locally driven decisions and programs—which could include broadband workforce training and development. Oregon has an integrated one-stop service delivery built on a standardized model to provide a flexible, unified workforce education and training system that consistently exceeds customer expectations.
Oregon Health Authority (OHA)[71]	OHA will play a key role in any telehealth initiatives advanced as part of this Five-Year Action Plan.
Oregon State University Extension: Broadband Connectivity Outreach[72]	Oregon State University Extension county offices provide free, public Wi-Fi access at their locations in 35 counties; and has worked to promote the Affordable Connectivity Program (ACP) in Oregon and to gather data on actual broadband speeds.
League of Oregon Cities[73]	The League is dedicated to helping Oregon city staff and elected leaders serve their cities well and speak with one voice; members will be partners to OBO on a local level.
Broadband Action Teams (BAT)	The BATs can help provide community engagement to support data collection and information about digital equity programs.
Association of Oregon Counties[74]	Organization actively promoting expanded broadband access.
National League of Cities (NLC)[75]	Nonprofit organization actively promoting expanded broadband access nationwide and developing guidance that will be beneficial to members in Oregon.

[70] Oregon Workforce Partnership, https://oregonworkforcepartnership.org/.
[71] OHA, https://www.oregon.gov/oha/pages/index.aspx.
[72] "Broadband Connectivity Outreach," Oregon State Extension, https://extension.oregonstate.edu/broadband.
[73] League of Oregon Cities, https://www.orcities.org/.
[74] Association of Oregon Counties, http://oregoncounties.org/.
[75] NLC, https://www.nlc.org/.

Partners	Description of current or planned role in broadband deployment and adoption
CTIA[76]	Trade association actively promoting expanded mobile broadband access.
Fiber Broadband Association[77]	Trade association actively promoting expanded fiber broadband access.
NTCA–The Rural Broadband Association[78]	Trade association actively promoting expanded broadband access.
Schools, Health, and Libraries Broadband Coalition (SHLB)[79]	Nonprofit organization actively promoting expanded broadband access.
State Educational Technology Directors Association[80]	Nonprofit organization actively promoting expanded broadband access.
Schools, Health, and Libraries Broadband Coalition (SHLB)[81]	Nonprofit organization actively promoting expanded broadband access.
CyberOregon[82]	Organization actively promoting expanded broadband access.
Oregon Telecommunications Association[83]	Nonprofit industry organization actively promoting expanded broadband access.
Oregon Connections Telecommunications, Inc.[84]	Runs the annual Oregon Connections Telecommunications Conference.
Oregon Cable Telecommunications Association (OCTA)[85]	Nonprofit industry organization actively promoting expanded broadband access.
Northwest Telecommunications Association (NWTA)[86]	Nonprofit industry organization actively promoting expanded broadband access.

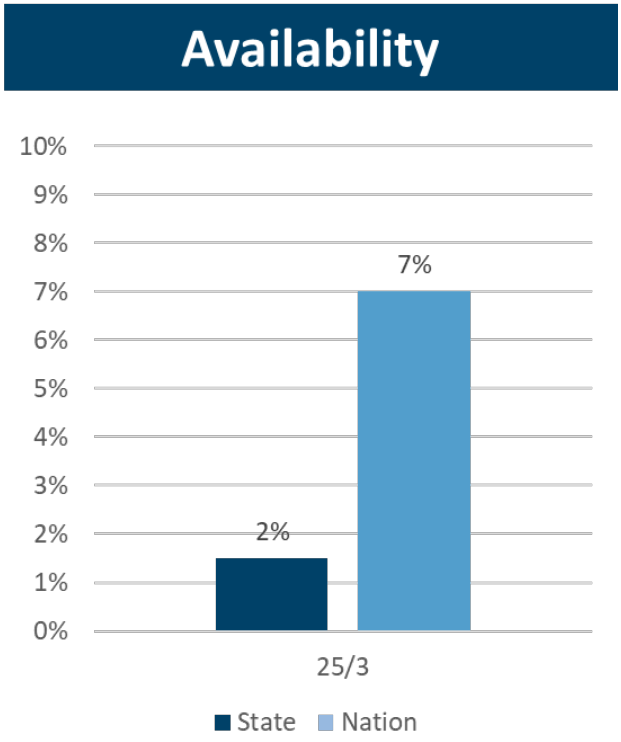
[76] CTIA, https://www.ctia.org/.
[77] Fiber Broadband Association, https://fiberbroadband.org/.
[78] NTCA. https://www.ntca.org/.
[79] SHLB, https://www.shlb.org/.
[80] State Educational Technology Directors Association, https://www.setda.org/.
[81] SHLB, https://www.shlb.org/.
[82] CyberOregon, https://cyberoregon.com/.
[83] Oregon Telecommunications Association, https://www.ota-telecom.org/.
[84] "Contact Us," Oregon Connections Telecommunications Inc, https://oregonconnections.info/contact-directions/.
[85] OCTA, https://www.oregoncable.com/.
[86] NWTA, https://nwta.biz/.

Partners	Description of current or planned role in broadband deployment and adoption
Oregon Farm Bureau[87]	Agricultural organization actively promoting expanded broadband access.
Oregon Rural Electric Cooperative Association (ORECA)[88]	Nonprofit organization actively promoting expanded broadband access.

3.3 Asset inventory

This section catalogs and describes a sample of broadband deployment (infrastructure), broadband adoption, broadband affordability, broadband access, and digital equity activities across the state of Oregon. These inventories comprise agencies that have hard assets, such as utility poles and land, and soft assets such as programs and activities that aim to close the digital divide. These sections are not exhaustive in their scope; rather, they focus on key assets OBO believes can be readily leveraged to implement the Plan. An analysis of assets by covered population will be provided in the forthcoming Digital Equity Plan.

Figure 1: Broadband availability in Oregon



[87] Oregon Farm Bureau, https://oregonfb.org/.
[88] ORECA, https://www.oreca.org/.

3.3.1 Broadband deployment

The table below lists examples of the types of state-owned structures, land, rights-of-way, utility poles, conduit, fiber, and other assets that might be leveraged to implement the Five-Year Action Plan.

Table 6: Broadband deployment assets

Asset name	Description
State-owned fiber	The Oregon Department of Transportation (ODOT) is the primary state agency that owns fiber. ODOT plans to explore partnerships and grant opportunities, some of which could require the provision of open access fiber, but ODOT does not currently offer open access fiber.[89]
Current or forthcoming capital projects, which would allow providers to construct new fiber at lower costs	House Bill 2411, enacted in 2021, requires ODOT to notify telecommunications providers about opportunities to coordinate with ODOT on certain Statewide Transportation Improvement Program (STIP) projects that include the potential to accommodate the installation of underground infrastructure for the provision of broadband services. The bill requires OBO to develop the list of telecommunication providers for ODOT to use to notify the industry about opportunities.[90]
State-owned land	The Oregon Explorer map viewer[91] has data regarding state-owned land such as Public Parks and the Deschutes Land Trust.[92]
State-owned buildings	Buildings owned by state government entities may be available for placement of network electronics or other broadband infrastructure. The Oregon Department of Administrative Services (DAS)[93] Real Estate Service Program,[94] part of the Enterprise Asset Management Division, manages a portfolio of 547 private sector and 99 public sector leases.

[89] "ODOT Broadband Strategy & Implementation Plan," ODOT, June 2022, https://www.oregon.gov/odot/Maintenance/Documents/ODOT-Broadband-Strategy%26ImplementationPlan_FINAL_6-3-22.pdf, p.24.
[90] "ODOT Broadband," ODOT, https://www.oregon.gov/odot/maintenance/pages/broadband.aspx.
[91] Oregon Explorer, https://oregonexplorer.info/. "Map Viewer," Oregon Explorer, https://tools.oregonexplorer.info/OE_HtmlViewer/Index.html?viewer=oe.
[92] "About Us," Deschutes Land Trust, https://www.deschuteslandtrust.org/about-us/
[93] "Agency information," DAS, https://www.oregon.gov/das/Pages/Info.aspx.
[94] "Real estate services," DAS, https://www.oregon.gov/das/Facilities/Pages/ResServ.aspx.

Asset name	Description
State-owned towers	Towers owned by the Oregon Department of Transportation or other state entities may be available for placement of antennas or other broadband infrastructure.
Rights-of-way	The Oregon Department of Transportation plans to include conduit and vaults in future construction projects[95] and has expressed an interest in participating in public-public partnerships as well as public-private partnerships for broadband infrastructure deployment.[96]
Link Oregon middle-mile fiber	Middle-mile fiber will play a critical role in enabling broadband projects funded under this Five-Year Action Plan. Link Oregon is a public-private partnership founded by Enterprise Information Services (EIS)[97] and Oregon's four research universities to acquire existing fiber assets and establish a modern, high-capacity, middle-mile fiber network to serve the needs of Oregon's public and non-profit sectors, including school districts and universities.[98] It is a member of The Quilt,[99] a national coalition of non-profit U.S. regional research and education networks representing 43 networks across the country.[100] This is a public fiber network, though it is not open access. Link Oregon is a federally tax-exempt 501(c)(3) nonprofit.
Oregon geospatial data clearinghouse[101]	The clearinghouse, a joint effort of the Oregon Geospatial Enterprise Office (GEO)[102] and Oregon State University,[103] provides public access to reliable and up-to-date spatial data, which has many uses, including in broadband deployment.

[95] "Project List," ODOT, https://www.oregon.gov/odot/Projects/Pages/default.aspx.
[96] "ODOT Broadband Strategy & Implementation Plan," ODOT, June 2022, https://www.oregon.gov/odot/Maintenance/Documents/ODOT-Broadband-Strategy%26ImplementationPlan_FINAL_6-3-22.pdf, p.8-9, 18, 23.
[97] "Oregon Chief Information Officer," EIS, https://www.oregon.gov/das/OSCIO/Pages/Index.aspx.
[98] Terrence Woods, State Chief Information Officer, "Enterprise Information Services Link Oregon Update," Oregon Legislature, Joint Legislative Committee on Information Management & Technology, March 29, 2023, https://olis.oregonlegislature.gov/liz/2023R1/Downloads/CommitteeMeetingDocument/267112, p.3-4.
[99] "Members," The Quilt, https://www.thequilt.net/about-us/the-quilt-participants/.
[100] "About Us," The Quilt, https://www.thequilt.net/about-us/.
[101] "Oregon geospatial data clearinghouse," Oregon Geospatial Enterprise Office, https://www.oregon.gov/geo/Pages/sdlibrary.aspx.
[102] Oregon Geospatial Enterprise Office, https://www.oregon.gov/geo/Pages/index.aspx.
[103] Oregon State University, https://oregonstate.edu/.

Asset name	Description
Policy favoring undersea cables	The state of Oregon recognizes that Oregon's coast is a prime landing zone for undersea telecommunications cables.[104] "The United States derives significant advantages from its centrality in Asia's subsea cables, which contribute up to $169 billion to the U.S. economy annually and could benefit more U.S. workers and businesses as demand for digital products and services grows globally."[105]
Oregon Fisherman's Cable Committee[106]	Facilitates communication, coordination and cooperation between the fishing industry and the submarine cable industry.
Oregon Department of Transportation (ODOT)	The Oregon Department of Transportation (ODOT) is exploring the use of public-private partnerships to help fund ODOT-initiated fiber projects.[107]
Oregon Joint Use Association (OJUA)[108]	Resources include a map[109] of poles intended as a collaborative tool for communication between Oregon pole owners and attachers as well as extensive utility provider maps showing service territories and inspection areas.[110]
Lane Workforce Partnership[111]	The designated local Workforce Development Board for Lane County, Oregon offers training programs.

In addition to the assets listed above, Oregon is an interconnection center for the United States and the world because of its subsea telecommunications cable landings and the potential availability of green geothermal energy. Portland boasts the Pittock Block building, which hosts a major regional interconnection point for data networks.[112] In addition, the Hillsboro area near Portland

[104] See, e.g., "Oregon Territorial Sea Plan, Part Four: Uses of the Seafloor, Section A: Telecommunication Cables, Pipelines, and Other Utilities," Oregon Coastal Management Program (OCMP), adopted December 1, 2000, https://www.oregon.gov/lcd/OCMP/Documents/otsp_4.pdf.
[105] "Securing Asia's Subsea Network: U.S. Interests and Strategic Options," CSIS, April 5, 2022, https://www.csis.org/analysis/securing-asias-subsea-network-us-interests-and-strategic-options.
[106] Oregon Fishermen's Cable Committee, http://www.ofcc.com/.
[107] "ODOT Broadband Strategy & Implementation Plan," ODOT, June 2022, https://www.oregon.gov/odot/Maintenance/Documents/ODOT-Broadband-Strategy%26ImplementationPlan_FINAL_6-3-22.pdf.
[108] OJUA, https://www.ojua.org/.
[109] "Oregon Utility Mapping Project," OJUA, https://www.ojua.org/oregon-utility-mapping-project/.
[110] "Oregon Utility Provider Maps," OJUA, https://ojua.maps.arcgis.com/home/index.html.
[111] Lane Workforce Partnership, https://www.laneworkforce.org/.
[112] Mary Zhang, "Harrison Street Buys Pittock Block Internet Exchange for $326m," Dgtl Infra, January 5, 2021, https://dgtlinfra.com/harrison-street-buys-pittock-block-internet-exchange/.

is a growing data center market, boasting lower-priced electricity than Silicon Valley or Seattle and in 2022 saw the "most demand of any secondary market."[113]

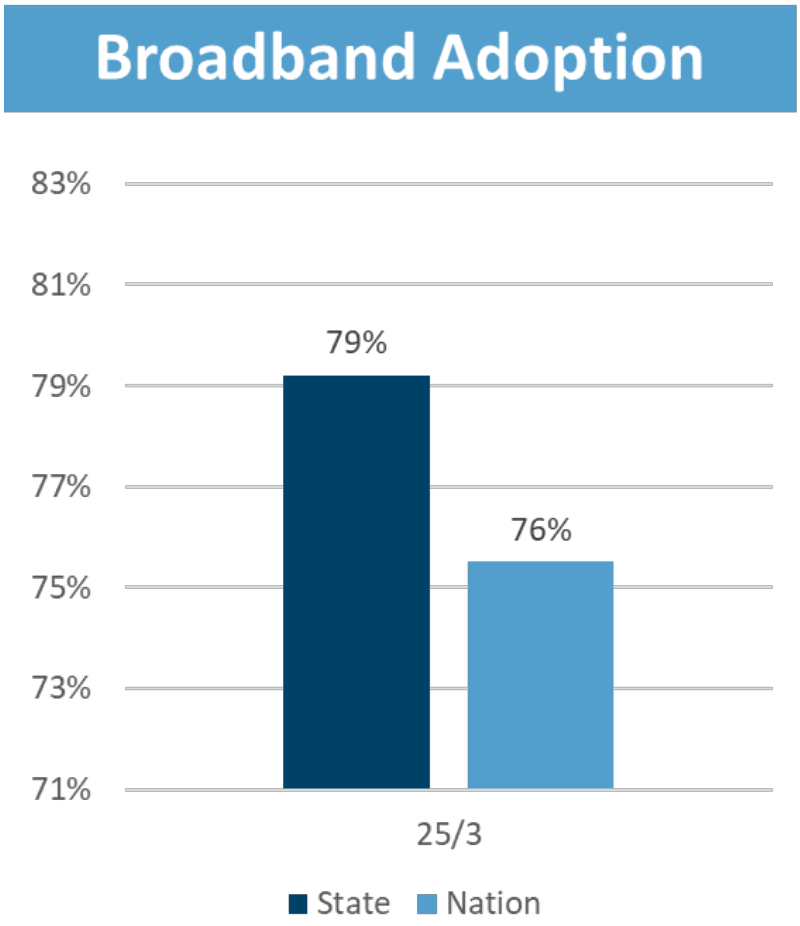
3.3.2 Broadband adoption

This section describes the current state of broadband adoption (i.e., the percentage of residents who have adopted broadband) and identifies broadband adoption assets. Oregon is ahead of the U.S. average in internet use. According to the most recent NTIA data (November 2021), 78.9 percent of Oregon residents have high-speed wired internet access at home (with a margin of error of plus or minus 4.0 percent), compared to a national average of 71.3 percent (with a margin of error of plus or minus 0.5 percent).[114]

[113] *Id.*; "Secondary Market: Hillsboro," CBRE, March 3, 2023, https://www.cbre.com/insights/local-response/north-america-data-center-trends-h2-2022-hillsboro.

[114] "Digital Nation Data Explorer: Wired High-Speed Internet Service Used at Home," NTIA, November 2021, https://ntia.gov/other-publication/2022/digital-nation-data-explorer#sel=wiredHighSpeedAtHome&disp=map. This data set does not provide the percentage of households using wireless or mobile high-speed internet service at home. In Oregon, 4.4 percent use satellite internet service at home (with a margin of error of plus or minus 1.3 percent), compared to a national average of 3.5 percent (with a margin of error of 0.2 percent), according to the data as of November 2021. "Digital Nation Data Explorer: Satellite Internet Service Used at Home," NTIA, November 2021, https://ntia.gov/other-publication/2022/digital-nation-data-explorer#sel=satelliteAtHome&disp=map.

Figure 2: Broadband adoption in Oregon



The table below lists a representative sample of programs that promote broadband adoption—such as through digital literacy and digital skills training, public computing labs, device and hotspot loans, K-12 schools with one-to-one computer programs, computer refurbishing efforts, and other broadband awareness and outreach efforts, including outreach efforts being conducted for Oregon's Digital Equity Plan.

Table 7: Broadband adoption assets

Asset name	Description
Your Home, Your Internet Pilot Program of the FCC	Award of $331,989 to Home Forward,[115] a public housing corporation incorporated by the City of Portland, to provide ACP outreach and application assistance to eligible households.[116]

[115] Home Forward, https://www.homeforward.org/.
[116] "Consumer and Governmental Affairs Bureau and Wireline Competition Bureau announce ACP Pilot Program Grants target funding," FCC, March 15, 2023, https://docs.fcc.gov/public/attachments/DA-23-219A1.pdf.

Asset name	Description
Oregon State University Extension: Broadband Connectivity Outreach[117]	Oregon State University Extension has worked to promote the Affordable Connectivity Program in Oregon and to gather data on actual broadband speeds.
Tillamook County Creamery Association[118]	Partnered with the American Connection Corps (ACC)[119] to raise awareness of affordable broadband in Tillamook County.[120]
U.S. Department of Veterans Affairs (VA) telehealth services[121]	Nationwide and in Oregon, the VA is supporting telehealth services.
VA Digital Divide Consult program[122]	Nationwide and in Oregon, the VA helps veterans who do not have internet service or an internet-connected device get the access they need for telehealth care.
Libraries' mobile technology vans	Some libraries offer mobile library vans that provide Wi-Fi access and additional services. See, for example, the Multnomah County Library's Mobile Library[123] and Jackson County Library Services' DART (Direct Access to Resources and Technology) van.[124]
Multnomah County Library	Has loaned Chromebooks and hotspots and offers digital skills classes.[125]
Deschutes Public Library	Has loaned mobile hotspots.[126]

[117] "OSU Extension Service," Oregon State University, https://extension.oregonstate.edu/broadband.
[118] Tillamook, https://www.tillamook.com/.
[119] American Connection Corps, https://www.americanconnectioncorps.org/.
[120] "Tillamook County Creamery Association Shares Climate Action Plan Updates," Press Release, April 13, 2023, https://www.prnewswire.com/news-releases/tillamook-county-creamery-association-shares-climate-action-plan-updates-301796893.html.
[121] "Welcome to VA Telehealth Services," U.S. Department of Veterans Affairs, https://telehealth.va.gov/.
[122] "Bridging the Digital Divide," U.S. Department of Veterans Affairs, https://telehealth.va.gov/digital-divide.
[123] "The Mobile Library – a branch on wheels," Multnomah County Library, https://multcolib.org/mobile-library-branch-wheels.
[124] "JCLS Announces Mobile Tech Van," JCLS, June 17, 2021, https://jcls.org/2021/06/17/jackson-county-library-services-announces-new-mobile-tech-van/.
[125] "Chromebook and Hotspot lending application," Multnomah County Library, https://multcolib.org/chromebook-and-hotspot-lending-application and Digital literacy | Multnomah County Library (multcolib.io).
[126] Tina Walker Davis, "Leveling the Playing Field: Library Launches Mobile Hotspot Lending Program," Deschutes Public Library blog, November 10, 2021, https://www.deschuteslibrary.org/about/news/news?newsid=18354.

Asset name	Description
Jackson County Library	Offers computer access, lends mobile hotspots, supplies free wireless internet access,[127] and offers technology support in person or online.[128]
Chemeketa Cooperative Regional Library Service	Mobile hotspot lending program made possible through funding from the Institute of Museum and Library Services (CAGML-248046-OMLS-20), and in cooperation with Chemeketa Community College.[129]
City of Tigard	Laptop lending program.[130]
Eugene Public Library	Offers computer use, including adaptive technology options. Supplies free Wi-Fi as well as lending mobile hotspots and laptops.[131]
Oregon City Library	Hosts a public computing lab.[132]
Portland Public Schools	Utilizes a 1:1 take-home computer program for all students.[133]
Free Geek	Free Geek is a nonprofit that operates in Oregon to increase digital inclusion and access through discounted tech programs. These include a computer lending program for K-12 students, hardware grants, an online low-cost tech shop, annual memberships for low-cost tech, business partnerships to fill technology needs, and an open community center.[134] Through the Welcome to Computers program, the organization offers digital skills training to low-income adults in the Portland metro area and provides them with a free computer upon completion of the program.[135]
College Possible Oregon	College Possible Oregon partnered with Free Geek to provide 80 graduating high school seniors in their Navigate program with

[127] "Computers & WiFi," Jackson County Library Services, https://jcls.org/services/computers-wifi/.
[128] "Computer & Tech Help," Jackson County Library, https://jcls.org/resources/computer-tech-help/.
[129] "Hotspot Checkout," City of McMinnville, https://www.mcminnvilleoregon.gov/library/page/hotspot-checkout.
[130] "Borrow a Laptop," City of Tigard, https://www.tigard-or.gov/your-government/departments/library/books-more/library-of-things/borrow-a-laptop.
[131] "Computers and Printing," Eugene Public Library, https://www.eugene-or.gov/1022/Computers-and-printing.
[132] "Public Computers," Oregon City, https://www.orcity.org/library/public-computers.
[133] "PPS 1:1," Portland Public Schools, https://www.pps.net/Page/17529.
[134] "About," Free Geek, https://www.freegeek.org/about.
[135] "Welcome to Computers," Free Geek, https://www.freegeek.org/welcometocomputers.

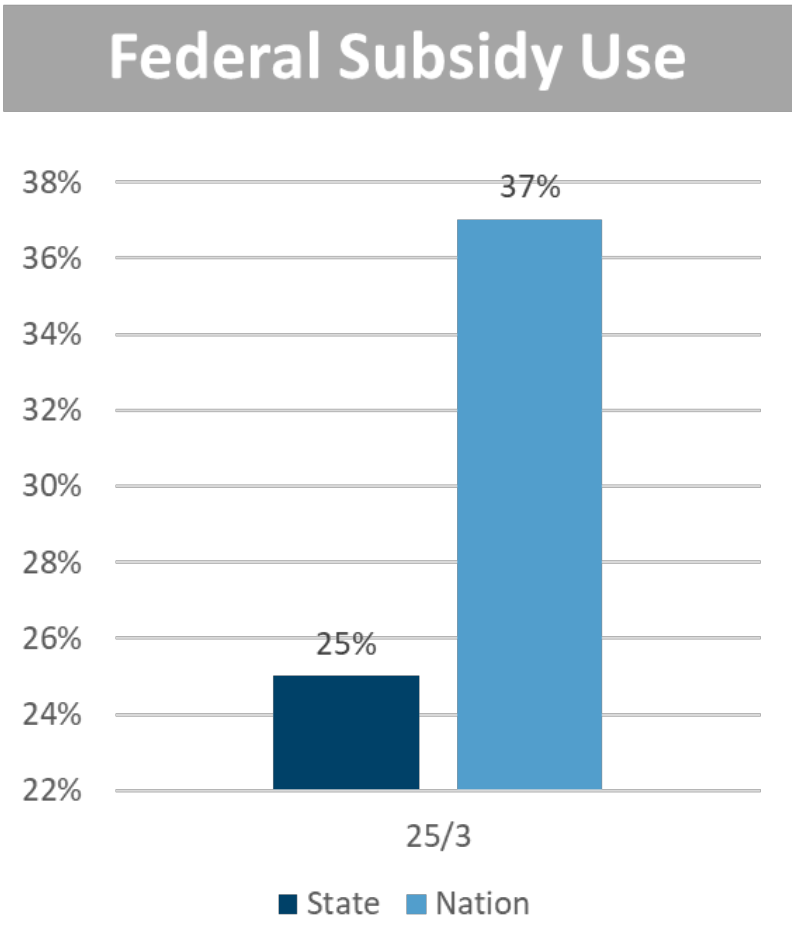
Asset name	Description
	refurbished computers for college and one year of free support from Free Geek. [136]
Hosea Youth Services Resource Center	Provides services, including computer and internet access, to young people ages 16-24 who are experiencing homelessness or otherwise impacted by life on the streets.[137]
Eugene Service Station (ESS)	The ESS day shelter provides adults experiencing homelessness with access to computers and telephones, message services, and job and housing referrals, among other services.[138]
CyberLynx	Provides free computer literacy classes in collaboration with the Bandon Public Library.[139]
YourTechQ	A youth-led nonprofit organization that provides free computer classes to seniors.[140]

3.3.3 Broadband affordability

As of July 2023, 190,362 Oregon households were enrolled in the FCC's Affordable Connectivity Program (ACP).[141] Those households represent about 25 percent of the estimated 719,513 eligible households in the state.[142] Oregon has identified a broad suite of state agencies that can help raise awareness of ACP among eligible Oregonians, including but not limited to the Oregon Department of Human Services (ODHS), Oregon Employment Department (OED), Oregon Department of Education (ODE), and Oregon Health Authority (OHA) in addition to the resources of Business Oregon, the parent agency of OBO.

[136] "Free Geek Donates Computers to Oregon Navigate Graduates," College Possible, July 26, 2021, https://collegepossible.org/news/free-geek-donates-computers/.
[137] "Drop-In Center," Hosea Youth Services, https://www.hoseayouth.org/drop-in-center/.
[138] "Emergency Assistance at the Eugene Service Station," Eugene Service Station. https://www.svdp.us/services/emergency-services/eugene-service-station/.
[139] CyberLynx, https://cyberlynxoregon.org/.
[140] YourTechQ, https://www.yourtechq.org/.
[141] "ACP Enrollment and Claims Tracker," USAC, https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/#enrollment-by-state (accessed July 27, 2023).
[142] "Oregon Bipartisan Infrastructure Law Fact Sheet," White House Briefing Room, as of July 2022, https://www.whitehouse.gov/wp-content/uploads/2022/08/Oregon-BIL-Fact-Sheet.pdf. According to the U.S. Census Bureau, Current Population Survey, 2022 Annual Social and Economic Supplement (CPS ASEC), that figure may be as high as 854,000.

Figure 3: Federal broadband subsidy use in Oregon



The table below identifies a sampling of broadband affordability assets in the state, including ISPs' discounted service and device programs for low-income subscribers. A full list of providers in the state that participate in the ACP is included in Appendix F.

Table 8: Broadband affordability assets

Asset name	Description
OBO broadband service assistance	OBO has been allocated funding to provide assistance to households that have potential internet access yet cannot afford service.[143]
Oregon Lifeline	A federal and state government program that provides a monthly discount on phone or broadband service for qualifying low-income Oregon households. Participants can receive a discount

[143] "Governor's Budget, 2023-2025, State of Oregon," Oregon, https://www.oregon.gov/das/financial/documents/2023-25_gb.pdf, p.116.

Asset name	Description
	on their phone bill of up to $15.25 per month; receive a discount on their broadband bill of up to $19.25 per month; or receive a free cell phone and data service.[144]
Tribal Lifeline & Link Up	Oregon residents on federally recognized tribal lands who meet Oregon Lifeline program requirements (e.g., based on income) may qualify for an additional $25 discount per month on broadband service.[145] The Tribal Link Up program also offers a one-time $100 discount on the initial activation of wireline or wireless service for qualifying residents. Residents may qualify again after they move to a new primary residence. This program also allows residents to pay the remaining amount they owe on a deferred schedule, interest free.
FCC ACP Outreach Grant Program recipients under the National Competitive Outreach Program (NCOP) and Tribal Competitive Outreach Program (TCOP)	Four entities in Oregon were awarded grants: Oregon Institute for A Better Way ($420,000), Josephine County ($209,780), South Central Oregon Economic Development District ($150,000), and the Confederated Tribes of Siletz Indians ($245,000).[146]
Oregon State University Extension Service	Provides ACP outreach, with website in English and Spanish.[147]
Alyrica	ISP that provides service in Oregon and participates in ACP. Cheapest wireless plan is $59.99 per month and cheapest fiber plan is $49.99 per month.[148]
Astound Broadband (Wave Broadband)	ISP that provides service in Oregon[149] and participates in ACP.[150] Wave Broadband's Internet First program, designed to help families and students in low-income households have

[144] "Oregon Lifeline," Oregon Public Utility Commission, https://www.oregon.gov/puc/Pages/Oregon-Lifeline.aspx.
[145] "Tribal Lifeline and Linkup," Oregon Public Utility Commission, https://www.oregon.gov/puc/Pages/Oregon-Lifeline.aspx.
[146] "FCC Announces $66M in Affordable Broadband Outreach Grants," FCC public notice, https://docs.fcc.gov/public/attachments/DA-23-194A1.pdf.
[147] "Affordable Connectivity Program," OSU Extension Service, https://extension.oregonstate.edu/affordable-connectivity-program.
[148] "We have the right internet for you," Alyrica, https://alyrica.net/residential/. "Contact Us," Alyrica, https://alyrica.net/contact/.
[149] "Locations," Astound Broadband, https://www.astound.com/locations/.
[150] "Affordable Connectivity Program," Astound Broadband, https://www.astound.com/acp/.

Asset name	Description
	reliable access to the internet, provides up to 50 Mbps for $9.95 per month.[151]
Beaver Creek Cooperative Telephone Company	ISP that provides service in Oregon and participates in ACP.[152]
Bend Broadband (TDS)	ISP that provides service in Oregon and participates in ACP.[153]
Blue Mountain Networks	ISP that provides service in Oregon and participates in ACP[154] and whose cheapest internet tier is $35 per month.[155]
Cable One (Sparklight)	ISP that provides service in Oregon[156] and participates in ACP.[157]
Cal-Ore Telephone	ISP that provides service in Oregon and participates in ACP.[158] Lowest price available is either $49.95 per month for DSL or $79 per month for fiber.[159]
CenturyLink	ISP that provides service in Oregon[160] and participates in ACP.[161]

[151] "Affordable High Speed Internet Plans for Home," Internet First, https://www.internetfirst.com/. "The Internet First program is affordable Internet designed to help families and students in low-income households have reliable access to the internet. The program offers up to 50 Mbps Internet* to qualifying low-income households in RCN, Grande, and Wave serviceable areas," "Frequently Asked Questions," Internet First, https://www.internetfirst.com/faqs/.
[152] "The Affordable Connectivity Program (ACP)," Beaver Creek Cooperative Telephone Company, https://www.bctelco.com/acp.
[153] "Affordable Connectivity Program - Get Help Paying for Your Internet," TDS, https://hellotds.com/support/account/affordable-connectivity-program.html; Bend Broadband http://www.bendbroadband.com/.
[154] "Please follow the steps below to sign up for the Affordable Connectivity Program (ACP) with Blue Mountain Networks," Blue Mountain Networks, https://bluemountainnet.com/acp/.
[155] "Best Home Internet," Blue Mountain Networks, https://bluemountainnet.com/residential/.
[156] "High-Speed Internet Service Provider in Ontario, OR," Sparklight, https://www.sparklight.com/locations/ontario-or.
[157] "Affordable Connectivity Program," Sparklight, https://www.sparklight.com/acp.
[158] Cal-Ore Telephone Co., https://tele.cot.net/.
[159] "Internet Access," Cal-Ore Telephone Co., https://tele.cot.net/internet-access/.
[160] "Internet Service Provider in Oregon," CenturyLink, https://www.centurylink.com/local/or.
[161] "Affordable Connectivity Program," CenturyLink, https://www.centurylink.com/aboutus/community/community-development/lifeline/acp.html.

Asset name	Description
Charter Communications (d/b/a Spectrum)	ISP that provides service in Oregon[162] and participates in ACP, offering internet at no cost to eligible households.[163] Spectrum Internet Assist offers qualifying low-income customers 30/4 Mbps service for $19.99 per month, or no cost with the ACP subsidy.[164]
Clear Creek Communications	ISP that provides service in Oregon and participates in ACP.[165]
Comcast (d/b/a Xfinity)	ISP that provides service in Oregon[166] and participates in ACP.[167] Households that subscribe to Internet Essentials can pay as little as $25 per month before the ACP discount.[168] Although Comcast does not participate in the ACP device subsidy, new Internet Essentials subscribers may be able to purchase a new Dell laptop or Chromebook for $149.99.[169]
DataVision	ISP that provides service in Oregon and participates in ACP.[170] Least expensive plan Is $59.95 per month.[171]
Douglas Fast Net	ISP that provides service in Oregon and participates in ACP.[172] Least expensive plan is $50 per month.[173]
Emerald Broadband	ISP that provides service in Oregon and participates in ACP.[174] Least expensive plan is $55 per month.[175]

[162] "Find Available Internet, Cable TV, and Phone Services in Oregon," Spectrum, https://www.spectrum.com/services/oregon.
[163] "Spectrum Internet for Low Income Households," Spectrum, https://www.spectrum.com/internet/spectrum-internet-assist.
[164] "Low Income Internet Service | Spectrum Internet Assist Program," Spectrum, https://www.spectrum.com/internet/spectrum-internet-assist.
[165] "General Support FAQ: What is the Affordable Connectivity Program?" Clear Creek Communications, https://www.ccmtc.com/help-center/. "Contact Us," Clear Creek Communications, https://www.ccmtc.com/contact/.
[166] "Comcast Oregon," Comcast, https://oregon.comcast.com/.
[167] "Affordable Connectivity Program," Xfinity, https://www.xfinity.com/learn/internet-service/acp.
[168] "Internet Essentials," Comcast, https://www.xfinity.com/learn/internet-service/acp/free-internet.
[169] Comcast, "Low-Cost Computer," https://internetessentials.com/low-cost-computer.
[170] DataVision, https://datavision-internet.com/; "DataVision is proud to be participating in two government financial assistance programs," DataVision, https://datavision-internet.com/financialassistance/.
[171] "Packages," DataVision, https://datavision-internet.com/residential/internet/.
[172] "Financial Assistance Program," Douglas Fast Net, https://dfn.net/residential/financial-assistance-program/.
[173] "Packages," Douglas Fast Net, https://dfn.net/residential/internet/.
[174] "Affordable Connectivity Program," Emerald Broadband, https://www.emeraldbroadband.com/acp.
[175] "Connections," Emerald Broadband, https://www.emeraldbroadband.com/.

Asset name	Description
Hunter Communications	ISP that provides service in Oregon and participates in ACP.[176] Least expensive plan is $59.99 per month, whether for fiber or wireless.[177]
Lumen (CenturyLink, Quantum Fiber)[178]	ISP that provides a no-cost broadband plan (ACP Internet) for subscribers who enroll in the ACP.
Lumen	ISP that provides a new no-cost broadband plan (ACP Internet) where High Speed Internet is provided by CenturyLink or Quantum.
MINET	ISP that provides service in Oregon and participates in ACP.[179] Least expensive plan is $59.99 per month.[180]
Monitor Telecom	ISP that provides service in Oregon and participates in ACP.[181] Least expensive plan is $69.95 per month without telephone.[182]
Monroe Telephone Company	ISP that provides service in Oregon and participates in ACP.[183] Least expensive plans are $69.96 per month for fiber and $44.95 per month for DSL.[184]
PEAK Internet	ISP that provides service in Oregon and participates in ACP.[185]
Pioneer	ISP[186] that provides service in Oregon and participates in ACP.[187]
Rally Networks	ISP that provides service in Oregon and participates in ACP.[188]

[176] "Affordable Connectivity Program," Hunter Communications, https://hunterfiber.com/residential/acp/.
[177] "Internet," Hunter Communications, https://hunterfiber.com/residential/internet/.
[178] "Lumen Launches ACP Internet Program," Lumen, June 21, 2023, https://fiberbroadband.org/2023/06/21/lumen-launches-acp-internet-program/.
[179] "MINET participates in the Affordable Connectivity Program," MINET, May 23, 2022, https://www.minetfiber.com/article/550.
[180] "Fiber Internet, MINET, https://www.minetfiber.com/shop?locale=en.
[181] Monitor Telecom, https://web.monitorcoop.com/.
[182] "Monitor Telecom Rates," Monitor Telecom, https://www.minetfiber.com/shop?locale=en.
[183] Monroe Telephone Company, https://monroetel.com/.
[184] "Internet Service," Monroe Telephone Company, https://monroetel.com/internet-speeds/.
[185] "Affordable Connectivity Program: See If You Qualify," PEAK Internet, https://www.peakinternet.com/financial-assistance/.
[186] "About," Pioneer, https://pioneer.net/about/.
[187] "Financial Assistance Programs," Pioneer, https://pioneer.net/support/#financial-assistance.
[188] "All About ACP," Rally Networks, https://rallynet.us/acp/.

Asset name	Description
Roome Telecommunications	ISP that provides service in Oregon and participates in ACP.[189] Least expensive plans are $45 per month for cable modem and $20.95 per month for DSL.[190]
Rural Telecom, Inc. (RTI Nehalem Telecom)	ISP that provides service in Oregon and participates in ACP.[191]
SandyNet	ISP that provides service in Oregon and participates in ACP.[192] Least expensive plan is $44.95 per month.[193]
SCTC (Stayton Cooperative Telephone Company)	ISP that provides service in Oregon and participates in ACP.[194] Least expensive plan is $69.95 per month.[195]
Wtechlink, Inc (Pendleton Fiber Co.)[196]	ISP that provides service in Oregon at $48.00 per month and participates in ACP.
Ziply Fiber	ISP that provides service in Oregon and participates in ACP. Its ACP Fiber 200 plan offers service at no cost to customers enrolled in the ACP.[197]

3.3.4 Broadband access

The following table identifies examples of public Wi-Fi networks, cellular connectivity (mobile broadband), and open-access middle-mile networks in the state. These assets are available to all covered populations. “Our issue with our hotspot and tablet program is having enough,” one librarian told OBO during the stakeholder outreach conducted for this Five-Year Action Plan.

[189] “Roome Telecommunications Inc Broadband For Less,” Roome Telecommunications, https://roome.com/#:~:text=Affordable%20Connectivity%20Program%20(ACP),up%20to%20%2430%20per%20month.
[190] “Internet Service,” Roome Telecommunications, https://roome.com/internet/.
[191] “Affordable Connectivity Program replaces EBB,” RTI, January 3, 2022, https://www.rtci.net/news/newsdetail/news/2022/01/03/affordable-connectivity-program-replaces-ebb.
[192] “Affordable Connectivity Plan,” SandyNet, https://www.ci.sandy.or.us/sandynet/page/affordable-connectivity-plan.
[193] “Residential Services,” SandyNet, https://www.ci.sandy.or.us/sandynet/page/residential-services.
[194] “Government Assistance Programs,” SCTC, https://sctcweb.com/lifeline-assistance-program/.
[195] “Residential Internet,” SCTC, https://sctcweb.com/internet/residential/.
[196] Pendleton Fiber Co., https://www.pendletonfiber.com/.
[197] “Community Discounts,” Ziply Fiber, https://ziplyfiber.com/internet/community-discounts.

Table 9: Broadband access assets

Asset name	Description
Connecting Oregon Schools Fund	Established in HB 2173 (2019), moneys in the fund are continuously appropriated to the Department of Education for the purpose of providing matching funds for federal moneys received by school districts, education service districts, public charter schools or a consortium that is any combination of school districts, education service districts and public charter schools for the purpose of providing broadband access to eligible education facilities in the state.[198]
Oregon Department of Corrections	Incarcerated individuals can use monitored video call and text message services.[199] Incarcerated individuals have access to legal information through a partnership with the State of Oregon Law Library.[200]
Portland public Wi-Fi	Free public Wi-Fi access is available at approximately 22 Portland locations.[201]
Eduroam Wi-Fi[202]	Teachers and students can access Wi-Fi at participating educational institutions across the state. Community colleges and K-12 schools in Oregon, in collaboration with Link Oregon, are among the participating entities. Eduroam is also available at 35 of Oregon State University's county extension offices and at 13 of OSU's Agricultural Experiment Stations.
Eugene public Wi-Fi	Free public Wi-Fi access is available at over a dozen locations in Eugene.[203]
Sandy public Wi-Fi	Free public Wi-Fi access is offered by SandyNet from 7 AM to 8 PM.[204]

[198] "HB 2173," Oregon Legislature, https://olis.oregonlegislature.gov/liz/2019R1/Downloads/MeasureDocument/HB2173.
[199] "Electronic Communications," Oregon Department of Corrections, https://www.oregon.gov/doc/contact-inmate/pages/electronic-communications.aspx.
[200] Lynne Palombo, "Oregon's innovative approach to prison law libraries improves access, value, security," State of Oregon Law Library Legal Research Blog, December 3, 2019, https://soll.libguides.com/blog/Oregons-new-approach-to-prison-law-libraries-improves-access-value-and-security.
[201] "Find a Park," Portland, https://www.portland.gov/parks/search?f%5B0%5D=amenities%3A167 (this URL filters for Wi-Fi access). See also, "Free Wireless Internet Access," Portland, https://www.portland.gov/parks/wifi.
[202] Eduroam, https://eduroam.org/.
[203] "Public Wi-Fi," Eugene, https://www.eugene-or.gov/1554/Public-Wi-Fi.
[204] "SandyNet Hotspots," Sandy, https://www.ci.sandy.or.us/sandynet/page/sandynet-hotspots.

Asset name	Description
Newport public Wi-Fi	Free public Wi-Fi access is available at approximately eight locations.[205]
Ledding Library, City of Milwaukie	Offers computer and internet access.[206]
Jackson County public Wi-Fi	Offers free public Wi-Fi access at four locations.[207]
Newberg Wi-Fi	Offers free public Wi-Fi.[208]
Lebanon Public Library	Offers free public Wi-Fi.[209]
Lake Oswego Public Library	Offers free public Wi-Fi inside the library and outside within close proximity.[210]
Deschutes Public Library	Offers free public Wi-Fi at several branches of the Deschutes Public Library system.[211]
Lincoln City Outlets Wi-Fi	Offers free public Wi-Fi throughout the large shopping center.[212]
Crook County Library	Offers free public Wi-fi.[213]
West Linn Wi-Fi	Offers free public Wi-Fi at several parks and near the Historic Willamette Main Street Area[214]
West Linn Public Library	Offers computer access and free public Wi-Fi.[215]

[205] "Wi-Fi Information," City of Newport, https://www.newportoregon.gov/dept/adm/wi-fi.asp.
[206] "Using the Library: Computer & Internet Access," City of Milwaukie, https://www.milwaukieoregon.gov/library/computer-internet-access.
[207] "Information Technology: Public WiFi Hotspots," Jackson County, https://jacksoncountyor.org/Departments/Information-Technology/IT-Home.
[208] City of Newberg, "Internet Access through the City of Newberg's Free WiFi," https://www.newbergoregon.gov/informationtechnology/page/internet-access-through-city-newbergs-free-wifi.
[209] "WiFi," Lebanon Public Library, https://www.ci.lebanon.or.us/library/page/wifi.
[210] "Remote Library Services," Lake Oswego Public Library, https://www.ci.oswego.or.us/library/remote-library-services.
[211] "Technology at the Library," Deschutes Public Library, https://www.deschuteslibrary.org/services/technology.
[212] "Lincoln City Outlets Wi-Fi", Lincoln City Outlets, https://lincolncityoutlets.com/wifi/.
[213] "Printers, Computers, and Faxing," Crook County Library, https://www.crooklib.org/library/page/printers-computers-faxing.
[214] "Wi-Fi in Parks," City of West Linn Parks and Recreation, https://westlinnoregon.gov/parksrec/wifi-parks.
[215] "Public Computers and Wi-Fi", West Linn Public Library, https://westlinnoregon.gov/library/public-computers-and-wi-fi.

Asset name	Description
Corvallis public Wi-Fi	Offers free Wi-Fi access in most public areas, including popular destinations like Riverfront Commemorative Park, to support students and visitors.[216]
Corvallis school district	The district extended internet access in south Corvallis and nearby neighborhoods to support students' learning needs. Wi-Fi access available from 7 a.m. to 10 p.m., 7 days a week.[217]
Hillsboro public Wi-Fi	The city offers free internet access in the downtown historic core between 6 a.m. to 9 p.m. every day.[218]
Washington County Cooperative Library Services (WCCLS)	WCCLS offers free wireless internet access at select library locations for users who have a wireless enabled device.[219]
Clackamas Broadband eXchange (CBX)	Clackamas County operates a 360-mile fiber network that serves 97 K-12 schools, 14 libraries, 25 fire stations, three colleges, and 13 state departments. In July 2021, County commissioners allocated ARPA funds to extend broadband access to unserved and underserved areas of the County by making CBX open access and partnering with ISPs to deliver internet service.[220]
Salem Public Library	Salem Public Library is offering free internet access at both library locations. [221]
City of Newberg Library	The library offers free internet access for users who have a Wi-Fi enabled laptop or another wireless device.[222]
Prineville free public Wi-Fi	The Prineville Connected Community Project was launched to help with limited internet access by deploying Wi-Fi access points

[216] "Free Wi-Fi in Corvallis," Wi-Fi map, https://www.wifimap.io/234-united-states/3458-corvallis.
[217] "Wi-Fi Access Locations Expanded," Corvallis school district, https://www.csd509j.net/news/wi-fi-access-locations-expanded/.
[218] "Free Community WiFi Network Launches in Downtown Hillsboro," Hillsboro, https://www.hillsboro-oregon.gov/Home/Components/News/News/7964/.
[219] "WCCLS Wi-Fi," WCCLS, https://www.wccls.org/about/wcclswifi.
[220] "Clackamas County Expanding Access of Broadband Services to County Homes and Businesses," Clackamas County news release, March 17, 2022, https://www.clackamas.us/news/2022-03-17/clackamas-county-expanding-access-of-broadband-services-to-county-homes-and-businesses.
[221] "Computers, WiFi, and Printing at the Library," City of Salem, https://www.cityofsalem.net/community/library/available-at-the-library/computers-wi-fi-and-printing.
[222] "Wireless Internet Access," City of Newberg, https://www.newbergoregon.gov/library/page/public-computers-wireless-internet.

Asset name	Description
	in key areas of the town using a $225,000 grant received from Facebook.[223]
Yachats Library	The library offers free Wi-Fi access 24/7. After business hours, users can access the network in close proximity to the building.[224]
Seneca Cyber Mill	This non-profit community hub offers free Wi-Fi access for remote workers, students, and entrepreneurs.[225]
Northeast Oregon Economic Development District	This non-profit organization provides training and technical assistance for businesses, citizen groups, local governments, and other non-profits.[226]

3.3.5 Digital equity

The following table identifies representative digital equity assets in the state of Oregon, including workforce development training and employment services related to broadband adoption; technical assistance programs aimed at supporting digital inclusion; and partnerships and coalitions that work toward achieving digital equity. These assets are available to many covered populations.

Table 10: Digital equity assets

Asset name	Description
Sheridan AllPrep Academy: Online Learning for Oregon Students[227]	Empowering families by creating an online learning community that offers academic and social support while preparing students for a successful transition to post-secondary and the world of work.
Multnomah County Library Tech Help & Digital Literacy Classes – mobile library	The mobile library brings library services to the mid-county area while some library locations are closed for construction. The mobile library features Wi-Fi access and tech help.
Aging Connected	Older Adults Technology Services (OATS) from AARP and the Humana Foundation have been working together since 2018 to help seniors improve their social connections by offering

[223] "Facebook gives $225K to provide free public Wi-Fi across Prineville," Central Oregon Daily News, July 12, 2021, https://centraloregondaily.com/facebook-gives-225k-to-provide-free-wi-fi-across-prineville/.
[224] "WiFi," Yachats Oregon, https://www.yachatsoregon.org/164/Services.
[225] Seneca Cyber Mill, https://elkhornmediagroup.com/seneca-cyber-mill-offers-free-internet-meeting-space/.
[226] Northeast Oregon Economic Development District, https://www.neoedd.org/.
[227] Sheridan AllPrep Academy, https://sheridanallprep.org/.

Asset name	Description
	technology classes designed for older learners.
WESD Digital Equity	Willamette ESD provides approximately 61 services related to Special Education, Technology, School Improvement, and Administrative Services to school districts.
Oregon's Statewide Assistive Technology Program	Part of a national network of technology-related assistance programs to increase access to assistive technology (AT) devices and services for individuals with disabilities and their families, and to facilitate the development of a consumer-responsive AT service delivery system.
Portland Digital Equity Strategic Initiatives Program	This initiative led by the City of Portland Bureau of Planning and Sustainability promotes investment into communications technology to increase equity for the whole community.[228] Utilizing $3.5 million in ARPA funding, the City launched the Digital Divide Response project in 2021 to address internet access and device needs for "Black, Indigenous, People of Color (BIPOC), seniors, LGBTQIA+, immigrants and refugees, houseless or housing insecure, foster youth, domestic violence survivors, people impacted by incarceration, people with disabilities, and those living in poverty (priority populations) who face barriers to being digitally connected."[229]
City of Salem Tech +50	Part of the City of Salem's +50 initiative that assists older citizens with several different needs, including basic tech skills.[230]
State Library of Oregon – Digital Inclusion Cohort for Public Libraries and 2023 Digital Equity Grant	Through a peer learning cohort, the State Library offers support and training to library staff on designing digital inclusion programs and services.[231] The Library also offered up to 10 grants worth $5,000 to libraries who participated in a cohort to implement digital inclusion programs and services

[228] "Digital Equity Strategic Initiatives Program," City of Portland, https://www.portland.gov/bps/com-tech/digital-equity.
[229] "Digital Divide Response Project Overview," City of Portland, https://www.portland.gov/united/digital-divide-response.
[230] City of Salem "Learn Computers at Tech +50," https://www.cityofsalem.net/community/seniors-and-center-50/increase-your-skills-with-center-50-classes/learn-computers-at-tech-50.
[231] "Digital Inclusion Cohort for Public Libraries", State Library of Oregon, https://libguides.osl.state.or.us/conted/edgecohorts2023.

Asset name	Description
	for underserved communities.[232]
Mt. Hood Cable Regulatory Commission (MHCRC) Community Technology Grants Program	These grants provide support for organizations, schools, libraries, and government agencies to create content for Multnomah County community access channels to address local needs such as education, workforce training, access to social services, and civic participation.[233]
South Wasco County School District	The rural district, comprised of two schools that are developed from many neighboring small communities, implemented digital learning initiatives including offering tablets to every student in grades 3-8 and installing interactive whiteboards in classrooms. The district provides training to teachers on best technology practices.[234]
Beaverton, Oregon School District	The district implemented multiple programs to bridge the homework gap, such as extending library hours to provide internet access, community Wi-Fi services, and providing hotspots to high school students.[235]
Code Fellows	Code Fellows has partnered with the Oregon Department of Education (ODE) and Central Oregon STEM Hub to launch a program to provide technical education to high school students throughout central Oregon that will help prepare them for a successful career in tech industry.[236]
Early Learning System Initiative (ELSI)	Through ELSI, the Oregon State University College of Health Hallie E. Ford Center for Healthy Children and Families is collaborating with community partners to identify existing resources and develop digital literacy training.[237]
Portland Community College	Portland Community College helps students, teachers, and staff stay up to date with current technologies and learn new

[232] "2023 Digital Equity Grant", State Library of Oregon, https://libguides.osl.state.or.us/lstagrants/digitalequity.
[233] "Community Technology Grants Program", Portland Government, https://www.portland.gov/bps/com-tech/mhcrc/tech-grants.
[234] "Wanted: A Bandwidth Upgrade", Office of Educational Technology, https://tech.ed.gov/stories/wanted-a-bandwidth-upgrade/.
[235] "Five Opportunities to Tackle Digital Equity at the Start of the School Year!", COSN, https://www.cosn.org/five-opportunities-to-tackle-digital-equity-at-the-start-of-the-school-year/.
[236] "Partnering to Increase Digital Equity in K-12", Code Fellows, https://www.codefellows.org/blog/patnering-to-Increasing-digital-equity-in-k-12/.
[237] "Digital Literacy," Oregon State University, https://health.oregonstate.edu/elsi/training/digital-literacy.

Asset name	Description
	computer skills through online learning resources and Digital Navigators on campus.[238]
Maggie Osgood Library – City of Lowell	The library offers digital literacy learning for residents through DigitalLearn.org, a website launched by the Public Library Association which includes self-directed tutorials on basic skills like using a computer and searching online. [239]
ChickTech	ChickTech, a national nonprofit headquartered in Portland, provides programs to help women and non-binary people enter the technology field, and works to create a more inclusive tech industry. The organization also has a location in Central Oregon.[240]

3.4 Needs and gaps assessment

This section describes the gaps between the current state of broadband and digital inclusion and the needs of residents and community anchor institutions in Oregon, as documented through rigorous and comprehensive data collection and stakeholder outreach efforts.

The needs assessment documented in this Five-Year Action Plan reflects OBO's evaluation of the range of data sources identified by NTIA as well as data and insights gathered through the comprehensive stakeholder engagement process described in Section 5.

3.4.1 Broadband deployment

As described below in Section 3.4.4, less than 60 percent of Oregon's census blocks are populated. However, there are populated areas that lack even minimal internet service and large areas of the state are underserved.

Oregon has these broadband deployment gaps at least in part because Oregon presents challenging geographies for infrastructure construction (see Section 4.5, Topography). An Oregon Department of Transportation report on the department's broadband strategy, for example, notes that infrastructure is lacking "along the Oregon coast, the coast range, and all areas east of the Cascades."[241]

[238] "Digital Literacy," Portland Community College, https://www.pcc.edu/digital-literacy-support/.
[239] "Digital Literacy," City of Lowell, https://www.ci.lowell.or.us/library/page/digital-literacy.
[240] ChickTech, https://chicktech.org/about/.
[241] "Oregon Dept. of Transportation Broadband Strategy & Implementation Plan," June 2022, https://www.oregon.gov/odot/Maintenance/Documents/ODOT-Broadband-Strategy%26ImplementationPlan_FINAL_6-3-22.pdf.

As noted in Section 3.3.1, Link Oregon has built a middle-mile network for research and education. This fiber, and broadband assets owned by the Department of Transportation (also noted in Section 3.3.1), might play a role in broadband deployment across Oregon.

In addition to broadband infrastructure, Oregon's broadband deployment gaps will require skilled workers to deploy broadband. However, the pool of skilled workers for broadband deployment is smaller than experts predict is necessary for the broadband projects that BEAD will fund nationwide (see Section 4.2, Labor shortages).

3.4.2 Broadband adoption

Oregon is ahead of the U.S. average in internet use. According to the most recent NTIA data (November 2021), 78.9 percent of Oregon residents have high-speed wired internet access at home (with a margin of error of plus or minus 4.0 percent), compared to a national average of 71.3 percent (with a margin of error of plus or minus 0.5 percent).[242]

Though Oregon is ahead of the nation, some Oregon residents still face barriers to adoption. One major barrier is affordability, which is addressed in Section 3.4.3 of this Five-Year Action Plan. According to an NTIA blog post about U.S. residents who do not have internet access, "about one-fifth of offline households cited concern for the expense of getting online as their main reason for non-use,"[243] which translates to approximately 4 million households nationwide. OBO consistently heard from nonprofits representing various covered populations that the cost of broadband service and computing devices often limited their beneficiaries' ability to get online. A lack of affordable devices can exacerbate broadband subscription affordability issues.

Another barrier to adoption is broadband deployment, discussed in Section 3.4.1 of this Five-Year Action Plan. During OBO's regional meetings, rural and frontier residents often raised concerns about deployment outside of town centers.[244] OBO also heard similar concerns from urban residents—such as in East Portland—who were unable to obtain high-speed internet services.

Digital equity can be another barrier. Oregonians may choose not to use the internet due to a lack of digital skills or device, a lack of relevant or accessible content, or concerns about cybersecurity. Those needs are addressed in Section 3.4.5 of this Five-Year Action Plan and will be addressed in greater detail in the state's forthcoming Digital Equity Plan.

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[242] "Digital Nation Data Explorer: Wired High-Speed Internet Service Used at Home," NTIA, November 2021, https://ntia.gov/other-publication/2022/digital-nation-data-explorer#sel=wiredHighSpeedAtHome&disp=map. This data set does not provide the percentage of households using wireless or mobile high-speed internet service at home. In Oregon, 4.4 percent use satellite internet service at home (with a margin of error of plus or minus 1.3 percent), compared to a national average of 3.5 percent (with a margin of error of 0.2 percent), according to the data as of November 2021. "Digital Nation Data Explorer: Satellite Internet Service Used at Home," NTIA, November 2021, https://ntia.gov/other-publication/2022/digital-nation-data-explorer#sel=satelliteAtHome&disp=map.

[243] "Switched Off: Why Are One in Five U.S. Households Not Online?" NTIA blog, October 5, 2022, https://ntia.gov/blog/2022/switched-why-are-one-five-us-households-not-online.

[244] Approximately 35 percent of Oregonians live in rural and frontier areas of the state.

3.4.3 Broadband affordability

In Oregon, 190,362 households are enrolled in the FCC's Affordable Connectivity Program (ACP) as of June 2023,[245] representing about 25 percent of the 719,513 eligible households in the state.[246] ACP enrollment in Oregon lags the nation's 37 percent as a whole:

A cost study conducted as part of the Statewide Broadband Assessment (2020) found that the majority (55.1 percent) of households in Oregon pay $40 to $80 per month for their internet service, and the average household spending is $76.90 per month. Comparison of rural versus urban household monthly spending on internet service revealed roughly comparable averages of $73 rural and $79 urban.

A report for the Oregon Public Utility Commission in 2023[247] concluded that there "appears to be a strong relationship between consumers' willingness to purchase a broadband Internet subscription and their household income level. Household Internet subscription rates increase steadily for households with higher income levels. Only 83.0 percent of households in the lowest median household income (MHI) quintile have broadband Internet access at home; whereas for the highest MHI quintile the take-rate is 95.4 percent. That lower-income households are less likely to subscribe for a broadband service at home underscores the need to maintain some level of low-income support for Internet access."

3.4.4 Broadband access

The 2020 Statewide Broadband Assessment, which analyzed service at the census block level, found that 95 percent of the state's population live in areas that have service of at least 25/3 Mbps. 67.4 percent of these residents have access to service that provides speeds of 100/100 Mbps or greater, while 27.6 percent are served by at least 25/3 Mbps but less than 100 Mbps symmetrical.

The same study found that 50.8 percent of the state's population has access to fiber. For another 23.3 percent, cable is the best technology available in their census block. For 21.3 percent of residents, fixed wireless is the best technology available, and only 3.1 percent of Oregon's population do not have any options other than DSL. 1.5 percent of the population does not have any of the technologies studied; however, this still represents more than 61,000 people.

Analyzing the fastest speed available by census blocks showed that some areas of Oregon are well-served with at least 25/3 Mbps broadband, as well as 100 Mbps symmetrical broadband, especially along the I-5 corridor and in the urban areas such as greater Portland, Salem, Albany, and Eugene. There were also several large pockets of unserved (i.e., less than 25/3 Mbps, per the NTIA's

[245] "ACP Enrollment and Claims Tracker," USAC, https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/#enrollment-by-state (accessed July 27, 2023).
[246] "Oregon Bipartisan Infrastructure Law Fact Sheet," White House Briefing Room, July 2022, https://www.whitehouse.gov/wp-content/uploads/2022/08/Oregon-BIL-Fact-Sheet.pdf.
[247] Lee Selwyn et al., "Report to the Oregon Public Utility Commission on Barriers Faced by Low-Income Consumers and Policy Initiatives for OTAP to Overcome Them," Oregon PUC, May 8, 2023, https://www.oregon.gov/puc/forms/Forms%20and%20Reports/OTAP-HB4092-Report.pdf (linked to from "All PUC Reports & Forms," Oregon PUC, https://www.oregon.gov/puc/forms/Pages/default.aspx).

definition) census blocks in the more rural and sparsely populated frontier areas of the state, especially in southern and eastern Oregon.

Further analysis showed that the state has a digital divide between its rural and urban areas:[248] 9.4 percent of the state's rural population did not have access to 25/3 Mbps service, compared to 0.8 percent of residents in urban areas. Among rural residents, 42.4 percent were served at 25/3 Mbps or greater, but less than 100 Mbps symmetrical, compared to 12.8 percent of urban residents. Among the state's urban population, 86.4 percent had access to service at speeds of 100/100 Mbps or greater, while less than half (48.2 percent) of residents in rural areas had access to those speeds.

Similar to the analysis of the fastest speeds available, census blocks with fiber services tended to be prominent in the more densely populated areas. Significant exceptions are the areas extending north and south from Bend, which showed extensive use of fixed wireless broadband.

Cable was the dominant broadband technology for Oregon's urban households while rural households depend on more diverse, generally slower and frequently more expensive, technology types.

Although the state's more populated areas are well-served, the overall geography and less populated parts of the state are not: just 54 percent of census blocks, compared to 95 percent of the state's population, are served at speeds of at least 25/3 Mbps. Of the remainder, 36.5 percent of census blocks are unserved (i.e., there is no evidence of broadband connections in the census block). This is likely due to the fact that, per this analysis, only 59.3 percent of Oregon's census blocks are populated.

3.4.5 Digital equity

The Oregon Statewide Broadband Assessment (2020) found that while much of Oregon's geography in urban areas is well-served by terrestrial broadband, there are areas that show lesser coverage—and in reviewing these areas, lower household income is a factor.

The state's outreach and engagement continues to identify the needs of specific covered populations, a topic that will be covered in greater detail in the forthcoming State Digital Equity Plan. For example, a representative of an organization that serves those with intellectual and developmental disabilities described several needs and gaps specific to the group of people they serve:

1. Members of this group may need modified devices to make them accessible and may need specialized tech support;

[248] Urban areas in the study consist of Senate districts 13-15, and 17-24 (Metro Portland); Senate districts 10-11 (Salem); Senate District 8 (Albany, Corvallis); and Senate District 7 (Eugene).

2. Members of this group may need access to broadband at home, as they may lack transport to access areas that have publicly-available broadband and may face other challenges in accessing public broadband networks;

3. Members of this group need appropriate skills and training; and

4. Members of this group need training about safety and appropriate behavior as this community is especially vulnerable to exploitation.

Digital literacy programs could help Oregon residents obtain employment, as jobs increasingly require digital literacy that many Oregonians may lack. The Brookings Institution calls it "digitalization"—the transformation of employment opportunities to require some level of digital skills and comfort with technology.[249] Brookings finds that as of 2020, 77 percent of employment in the United States has either a medium or high digitalization level.[250] Brookings also finds that the fastest growing employment sectors have the highest demand for digital skills.

The FCC 2020 BDAC Report also finds growth in professions with high digitalization, finding for example that jobs in cybersecurity have increased by 43 percent in 2022, compared to just an 18 percent increase in the more general labor market during the same time frame.[251] This trend toward requiring increased digital skills even for "low tech" employment opportunities in warehouses, construction sites, and retail further exacerbates the digital divide. Statistics further shows that people of color are underrepresented in employment with high levels of digitalization.[252] Where the digital divide is greatest, the digitalization of employment creates a larger digital divide by leaving those without the opportunity to gain digital skills farther and farther behind.

Further, increased digitalization brings with it increased productivity and increased pay levels. Brookings finds that the "wage premium" for jobs with high digitalization levels as compared to those jobs requiring medium digital skills is 47 percent.[253] Thus, communities with a concentration of employment opportunities with high demand for digital skills—which tend to be concentrated in urban and metro areas and on the east and west coast—have overall increased pay levels than

[249] Mark Muro and Sifan Liu, The Brookings Institution, "As the digitalization of work expands, place-based solutions can bridge the gaps," February 7, 2023, https://www.brookings.edu/research/as-the-digitalization-of-work-expands-place-based-solutions-can-bridge-the-gaps/.
[250] Mark Muro and Sifan Liu, The Brookings Institution, "As the digitalization of work expands, place-based solutions can bridge the gaps," February 7, 2023, https://www.brookings.edu/research/as-the-digitalization-of-work-expands-place-based-solutions-can-bridge-the-gaps/.
[251] FCC BDAC Report, p.5, citing Brent Parton, U.S. Department of Labor Blog, "Strengthening and Diversifying the Cybersecurity Workforce," September 19, 2022, https://blog.dol.gov/2022/09/19/strengthening-and-diversifying-the-cybersecurity-workforce.
[252] Mark Muro and Sifan Liu, The Brookings Institution, "As the digitalization of work expands, place-based solutions can bridge the gaps," February 7, 2023, https://www.brookings.edu/research/as-the-digitalization-of-work-expands-place-based-solutions-can-bridge-the-gaps/.
[253] Mark Muro and Sifan Liu, The Brookings Institution, "As the digitalization of work expands, place-based solutions can bridge the gaps," February 7, 2023, https://www.brookings.edu/research/as-the-digitalization-of-work-expands-place-based-solutions-can-bridge-the-gaps/.

those with lower digital skills jobs and more opportunity for workers to develop the necessary digital skills.[254] Creating a workforce with increased digital skills will not only help to close the digital divide, but create socioeconomic opportunities to support families and communities.

USDA notes that closing the digital divide is critical to rural workforce development, as well as economic development and telehealth.[255]

While access to a computer and broadband service is increasingly important to job seekers, access is not equally available. In Oregon, access to fiber correlates with wealth. Currently, fiber is available to a higher percentage of high-income households compared to low-income households, according to a 2023 report to the Oregon PUC.[256] Statewide, fiber is available to 69.8 percent of high-income households and to 49.4 percent of low-income households, according to the report. tribal lands have relatively low fiber availability, with service offered to 1,126 tribal locations out of a total of 6,002 locations (approximately 18.8 percent availability) in the tribal areas of Oregon's nine federally recognized tribes.[257]

[254] Mark Muro and Sifan Liu, The Brookings Institution, "As the digitalization of work expands, place-based solutions can bridge the gaps," February 7, 2023, https://www.brookings.edu/research/as-the-digitalization-of-work-expands-place-based-solutions-can-bridge-the-gaps/.
[255] U.S. Department of Agriculture, "USDA Resource Guide for Rural Workforce Development: Together, America Prospers," June 2021, https://www.rd.usda.gov/sites/default/files/060721-ic-ruralworkforceguide-final508.pdf.
[256] Lee Selwyn et al., "Report to the Oregon Public Utility Commission on Barriers Faced by Low-Income Consumers and Policy Initiatives for OTAP to Overcome Them," Oregon PUC, May 8, 2023, https://www.oregon.gov/puc/forms/Forms%20and%20Reports/OTAP-HB4092-Report.pdf (linked to from "All PUC Reports & Forms," Oregon PUC, https://www.oregon.gov/puc/forms/Pages/default.aspx).
[257] Lee Selwyn et al., "Report to the Oregon Public Utility Commission on Barriers Faced by Low-Income Consumers and Policy Initiatives for OTAP to Overcome Them," Oregon PUC, May 8, 2023, https://www.oregon.gov/puc/forms/Forms%20and%20Reports/OTAP-HB4092-Report.pdf (linked to from "All PUC Reports & Forms," Oregon PUC, https://www.oregon.gov/puc/forms/Pages/default.aspx), Table 1a-13.

4. Obstacles or barriers

This section describes known or potential obstacles or barriers that might impede the successful implementation of Oregon's BEAD Five-Year Action Plan—as well as the Oregon Broadband Office's plan to address these challenges.

This Five-Year Action Plan represents a comprehensive needs assessment that will guide the state's Initial Proposal. Through the process of developing this Plan, OBO has identified a range of potential obstacles or barriers that it will seek to mitigate. Successfully working through these potential barriers will be critical to achieving the state's vision of universal broadband service and digital equity throughout the state.

In addition to the high-level discussions in the subsections below, the potential obstacles or barriers include the following:

- **Permitting**—Permitting is a potential source of significant delays in Oregon's beautiful, topographically diverse, and historical landscape. Permitting could be a barrier to any project, but it is potentially a critical barrier to new broadband service providers that are otherwise interested in participating in the BEAD program. During the course of the stakeholder engagement conducted for this Plan, small ISPs expressed concern that they lack relationships with agencies that could ease the burden of the permitting process, and, separately, that they lack relationships with pole owners. OBO and the Governor's Office intend to assist ISPs as they seek to establish relationships with numerous state and federal agencies involved in permitting, as well as relevant private entities such as railroads and utilities. For further discussion, see Section 4.1.

- **How to resolve conflict between the FCC's Broadband Map and Oregon's map**—both in terms of availability and fabric, the state seeks guidance on which data sources the NTIA will accept. What data will the NTIA accept regarding wireless coverage areas? What data will the NTIA accept regarding barriers to satellite service such as mountains and trees?

- **How to effectively run the State Challenge Process**—related to the discrepancies between the FCC's broadband map and the state's location and service data, the state will need to develop guidelines for an effective challenge process.

- **How to define Extremely High-Cost locations**—this is a critical question for all states such as Oregon that will need to supplement BEAD funding in order to reach universal service.

- **How to identify community anchor institutions that lack 1 Gbps service**—identifying all qualifying anchor institutions likely will require more extensive research than can be completed prior to the state's submittal of this Five-Year Action Plan.

- **How to address potential noncompliance with the enforceable buildout commitments of specific grant awards**—the BEAD rules prohibit the state from allocating funds to areas subject to an enforceable commitment[258] for the deployment of qualifying broadband. It is within the bounds of possibility that an area in Oregon subject to such an enforceable commitment will not receive broadband service during the timeline of this Five-Year Action Plan, although OBO has not been informed that any specific project in Oregon is at risk. To the extent possible, OBO plans to monitor award progress.

- **How to enable small and diverse business bidders**—given the potential high cost of preparing a bid and handling required environmental and historical permitting, the state recognizes it might need approaches to encourage small bidders to apply (e.g., allowing letters of credit rather than demonstration of existing financial resources, or working with partners listed in Section 3, Table 5). OBO is concerned that even a letter of credit requirement for broadband grants could become more burdensome if interest rates rise and inflation continues to rise as well, and is additionally concerned that small, local providers who possess local knowledge and community support could be deterred from applying for grants as a result.

The following sections describe potential obstacles more generally.

[258] The BEAD NOFO defines an enforceable commitment for the deployment of qualifying broadband as any of the following (BEAD NOFO, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf, p.36-37, n.52):

- Any grant, loan, or loan guarantee provided by OBO to the provider of broadband service;
- Any grant, loan, or loan guarantee provided by the Secretary of Agriculture under [the Rural Broadband Access Loan and Loan Guarantee Program codified as 7 U.S.C. 950bb et seq., the "Rural eConnectivity Pilot Program" or the "ReConnect Notice of Funding Opportunity Program"];
- Any high-cost universal service support provided under Section 254 of the Communications Act of 1934 (47 U.S.C. § 254), except that in the case of the Rural Digital Opportunity Fund, a location will be considered to have an enforceable commitment for qualifying broadband only (a) after the Federal Communications Commission has announced in a Public Notice that RDOF support for that location is ready-to-authorize or is authorized, and (b) the provider does not rely on satellite technologies to deliver service;
- Any grant provided under Section 6001 of the American Recovery and Reinvestment Act of 2009 (47 U.S.C. § 1305)
- Amounts made available for the Education Stabilization Fund established under the heading "DEPARTMENT OF EDUCATION" in title VIII of division B of the CARES Act (Public Law 116–136; 134 Stat. 564), and funded under the CARES Act, the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSA Act), and the American Rescue Plan Act (ARP Act);
- Amounts made available for the Coronavirus State and Local Fiscal Recovery Funds (SLFRF) established under the American Rescue Plan Act of 2021 (Public Law 117–2; 135 Stat. 4) (ARPA);
- Amounts made available for the Capital Projects Fund established by Section 604 of the Social Security Act, as added by Section 9901 of ARPA; or
- Any other grant, loan, or loan guarantee provided by, or funded in whole or in part by, the federal government or a State or Territorial government for the provision of broadband service.

4.1 Legislative and regulatory barriers

The state recognizes the importance of efforts to streamline state and local permitting in such a way as to protect the state's interests while also ensuring effective and efficient broadband construction permitting.[259]

It is feasible that permitting processes could be made more efficient and OBO is working with the Governor's Office to identify potential changes. A recent audit found that permitting is especially burdensome for tribal entities.[260] As one representative of a town government told OBO during the stakeholder outreach conducted for this Plan, localities have different levels of maturity in their broadband development. Another representative of local government asked OBO for assistance in encouraging partnerships for broadband deployment.

Other state agencies are taking steps that can be used as models or treated as pilot programs. For example, as described in Section 3.3, ODOT has implemented an open trench policy to enable broadband providers to take advantage of ODOT projects to expand their networks.[261]

4.2 Labor shortages

The pool of skilled workers for broadband deployment is smaller than experts predict is necessary for the broadband projects that BEAD will fund nationwide. As described elsewhere in this Plan, Oregon plans to use existing relationships with unions and also to use its grant program to encourage service providers to hire and train employees as part of their BEAD projects. Workforce development efforts supported by Digital Equity Act funding may further enhance BEAD projects by providing a larger, more diverse pool of talent.

Federal labor data do not map exclusively to broadband deployment needs because labor categories conflate broadband activities with non-broadband activities. Nevertheless, Bureau of Labor Statistics location quotient data regarding telecommunications line installers and repairers can provide some insight, suggesting that Oregon has fewer telecommunications line installers and repairers than the national average.

The location quotient is the ratio of the area concentration of occupational employment to the national average concentration. A location quotient greater than one indicates the occupation has a higher share of employment than average, and a location quotient less than one indicates the occupation is less prevalent in the area than average. Oregon's location quotient for

[259] Lindsay McKenzie, "NTIA chief says states have 'homework assignments' on broadband permits," *StateScoop*, https://statescoop.com/alan-davidson-ntia-state-broadband-permits/.
[260] "Report 2023-02: The Oregon Broadband Office Must Continue to Take Aggressive Steps to Close the Digital Divide and Fully Meet its Statutory Duties," Oregon Secretary of State, January 2023, https://sos.oregon.gov/audits/Documents/2023-02.pdf, p.5 ("There have been numerous obstacles tribal governments face in Oregon, including financial, environmental, staffing, additional permitting requirements, and developing the right partnerships.")
[261] "ODOT Broadband," ODOT, https://www.oregon.gov/odot/Maintenance/Pages/broadband.aspx.

telecommunications line installers and repairers is 0.70,[262] which means that Oregon's per-capita supply of telecommunications line installers and repairers is 70 percent of the national average, suggesting that there could be a labor shortage for this function.

Nationwide, the Brookings Institution identified more than 130 target occupations and 200,000 workers within those occupations necessary to support large-scale broadband investment.[263] The most critical broadband occupations—telecom line installers and equipment installers and repairers, electrical power line installers, electronics engineers, installation helpers, and radio, cell, and tower equipment installers and repairers—will require approximately 60,000 workers, according to a Brookings analysis of a precursor to the IIJA that did not pass, and its proposal for $80 billion in broadband investment.[264]

"Shortages could be partially filled by currently unemployed and underemployed workers from skills-adjacent occupations such as Electricians, Engineers, A/V Equipment Installers and Repairers, and Construction Laborers," according to Brookings' report. The FCC's 2023 Interagency Report on workforce found that these same critical broadband occupations would have qualified for the Covid-19 Veteran Rapid Retraining Assistance Program that provided support to veterans receiving training toward a certificate or non-college degree that leads to a "high demand" occupation.[265] This suggests that unemployed and underemployed veterans, and veterans in skills-adjacent occupations, can also be a strong pool of candidates to fill these labor supply gaps.

In a surge scenario, where full employment for broadband workers lasts for several years and then comes to an end, Oregon is concerned that highly-skilled labor will need opportunities outside of its specialization. In such a scenario, the workforce development assets identified in this Plan for broadband workforce development would need to be activated again for retraining once the surge of broadband deployment is complete.

Numerous reports warn of an immediate need for telecommunications workers. The Government Accountability Office's (GAO) December 2022 analysis of the telecommunications workforce states that, "thousands of additional skilled workers will be needed to deploy broadband and 5G"

[262] "Occupational Employment and Wages, May 2022: 49-9052 Telecommunications Line Installers and Repairers," U.S. Bureau of Labor Statistics, https://www.bls.gov/oes/current/oes499052.htm, see table titled, "Location quotient of telecommunications line installers and repairers by state, May 2022."

[263] Marcela Escobari, Dhruv Gandhi, and Sebastian Strauss, The Brookings Institution "How federal infrastructure investment can put America to work," March 17, 2021, https://www.brookings.edu/research/how-federal-infrastructure-investment-can-put-america-to-work/.

[264] Marcela Escobari, Dhruv Gandhi, and Sebastian Strauss, The Brookings Institution, "How federal infrastructure investment can put America to work," March 17, 2021, https://www.brookings.edu/research/how-federal-infrastructure-investment-can-put-america-to-work/ (this report relies on data collected in 2020 and considers legislation that preceded the IIJA and proposed $80B in investment, but its analysis and relative numbers are still informative).

[265] 2023 FCC Working Group Report, https://docs.fcc.gov/public/attachments/DOC-390665A1.pdf, p.14 (The FCC discusses the Department of Defense SkillBridge Program that allows active duty military getting ready to separate from the military to receive training in career opportunities prior to leaving the military. See also, Department of the Interior, "DoD SkillBridge Program," https://www.doi.gov/veterans/skillbridge).

as a result of eight federal broadband funding programs, including the BEAD program investment.[266] The GAO focused on eight "key broadband deployment occupations" for its analysis of growth and wages including line technicians and repair, fiber splicers, network engineers, field technicians, general construction laborers, heavy equipment operators, on-site home repair personnel, and central office personnel.

In January 2023, the FCC's Telecommunications Workforce Interagency Group analyzed similar industry labor categories and found a "profound skills gap" in the telecommunications industry workforce that was created, in part, by the IIJA BEAD program's "vast new investment" in advanced communication infrastructure.[267]

Previously, in 2020 and prior to Congressional allocation of BEAD funding, the FCC's Broadband Deployment Advisory Committee (BDAC) found there were 29,000 broadband-related technicians in the U.S. and that there would be a demand to hire 20,000 more technicians over the next 10 years.[268] This report suggests that "considerable doubt has arisen among broadband infrastructure industry stakeholders as to whether they can meet build-out projects due to current workforce challenges."[269]

The BDAC Report discussed several workforce challenges that are creating barriers to meeting the expected demand for skilled workers caused by the increase in broadband projects. Subsequent reports, including the 2023 FCC Working Group Report, as well as the GAO 2022 analysis, reinforce many of the FCC's 2020 findings as they update the analysis to factor in IIJA BEAD project demands.

For example, the FCC 2020 BDAC Report noted that the impact of COVID and the "Great Resignation" must be considered when analyzing the market for low- and medium-wage workers, including the increased retirement of older workers and workers being squeezed out due to childcare or elder care obligations.[270]

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[266] FCC 2020 BDAC Report , https://www.fcc.gov/sites/default/files/bdac-job-skills-training-opportunities-approved-rec-10292020.pdf, p.11.
[267] FCC Telecom Interagency Working Group, "Recommendations to Address Workforce Needs," (2023 FCC Working Group Report) January 13, 2023, https://docs.fcc.gov/public/attachments/DOC-390665A1.pdf, p.5.
[268] FCC BDAC, "Broadband Infrastructure Deployment Job Skills and Training Opportunities Working Group Report," (FCC 2020 BDAC Report) October 29-30, 2020, https://www.fcc.gov/sites/default/files/bdac-job-skills-training-opportunities-approved-rec-10292020.pdf, p.7.
[269] FCC 2020 BDAC Report, p.6.
[270] FCC 2020 BDAC Report, p.6; See also America Achieves, Rural Innovation Strategies, Inc. (RISI), "Creating and Expanding a Diverse Broadband Workforce with Good Jobs and Career Pathways: Broadband Equity, Access, and Deployment (BEAD) Program Playbook for Eligible Entities," (RISI BEAD Playbook) First Edition, June 22, 2022, https://americaachieves.org/wp-content/uploads/2022/06/America-Achieves-Broadband-Workforce-Report-June-2022.pdf, p.8-9; See also Marcela Escobari, Dhruv Gandhi, and Sebastian Strauss, The Brookings Institute, "How federal infrastructure investment can put America to work," March 17, 2021, https://www.brookings.edu/research/how-federal-infrastructure-investment-can-put-america-to-work/, p.1.

The FCC 2020 BDAC Report also found that there is a lack of awareness among job seekers of the opportunities for strong employment in the broadband infrastructure industry caused in part by a lack of training and certification programs offered by either educational institutions or industry stakeholders.[271] This is an area of opportunity for the state and its partners to ameliorate the potential broadband deployment workforce shortage.

The FCC provided a countervailing argument to the impact of COVID and lack of awareness by noting that the importance of broadband and the increased reliance on broadband services during COVID, as well as the treatment of broadband workers as essential during that time, gives the industry an opportunity to expand awareness about the broadband labor market and demand.

Moreover, both the FCC and a more recent paper by America Achieves, Rural Innovation Strategies, Inc. (RISI), found a growing credentialing environment with multiple organizations developing individual credentialling and training programs. These certifications include multiple certification agency programs within several employment classifications including cable splicing, tower technician, outside plant engineer, and several others.[272]

A lack of standardized training and coordination of employment opportunities in the industry leads to a lack of clear career pathways and broader skill sets among broadband workers that can be more generally applicable which, in turn, inhibits a flow of broadband workers to meet immediate demands for specific types of workers, as well as inhibiting career advancement and changes.

The GAO analysis further noted that recruiting necessary workers into rural areas may be more complicated due to the lower population density and remoteness of those communities, as well as statistics that suggest only 10 percent to 15 percent of telecommunications workers travel beyond 200 miles from their homes to work on remote projects.[273]

Gathering necessary statistics is made difficult by the fact that the U.S. Department of Labor has no broadband-specific job codes.[274] Experts suggest there are 15 different Department of Labor job codes that could be included in the analysis of the broadband workforce market—ranging from general categories such as construction laborers and managers, miscellaneous assemblers, and sales representatives to more specific roles including telecommunications equipment installers and telecommunications line installers.[275]

The FCC 2020 BDAC Report also found that these positions are difficult to hire and retain due to the uncertainty and project-based nature of the work, the requirement to be on-call and ready to report to work on a new job without much notice, and requirements to travel to a different city for

[271] FCC 2020 BDAC Report, https://www.fcc.gov/sites/default/files/bdac-job-skills-training-opportunities-approved-rec-10292020.pdf.
[272] GAO Report, p.48.
[273] GAO Report, p.14.
[274] RISI BEAD Playbook, https://americaachieves.org/wp-content/uploads/2022/06/America-Achieves-Broadband-Workforce-Report-June-2022.pdf, p.24.
[275] RISI BEAD Playbook, p.24.

long-term stays during a job, as well as delays in employment and requirements to stop work due to external factors like weather and material supply shortages.[276]

The National Governors Association notes that 83 percent of telecommunications line installers are white and only 6 percent are women, making it even more difficult to recruit workers if they do not see themselves in the positions.[277]

The RISI BEAD Playbook and the GAO note there will be increased competition for workers from other broadband infrastructure projects just getting under way with funding from the ARPA grant programs and USDA and RDOF programs, as well as additional competition for trades such as construction, electricians, and other labor categories that support large infrastructure projects as a result of the IIJA's other investments in transportation, water, and other infrastructure.[278] The growth of fixed wireless and 5G installation could be viewed as competition for some of these labor categories, or as an opportunity and synergy to bring new workers into the telecommunications industry more generally. Experts note a boom in demand for high-wage, high-skilled workers for these jobs, many of which have crossover and adjacent skills to support wireline fiber broadband projects.[279]

To mitigate these issues, small and rural Oregon ISPs are partnering with local technical colleges and the Oregon State University Extension to create programs that help sustain their current workforce. During OBO's stakeholder outreach, ISPs expressed concerns about labor pipelines and interstate competition for workers.

4.3 Supply chain issues and materials availability

The vast amount of money allocated to broadband has caused a spike in demand for labor and materials. These resources added to an already disrupted market as Covid-19 caused factory closures and other issues in the supply chain.

Supply chain challenges reached unprecedented levels during the Covid-19 pandemic and have not disappeared. "Given that there are multiple new risk factors on the horizon, it is hard to envision trust in the system being restored to pre-Covid-19 levels any time soon," according to S&P Global Intelligence,[280] citing both geopolitical risks such as Ukraine and Taiwan and transportation risks including contract negotiations and unanticipated cargo surges.

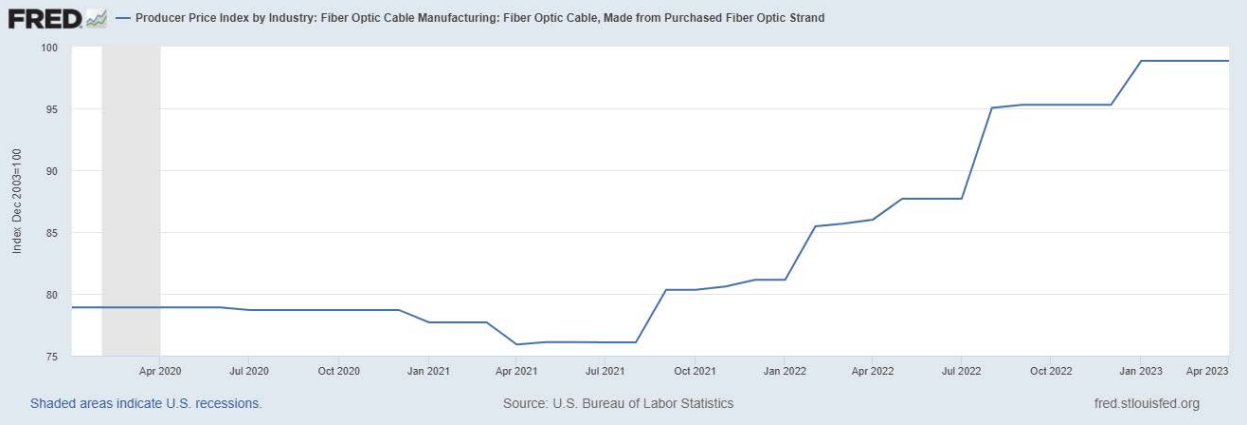
[276] FCC 2020 BDAC Report.
[277] National Governors Association, Commentary, "Governors' Broadband Investments Are Creating Jobs," September 13, 2021, https://www.nga.org/news/commentary/governors-broadband-investments-are-creating-jobs/.
[278] RISI BEAD Playbook, p.8-9; See also, GAO Report, https://www.gao.gov/assets/gao-23-105626.pdf, p.14.
[279] RISI BEAD Playbook, p.26.
[280] Peter Tirschwell, S&P Global Market Intelligence, "Risk Will Define Supply Chains for Years To Come," January 13, 2023, https://www.spglobal.com/en/research-insights/featured/special-editorial/look-forward/risk-will-define-supply-chains-for-years-to-come.

According to recent research, delays on orders of new fiber are decreasing, but are still challenging.[281] Local ISPs continue to report challenges. One ISP told OBO, during the stakeholder outreach and engagement conducted for this Plan, that it is facing delays of 12 to 18 months on orders of high-count fiber bundles. Another entity suggested the state should evaluate the feasibility of stockpiling materials in advance of the award of grants.

During 2023, inflation remains a potential barrier. "Even though inflation started to cool toward the end of 2022, it is still unclear how long it will take to return to its long-run average—that is, if currently high inflation will persist," the Federal Reserve Bank of St. Louis said in a blog post.[282]

For example, the fiber optic cable producer price index from the Federal Reserve Bank of St. Louis rose over 20 percent between January 2020 and April 2023, the most recent date for which data are available, as shown below.[283]

Figure 4: Fiber optic cable producer price index, January 2020 to April 2023



4.4 Industry participation

OBO does not anticipate lack of industry participation will be a barrier to implementation of this Plan. OBO is gratified with the level of participation by Oregon ISPs in state programs and in outreach and engagement. Through its grant programs and other outreach, OBO has engaged with

[281] "Fiber Broadband Association Reports Dramatic Improvements to Supply Chain," Fiber Broadband Association, May 2, 2023, https://fiberbroadband.org/2023/05/02/fiber-broadband-association-reports-dramatic-improvements-to-supply-chain/, reporting significantly improved lead times in several broadband categories, with delays down to approximately 5 weeks, depending on the category – hand holes were still registering delays of 8 to 14 weeks as of March 2023.

[282] Michael McCracken and Trần Khánh Ngân, Federal Reserve Bank of St. Louis, *On the Economy Blog*, "Will High Inflation Persist?" January 10, 2023, https://www.stlouisfed.org/on-the-economy/2023/jan/will-high-inflation-persist.

[283] Federal Reserve Bank of St. Louis, Producer Price Index by Industry: Fiber Optic Cable Manufacturing: Fiber Optic Cable, Made from Purchased Fiber Optic Strand (PCU3359213359210) for the period January 2020 to April 2023, https://fred.stlouisfed.org/graph/fredgraph.png?g=10yYm (note that the hyperlink connects to the most recent data and therefore may link to a more recent version of the graph). The series data are available at https://fred.stlouisfed.org/series/PCU3359213359210.

most ISPs operating in the state. Continuing outreach should enable OBO to engage additional ISPs, including, for example, ISPs that have not participated in previous grant programs.

4.5 Topography

OBO has divided the state into four regions for its preliminary analysis: the Pacific Border along the coast; the Cascade Sierra Mountains, east of the coast; the Basin and Range[284] in the Southeast; and the Columbia Plateau. Each of the four regions presents unique topographical challenges in terms of broadband infrastructure deployment;[285] OBO's analysis will be refined during the process of preparing the Initial Proposal.

4.6 Affordability

As discussed in Section 3.4, affordability is a barrier to some residents of Oregon. Oregon continues to encourage eligible residents' participation in the federal Affordable Connectivity Program (ACP), which provides a $30 monthly subsidy on broadband services. Households on tribal lands can qualify for the Enhanced Tribal Benefit of up to $75 per month.[286]

In addition, Oregon Lifeline is a federal and state government program that provides a monthly discount on phone or broadband service for qualifying low-income Oregon households. Participants can receive a discount on their phone bill of up to $15.25 per month; receive a discount on their broadband bill of up to $19.25 per month; or receive free cell phone and data service.[287] Oregon residents on federally recognized tribal lands may qualify for an additional $25 discount per month under the Tribal Lifeline program.[288]

4.7 Digital literacy

During outreach and engagement, OBO has heard repeatedly that digital literacy is a significant barrier in Oregon. "The thing we see the most in libraries is the gap in digital skills," one librarian told OBO during the stakeholder outreach conducted for this Plan. A county representative said it is difficult to hire staff for digital literacy teaching positions due to a lack of specialized training.

Businesses that need cybersecurity training can find it in Oregon. As one example, the Oregon Small Business Development Center (SBDC) Network provides training, online courses, and resources for businesses throughout the state.[289]

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[284] "Northern Basin and Range," The Oregon Conservation Society, https://oregonconservationstrategy.org/ecoregion/northern-basin-and-range/.
[285] "State Climate Summaries 2022: Oregon," NOAA National Centers for Environmental Information, https://statesummaries.ncics.org/downloads/Oregon-StateClimateSummary2022.pdf.
[286] "Enhanced Tribal Benefit," Universal Service Administrative Company, https://www.affordableconnectivity.gov/do-i-qualify/enhanced-tribal-benefit/.
[287] "Oregon Lifeline," Oregon Public Utility Commission, https://www.oregon.gov/puc/Pages/Oregon-Lifeline.aspx.
[288] "Tribal Lifeline," Oregon Public Utility Commission, https://www.oregon.gov/puc/Pages/Oregon-Lifeline.aspx.
[289] "About," Oregon SBDC, https://oregonsbdc.org/about-oregon-sbdc/.

Several innovative digital literacy initiatives are discussed in Section 3.3. OBO intends to address these digital literacy issues by identifying and supporting established, successful digital literacy programs (see Section 3.3 and Section 5.1). Oregon's forthcoming Digital Equity Plan will also address these issues.

Individuals who wish to pursue a career in cybersecurity in Oregon have numerous options for acquiring the skills they need,[290] as illustrated by Cyber Oregon, a statewide initiative powered by a public-private consortium.[291]

Language barriers may be both a challenge and opportunity. Like many other states, Oregon has experienced changing demographics, with an increase in migrant communities who have a limited knowledge of English or who speak another language as their primary language.

4.8 Procurement and contracting

Effective procurement and contracting are essential to the success of government-funded infrastructure projects—so challenges in this regard are potential obstacles to the success of the BEAD Plan. That said, Oregon has a successful track record of efficient procurement and contracting for infrastructure deployment.

Oregon's OregonBuys eProcurement System demonstrates the state's leadership in streamlined online procurement best practices. OregonBuys is run by the Oregon Department of Administrative Services (DAS), which sponsors monthly gatherings of procurement professionals for the purpose of sharing information and best practices.[292] Oregon expects that these systems will assist with OBO's compliance and monitoring duties, to be described in future deliverables such as the Initial Proposal. Given this successful track record, the state does not anticipate that procurement or contracting will present obstacles to the implementation of this Plan.

4.9 Natural disasters and infrastructure survivability

Oregon is subject to wildfires and earthquakes. While the broadband networks that will be constructed as a result of this Plan will generally make communities more resilient and better able to disseminate information when hazards occur, those natural disasters are a threat to the broadband infrastructure itself.[293]

[290] "Education: Preparing for a Career in Cybersecurity," Cyber Oregon, https://cyberoregon.com/education/.
[291] "Cyber Oregon Backgrounder," Cyber Oregon, https://cyberoregon.com/wp-content/uploads/2017/11/Cyber-Oregon-Backgrounder.pdf.
[292] "Procurement," DAS, https://www.oregon.gov/das/Procurement/Pages/Index.aspx.
[293] See, e.g., Steve Corbato, "On Research Data in Action: Broadband Support for Disaster Early Warning Systems," Link Oregon, September 14, 2020, https://www.linkoregon.org/2020/09/14/on-research-data-in-action-broadband-support-for-disaster-early-warning-systems/. See also, Chris Barncard, "Cellular networks vulnerable to wildfires across U.S., University of Wisconsin-Madison, October 27, 2020, https://news.wisc.edu/cellular-networks-vulnerable-to-wildfires-across-u-s/.

The state's 2020 Natural Hazards Mitigation Plan (NHMP)[294] says that Oregon is susceptible to the following 11 natural hazards:[295]

1. Coastal hazards
2. Droughts
3. Earthquakes
4. Extreme heat
5. Floods
6. Landslides
7. Tsunamis
8. Volcanos
9. Wildfires
10. Windstorms
11. Winter storms

Most of these hazards are present in all eight of the state's defined geographical zones; tsunamis and coastal hazards are present only in the coastal zone.[296]

The state is especially concerned about the vulnerability of Oregon's Critical Energy Infrastructure (CEI) Hub located in Northwest Portland.[297] A Cascadia earthquake or tsunami event would devastate the region's infrastructure, including its petroleum supply and distribution system, potentially affecting the delivery of broadband service both in and beyond that region, as well as the availability of technicians to make any repairs that require vehicles.

Oregon is also concerned about a critical internet interconnection point in Portland. Oregon's internet infrastructure meets the world at Pittock Block, a regional interexchange point that connects to the Asia-Pacific internet market via Oregon's subsea cable landing stations.[298] Pittock

[294] "Oregon Natural Hazards Mitigation Plan," Oregon, September 24, 2020, https://www.oregon.gov/lcd/NH/Documents/Approved_2020ORNHMP_00_Complete.pdf (Oregon 2020 NHMP), linked to from "Natural Hazards Mitigation Planning," Department of Land Conservation and Development, https://www.oregon.gov/lcd/NH/Pages/Mitigation-Planning.aspx.
[295] See also, "Oregon's Natural Hazards," Oregon Department of Land Conservation and Development, https://www.oregon.gov/lcd/nh/pages/natural-hazards.aspx.
[296] Oregon 2020 NHMP, p.10. See also, Tsunami Dangers | National Oceanic and Atmospheric Administration (noaa.gov)
[297] Mike Harryman, State Resilience Officer, "CEI Hub Mitigation Strategies Increasing Fuel Resilience to Survive Cascadia," OSSPAC Publication 19-01, Oregon, December 31, 2019, https://digital.osl.state.or.us/islandora/object/osl%3A941551/datastream/OBJ/download/CEI_hub_mitigation_strategies.pdf, p.1 (PDF p.11).
[298] "Pittock Block a.k.a. PTOR1," 1547 Realty, https://1547realty.com/data-centers/portland-oregon-data-center-ptor1/.

Block is one of the densest interconnection hubs on the West Coast today, so any interruption in service would have a significant impact statewide.

Separately, anywhere in the state, ice storms could cut power, disrupting broadband service.[299]

In addition to the state's hazard mitigation plan, local and tribal entities have hazard mitigation plans of their own. Most entities, including municipalities, counties, and tribal entities, have wildfire mitigation plans. The Oregon Department of Transportation has published a Climate Adaptation & Resilience Roadmap.[300] In summary, although Oregon faces substantial natural disaster challenges, state and local governments have analyzed the issues and Oregon believes it is prepared for these potential obstacles. While the loss of broadband service is potentially one of the harms inflicted by any natural disaster, broadband will also be part of the solution, helping obtain data to analyze the effects of the disaster and providing critical communications when they are most needed.

[299] Josh Lehner, "Economic Impact of Ice Storms and Grid Resiliency," Oregon Office of Economic Analysis, February 16, 2021.
[300] "Climate Adaptation & Resilience Roadmap," Oregon Department of Transportation, December 2022, https://www.oregon.gov/odot/climate/Documents/ClimateAdaptation_andResilienceRoadmap.pdf.

5. Implementation plan

This section describes the state's comprehensive stakeholder engagement process; its priorities, planned activities, and strategies in terms of implementing the BEAD Five-Year Action Plan; and the estimated cost and timeline for achieving universal service in Oregon.

5.1 Stakeholder engagement process

This section describes the comprehensive external engagement process OBO conducted in preparation of this Plan. OBO intends to continue its stakeholder engagement and outreach efforts around broadband deployment and digital equity in the state—particularly to engage with covered populations and stakeholders that historically may not have had as much representation in public planning processes.

OBO staff have worked to build trusting relationships with stakeholders and the public through longstanding collaboration and advocacy to ensure broadband needs are heard. As part of Business Oregon, OBO works with the Regional Development Officers in each of the Business Oregon regional offices to reach local stakeholders across the state.

In preparation of this Plan, OBO reached out to its partners to begin an intensive engagement process that included:

- Twelve in-person regional meetings throughout Oregon
- Seven sector-specific meetings with expert stakeholders
- Five focus group discussions
- Intergovernmental meetings with all tribal governments in the state
- Email, press release, social media, phone, radio, and in-person outreach

Additional engagement work includes a range of six stakeholder surveys, an online public needs questionnaire, and one statewide phone survey of Oregonians.

As part of its outreach efforts, OBO redesigned and publicized its website to highlight information important to the development of the BEAD Five-Year Action Plan and the Digital Equity Plan, such as detailed information on the location of in-person engagements, links to the surveys and questionnaire, and calls to action for individuals experiencing inadequate broadband service.

The stakeholder engagement effort, comprised of statewide meetings and surveys with a comprehensive range of stakeholders and the public, demonstrated collaboration with local, regional, state, tribal, and federal entities (governmental and non-governmental). The stakeholder

engagement process also included the covered populations[301] identified as core stakeholder groups.

OBO took great steps to create accessible and inclusive conversations related to BEAD and Digital Equity concerns throughout Oregon. These measures included strategic decisions to ensure several in-person engagements were conducted throughout the state and virtual engagement options were provided to enable participation from stakeholders spread throughout the state. The process reflects OBO's effort to facilitate an inclusive and effective engagement model.

OBO provided information about BEAD in its engagement sessions.[302] This information is designed to involve all interested parties in the historic broadband deployment undertaking outlined in this Plan, which will be described in greater detail in the forthcoming Initial Proposal and Final Proposal.

OBO intends to continue its stakeholder engagement and outreach efforts around broadband deployment and digital equity in the state—particularly to engage with covered populations, tribal governments and organizations, and stakeholders that historically have not been included in public planning processes.

The external engagement process undertaken while OBO developed this Plan will be the model for engagement that will be undertaken following submission of the Plan to support collaboration with stakeholders throughout the BEAD program. OBO's engagement efforts are ongoing and will be used to inform subsequent BEAD and Digital Equity activities and deliverables.

5.1.1 Full geographic coverage

OBO engaged the full geographic range of Oregon through both stakeholder outreach and public engagement. To ensure outreach to stakeholders covered the entire state, OBO conducted seven virtual statewide meetings with invitations sent to over a thousand identified contacts throughout Oregon.

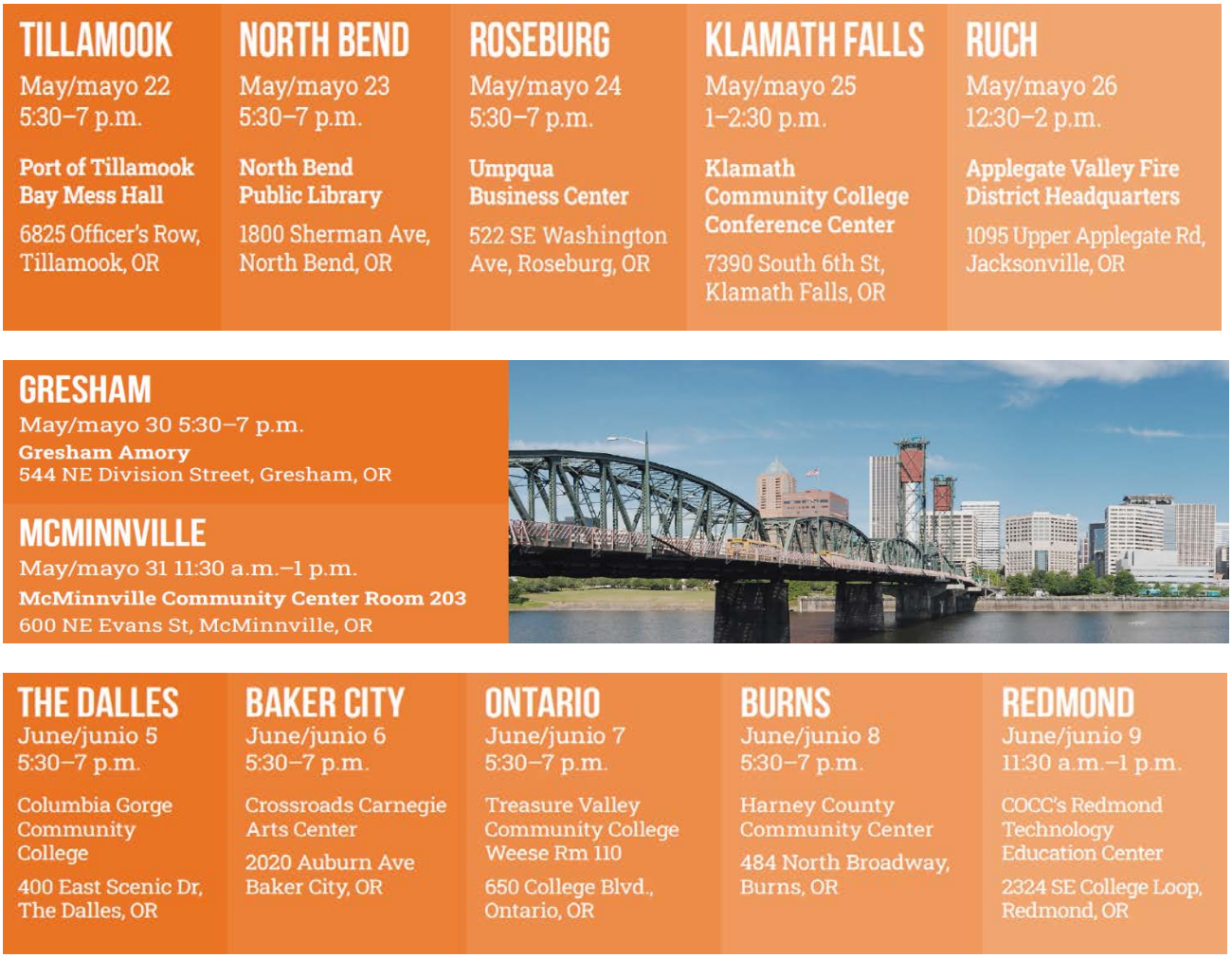
OBO engaged with the public in open meetings in 12 locations around the state to ensure regional diversity was core to the engagement efforts (Figure 5). Engagement with partners and tribal

[301] Per NOFO Section I.C.g, referencing IIJA Section 60302(10), the covered populations are:
1. Individuals who live in covered households;
2. Aging individuals;
3. Incarcerated individuals, other than individuals who are incarcerated in a Federal correctional facility;
4. Veterans;
5. Individuals with disabilities;
6. Individuals with a language barrier, including individuals who—
    a. Are English learners; and
    b. Have low levels of literacy;
7. Individuals who are members of a racial or ethnic minority group; and
8. Individuals who primarily reside in a rural area.

[302] See, for example, the slides in English and Spanish for its regional meetings. "Oregon Broadband Equity Access and Deployment and Digital Equity Regional Meeting," OBO, May-June 2023, https://www.oregon.gov/biz/Publications/Broadband/Regional_Session_Presentation.pdf.

governments continues through ongoing virtual and in-person meetings. Invitations for the regional meetings were sent to regional partners and stakeholders, such as libraries and local governments, to help distribute the promotional flyer along with local radio spots and social media posts on OBO's Facebook, Twitter, and LinkedIn pages. In May, OBO had 12 posts on each of OBO's three social media sites. In June OBO had eight posts on each site and had four posts on each site in July. In addition, Business Oregon representatives in each of its 12 regions also invited diverse groups of local stakeholders to join these meetings.[303]

Figure 5: Advertisements of in-person meetings



These meetings provided a general overview of broadband technology, an overview of the timeline and components of BEAD and Digital Equity, resources available to the public, and how they can meaningfully engage to support the development of the Five-Year Action Plan and Digital Equity Plan. Small group and large group discussions spurred comments and questions from the public

[303] See "Regional Service Areas," Business Oregon, https://www.oregon.gov/biz/aboutus/regions/Pages/default.aspx.

about their internet experience. At each session, tablets were available for participants to complete the online questionnaire during the session.

OBO met with the following tribes and attended the following tribal gatherings:

- March 23, 2023 – 1st NTIA Tribal Broadband Leaders Network Summit
- March 27, 2023 – Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians
- March 30, 2023 – Coquille Indian Tribe
- March 31, 2023 – Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians
- April 5, 2023 – Native American Advisory Council, Chiloquin, OR
- April 7, 2023 – Burns Paiute Tribe
- April 19, 2023 – Confederated Tribes of Umatilla Reservation

OBO supplemented the activities above by attending the following general engagements:

- January 24, 2023 – Winter 2023 ATNI (Affiliated Tribes of the NW Indians)
- January 25, 2023 – Joint Ways and Means Transportation and Economic Development Subcommittee
- February 21, 2023 – House Committee On Economic Development and Small Business
- March 1, 2023 – Malheur County Board of County Commissioners
- March 8, 2023 – ITA Showcase NW Telecommunications Tradeshow
- March 9, 2023 – Business Oregon Commission
- March 22 to 24, 2023 – NTIA Tribal Broadband Summit
- March 30, 2023 – Oregon Broadband Advisory Council
- April 28, 2023 – Economic Development & Community Services State-Tribal Cluster meeting
- May 4, 2023 – Public Health Modernization
- May 8, 2023 – Affiliated Tribes of the Northwest Indians
- May 17, 2023 – Legislative Committee on Indian Services
- May 31, 2023 – Oregon Broadband Advisory Committee
- June 5, 2023 – Marion County
- June 7, 2023 – Polk County
- June 9, 2023 – Business Oregon Commission

- June 13, 2023 – Oregon Department of Education, Office of Teaching Learning, & Assessment, Digital Learning and Education

OBO collected notes regarding key themes that arose in all listening sessions and also noted issues specific to each community. OBO noted the needs and gaps as well as aspirations for each group. OBO published these data online, where they remain available.[304]

During the month of July, OBO held five Lived Experience Expert focus group discussions to understand the lived experiences of specific population groups in the state. OBO identified and engaged representatives from stakeholder organizations that serve covered populations to attend the sessions, which include:[305]

- Urban Lived Experience Expert Focus Group: Portland, July 11, 2023, at 10 a.m.
- Urban Lived Experience Expert Focus Group: Hybrid, Portland, July 11, 2023, at 10 a.m.
- Rural Lived Experience Expert Focus Group: Hybrid, Lakeview, July 13, 2023, at 10 a.m.
- Tribal Lived Experience Expert Focus Group: Virtual, July 19, 2023, at 10 a.m.
- Seniors Lived Experience Expert Focus Group: Virtual, July 21, 2023, at 10 a.m.
- Persons with Disabilities Lived Experience Expert Focus Group: Virtual July 23, 2023, at 10 a.m.

OBO ensured that each Lived Experience Expert Focus Group was not only designed to obtain information about specific lived experiences but also included representatives who serve multiple covered populations (e.g., seniors, veterans, persons with disabilities) and could speak to that intersection. OBO recognizes that these groups not only have unique barriers to full digital equity, but they also have intersecting barriers that the state will look to address in its Digital Equity Plan. OBO also worked to ensure that each Lived Experience Expert Focus Group was fully accessible for attendees by offering native language translations and accommodations such as sign language interpreters. A sample of the invitation letter is presented in Appendix E.

Previously, OBO had prepared for this plan during 2022 with a series of listening sessions designed to elicit relevant information at an early stage of the planning process. In April 2022, OBO held

[304] "Community Listening Sessions Summary," OBO, https://www.oregon.gov/biz/Publications/Broadband/OBO%20Broadband%20Listening%20Sessions%20Summary.pdf.

[305] As defined in NTIA's Digital Equity Notice of Funding Opportunities (last accessed July 28, 2023), covered populations includes the following groups: aging individuals (60 and above); incarcerated individuals, other than individuals who are incarcerated in a Federal correctional facility; veterans; individuals with disabilities; individuals with a language barrier, including individuals who are English learners; and have low levels of literacy; individuals who are members of a racial or ethnic minority groups; and individuals who primarily reside in a rural area.

five community listening sessions[306] with the intended purpose of gaining insight into how to provide broadband access and services to specific groups:

1. Friday, April 15, 2022, 2:30 p.m. to 3:30 p.m. – Intellectual and Development Disabilities service provider group, hosted by the Rural Capacity Stakeholders Group (Virtual)
2. Monday, April 18, 2022, 9 a.m. to 10 a.m. – Maritime and Ports Partners (Virtual)
3. Wednesday, April 20, 2022, 3 p.m. to 5 p.m. – Rural Communities, hosted at the League of Oregon Cities Convention in Hermiston (In Person)
4. Wednesday, April 27, 2022, 8:30 a.m. to 10:30 a.m. – Oregon's Federally Recognized 9 Tribes (Virtual)
5. Wednesday, April 27, 2022, 1 p.m. to 2:30 p.m. – Portland Metro Area Partners and Communities (Virtual)

5.1.2 Meaningful engagement and outreach to diverse stakeholder groups

OBO reached out to a wide range of diverse stakeholder groups that included all covered populations in the Digital Equity NOFO and all underrepresented populations and stakeholder groups identified in the BEAD NOFO. OBO utilized in-person public listening sessions, in-person stakeholder meetings, virtual expert stakeholder sessions, email campaigns, collaboration with the governor's office, social media notifications, and flyers as outreach methods for the development of the BEAD and Digital Equity Plans. Flyers and social media posts were bilingual.

At each engagement OBO facilitated, several strategies were implemented to ensure the attendees had a comprehensive understanding of Oregon's broadband goals. These included a substantive overview of the BEAD and Digital Equity Act programs as well as opportunities throughout the stakeholder engagements for all participants to provide meaningful feedback.

OBO leveraged its existing collaborative relationships with its partners to create an inclusive, diverse list of stakeholders. Entities on the list included organizations representing CAIs (Lake County Library District, OHSU, Chemeketa Community College, and Lane Education Service District), regional governments, health care facilities, internet service providers, broadband industry entities, and many more representing the diverse communities in Oregon. A total of 879 organizations with several contacts were invited to attend OBO's engagements.

The virtual stakeholder meetings that preceded the in-person meetings were targeted to specific stakeholder groups that highlighted the broad range of stakeholder interests and constituents:

- State Broadband Planning Discussions with Governments: Virtual, May 16, 2023, at 1 p.m.

[306] "Oregon Broadband Community Listening Sessions," OBO, https://www.oregon.gov/biz/programs/oregon_broadband_office/pages/oregon_broadband_community_listening_sessions.aspx.

- State Broadband Planning Discussions with Internet Service Providers: Virtual, May 17, 2023, at 10 a.m.
- State Broadband Planning Discussions with Workforce Development Agencies: Virtual, May 17, 2023, at 1 p.m.
- State Broadband Planning Discussions with Digital Equity and Covered Population Serving Organizations: Virtual, May 18, 2023, at 10 a.m.
- State Broadband Planning Discussions with General Sectors: Virtual, May 18, 2023, at 1 p.m.
- State Broadband Planning Discussions with General Sectors (Part 2): Virtual, June 22, 2023, at 9:30 a.m.
- State Broadband Planning Discussions with Governments (Part 2): Virtual, June 29, 2023, at 10 a.m.

Stakeholders had the opportunity to ask questions and provide feedback on broadband challenges, needs, existing partnerships and programs, and potential opportunities specific to their constituents and community. Participants in the stakeholder meetings were asked to complete follow-up surveys that will aid in the development of the BEAD and Digital Equity Plans as well as help share information about upcoming engagements with groups they serve.

At each stage of planning and engagement, Oregon used multiple outreach techniques and a transparent process to ensure its broadband goals have been inclusive and feedback driven.

5.1.3 Multiple awareness and participation mechanisms

OBO sent email invitations to all contacts on the stakeholder list in advance of the stakeholder meetings. OBO offered all stakeholders a date specific to group interests along with another date that provided the opportunity for stakeholders to participate again to go over general questions and concerns not brought up in the targeted sessions.

The public meetings were advertised on the OBO website; on the radio; through paper flyers (for the whole state and region-specific locations) located in libraries, post offices, and at the meeting venues throughout the state; and through additional outreach from stakeholder partners to groups they serve.

In addition to the meetings, stakeholders and the public were able to provide feedback through targeted stakeholder surveys. Links and QR codes to these surveys were provided during meetings and in a post-meeting follow-up email. An online needs assessment, Oregon Internet Accessibility Needs Assessment Survey, was also made available on OBO’s website to enable stakeholder feedback from both expert representatives and the public.

5.1.4 Clear procedures to ensure transparency

OBO took significant steps to ensure compliance with all applicable laws and public involvement best practices to maintain standardized and transparent procedures. The surveys allowed respondents to select which questions to answer, which allowed individuals to control the level of personal detail provided.

A take-home fact sheet was provided at public meetings to participants with calls to action, an overview of how OBO values the stories of participants, and a QR code and link to the online surveys (see Appendix A).

Information was collected from meeting chats, Q&A sessions, and surveys. If contact information was provided, individuals were added to the stakeholder list. The intent to include the participants in future stakeholder outreach was clearly communicated during meetings. After meetings, the slide deck was sent to all participants that provided their contact information.

5.1.5 Outreach and engagement of unserved and underserved communities

In advance of all forums, OBO engaged organizations and organizational representatives serving defined covered populations by ensuring the contact list used for outreach was both comprehensive and inclusive. Contact information was given in the outreach material for interpretation and other accommodation needs for each event.

OBO additionally engaged with unserved and underserved communities by ensuring accessibility to materials, meetings, and information. All advertisements for the public meetings were published in multiple languages (English and Spanish). Several in-person engagements were supported by Spanish and ASL translators, especially in locations whose regions contained more than a 5 percent share of the population that are Spanish speakers. A take-home sheet on the federal Affordable Connectivity Program (ACP) was distributed in the public meetings to provide additional information to help people in low-income households to access the ACP.

The public meetings were hosted at local libraries, community colleges, community centers, and other available venues to facilitate participation at a location that was both accessible and provided vital community support. All locations were accessible and compliant with the Americans with Disabilities Act (ADA) in accordance with federal law. This work with the public libraries and colleges is another example of the strong partnerships that OBO and the state have fostered as part of the engagement process and in striving for universal service more broadly.

5.2 Priorities

Oregon and OBO have been laying the groundwork for the delivery of affordable, reliable broadband internet to every household in Oregon, as noted in Section 3. To that end, Oregon tasked

OBO with 14 statutory duties[307] designed to ensure that Oregon's residents have the best possible service consistent with the demands of affordability and reliability.

The priorities listed below are a subset of OBO's statutory duties and are focused on the overarching goal of this Plan: to connect every resident of Oregon with broadband access. Each of the priorities described below will deliver long-term benefits as Oregon embarks on a journey to universal broadband by connecting every resident to high-speed internet.

Table 11: Priorities for broadband deployment and digital inclusion

Priority	Description
Allocate funds for universal broadband services	Develop effective broadband deployment strategies that utilize available state and federal funds and resources to deliver broadband to every resident of Oregon
Build broadband partnerships	Support and promote local and regional planning while also leveraging partnerships
Conduct outreach and engagement	Continue to reach out to all interested parties via the extensive stakeholder outreach and engagement described in Section 5.1.
Promote digital equity	The goal of promoting digital literacy, equity, and inclusion is addressed in this Plan and will be addressed in greater detail in the forthcoming State Digital Equity Plan.

5.3 Planned activities

OBO's plan for ensuring reliable, affordable broadband access to all residents may include the following activities, among others, that are developed as the state collects more data and stakeholder input.

Table 12: Planned activities

Planned Activity	Description
Award grant funding to potential subrecipient partners to achieve universal	Utilize BEAD funding to award competitive grants to potential ISP partners to construct fiber-to-the-home to unserved and underserved address locations as identified by the FCC data fabric

[307] ORS 285A.166, "Oregon Broadband Office," https://oregon.public.law/statutes/ors_285A.166. See also "Broadband Program Development," OBO, https://www.oregon.gov/biz/programs/Oregon_Broadband_Office/Pages/BroadbandProgramDevelopment.aspx.

Planned Activity	Description
service	and certified by the state's challenge process. This activity will be complemented by the state's previously awarded broadband deployment grants (e.g., using ARPA funding).
Award competitive grants to achieve gigabit connection speeds for community anchor institutions (CAI)	Use remaining BEAD funding, if any, after unserved and underserved address locations are awarded for buildout, for competitive grants to potential ISP partners to supply fiber at gigabit connection speeds to identified CAIs that do not currently have such service today and are certified by the challenge process.

5.4 Key execution strategies

Ensuring universal, affordable, reliable high-speed broadband throughout Oregon requires a comprehensive suite of strategies that starts with outreach and engagement to ensure that local, state, and even national entities are all working together. As OBO develops these strategies and prepares the BEAD Initial Proposal and statewide Digital Equity Plan, it will seek to develop metrics that will enable it to measure success and ensure accountability.

5.4.1 Successfully utilizing partnerships to increase broadband adoption

OBO has been working with relevant entities at all levels to ensure that they are committed to working together towards the goal of universal broadband in Oregon. OBO's approach leverages existing activities as part of its outreach and attempts to engage stakeholders, as described in greater detail in Section 5.1. OBO believes this method of outreach is both effective and cost-efficient.

5.4.2 Eliminating affordability as a barrier to broadband adoption

Oregon's goal is to remove affordability as a barrier to participation in the digital economy or digital experience. The strategies to achieve this goal include:

1. Maximizing, to the extent possible, eligible residents' participation in the federal ACP as well as the federal and Oregon Lifeline programs by working with cities, counties, tribes, ISPs, non-profits, and other entities to support outreach and enrollment programs.

2. Making affordability an important scoring criterion of all state broadband grant programs.

3. Working with ISPs to encourage them to create strategies in the event the ACP is not extended, such that there will be robust and adequate low-cost plans offered at reasonable prices by ISPs to low-income households.

4. Giving additional points in grant program scoring to entities that make a commitment to offer adequate and reasonable low-cost plans for low-income households statewide, not only on newly funded infrastructure.

This affordability effort will be expanded further and analyzed with appropriate data in Oregon's BEAD Initial Plan and the Digital Equity Plan.

5.4.3 Streamlining procedures to increase efficiency

Oregon is a thought leader in procurement innovation as demonstrated by the OregonBuys eProcurement System, described in Section 4. OBO believes the state's innovation in this area will improve the efficiency of the deployment of broadband funding.

5.4.4 Supporting workforce development training to enable deployment with high labor standards

Oregon sees an opportunity to utilize both its high-technology assets and its educational institutions to create opportunities for residents throughout Oregon to participate in broadband deployment. Oregon's unique assets will help the state overcome significant obstacles and barriers, as described in Section 4. High labor standards will ensure that this important work is done well.

5.5 Estimated timeline for universal service

This section presents the state's data-driven model and estimated timeline for the availability of reliable, universal broadband service across Oregon. It reflects the current state and gap assessment documented in Section 3; the potential barriers and obstacles identified in Section 4; and the issues identified through the state's comprehensive stakeholder engagement and outreach efforts.

Long-term implementation is likely to require additional federal and state funding beyond the BEAD grant because the cost estimate for universal service under a universal fiber-to-the-premises model, as noted in further detail in Section 5.6, exceeds NTIA's BEAD allocation. In the interim, the state will plan to use its BEAD allocation of $688,914,932.17 in the most cost-effective manner by using a mix of technologies.[308]

5.5.1 Mapping of served, unserved, and underserved locations

The state's estimated timeline for universal service is based on analysis of the FCC's address Fabric,[309] which found the following:

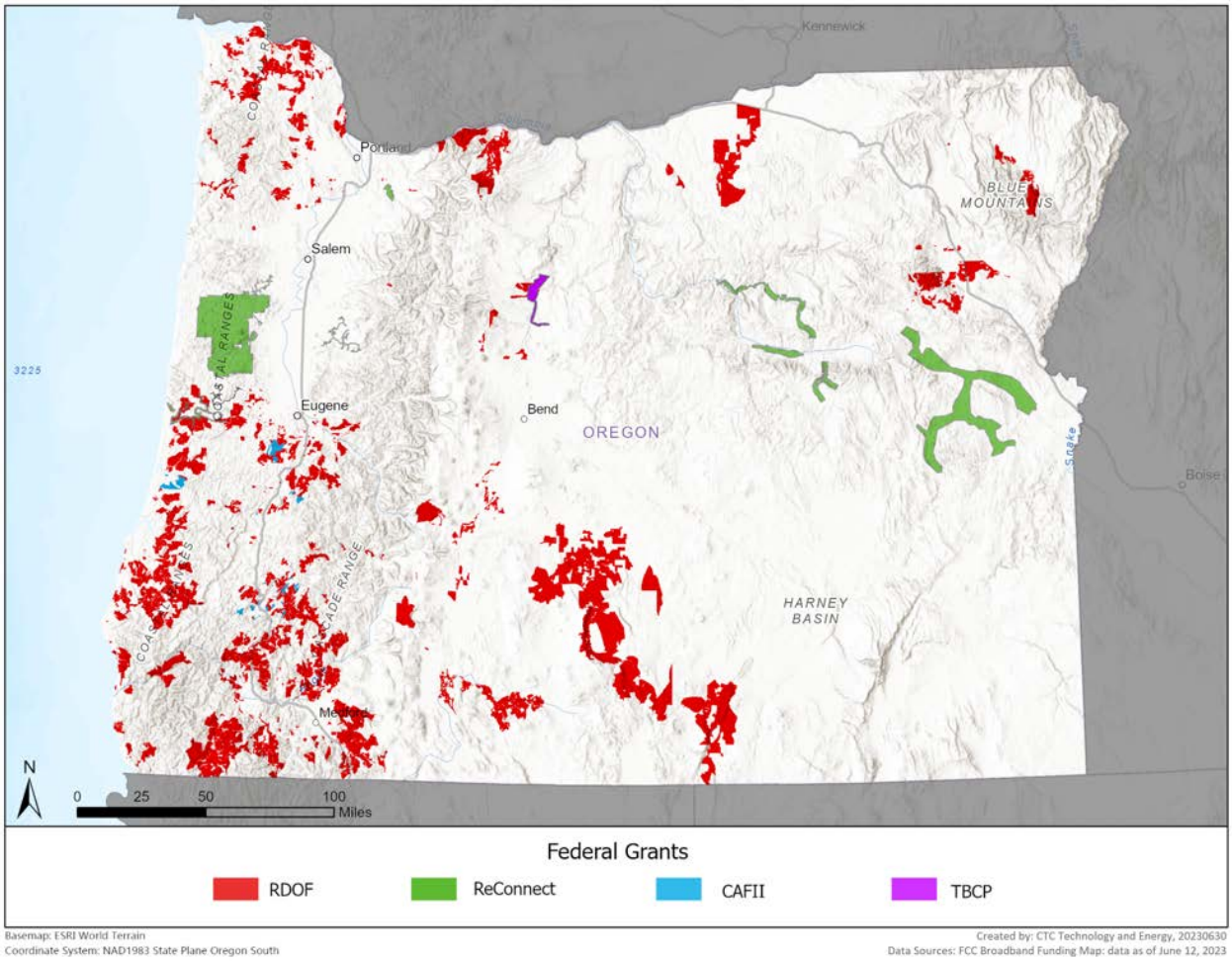
- 92,154 addresses (6.1 percent) are unserved in Oregon
- 52,906 addresses (3.5 percent) are underserved
- 1,357,682 addresses (90.3 percent) are served

[308] "Biden-Harris Administration Announces State Allocations for $42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda," NTIA Press Release, June 26, 2023, https://ntia.gov/press-release/2023/biden-harris-administration-announces-state-allocations-4245-billion-high-speed.

[309] FCC's BDC Version 2 service availability data (dated Dec. 31, 2022; updated May 24, 2023), downloaded May 30, 2023. Consistently with NTIA's instructions, this review also removes grant-funded enforceable commitment locations from the totals.

The served locations include those slated to receive connectivity with federal funding from (and enforceable commitments to) the ReConnect, Rural Digital Opportunity Fund, Connect America Fund Phase II, and Tribal Broadband Connectivity programs, as illustrated in Figure 6.[310]

Figure 6: Locations in Oregon that have received federal grant funding for future broadband deployment



The maps below illustrate Oregon's unserved and underserved locations:

- Figure 7 shows unserved locations per census block
- Figure 8 shows underserved locations per census block
- Figure 9 shows served locations per census block

[310] Federally funded project areas were noted as served or underserved, as appropriate given the funding parameters.

Figure 7: Unserved locations in Oregon

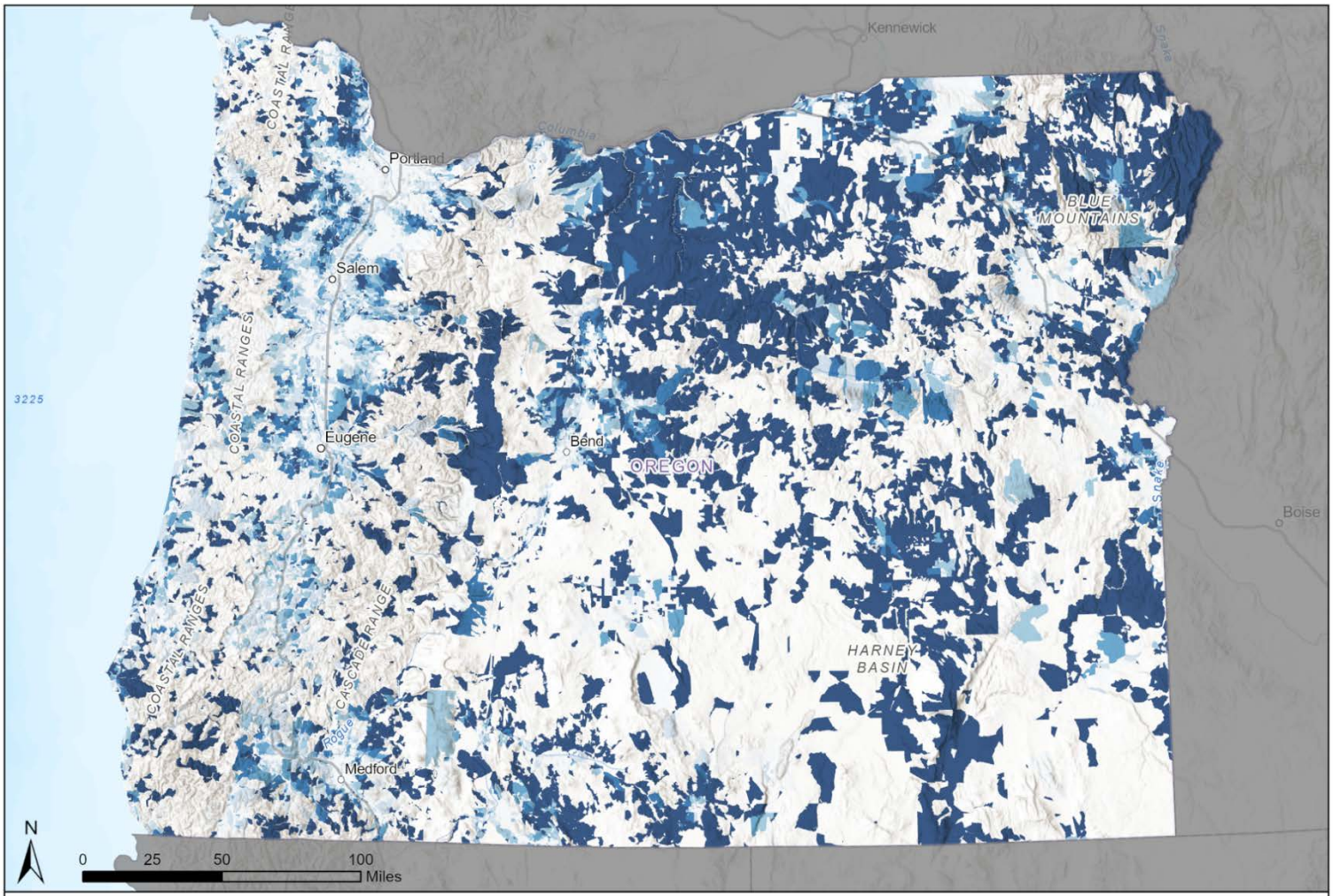


Figure 8: Underserved locations in Oregon

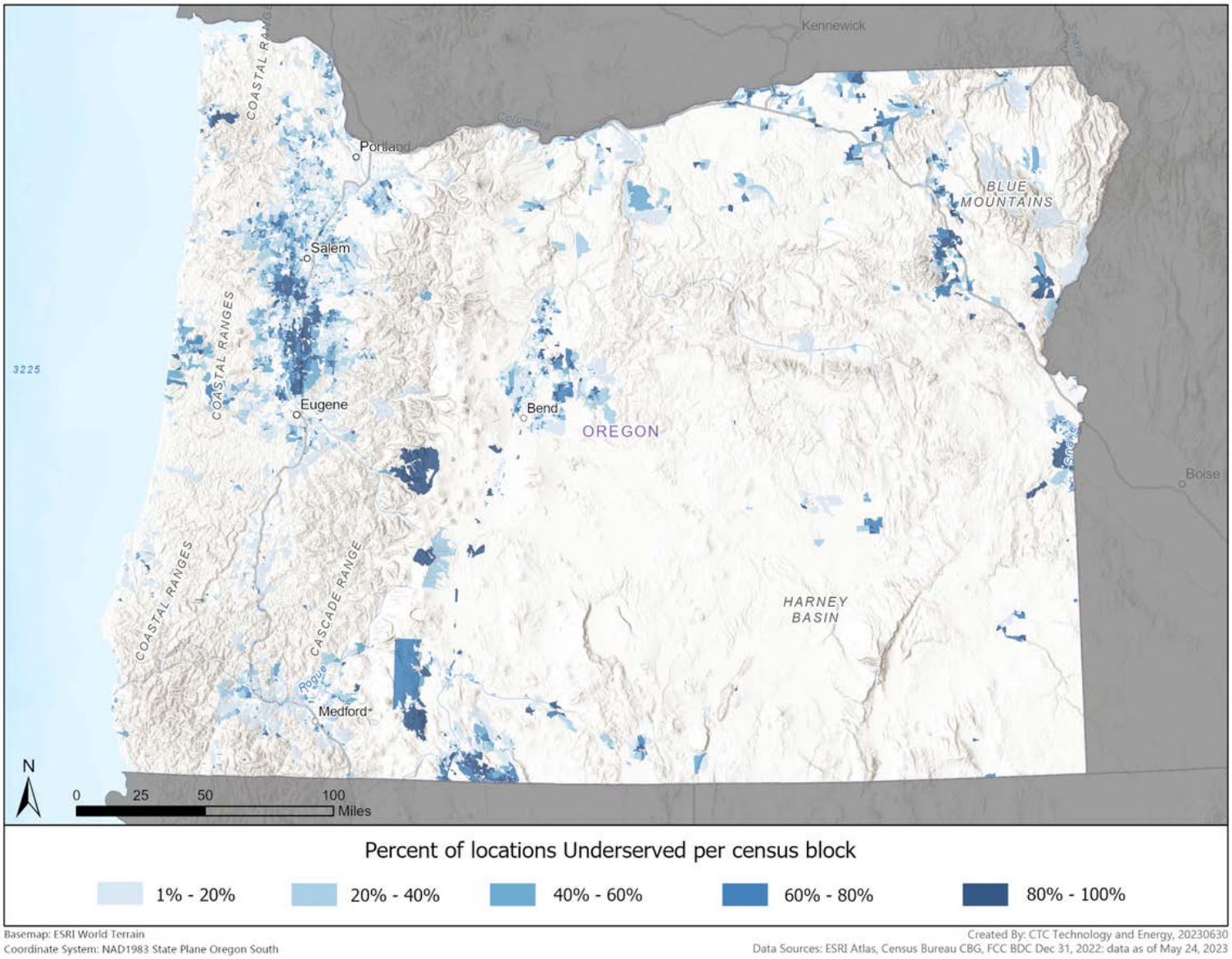
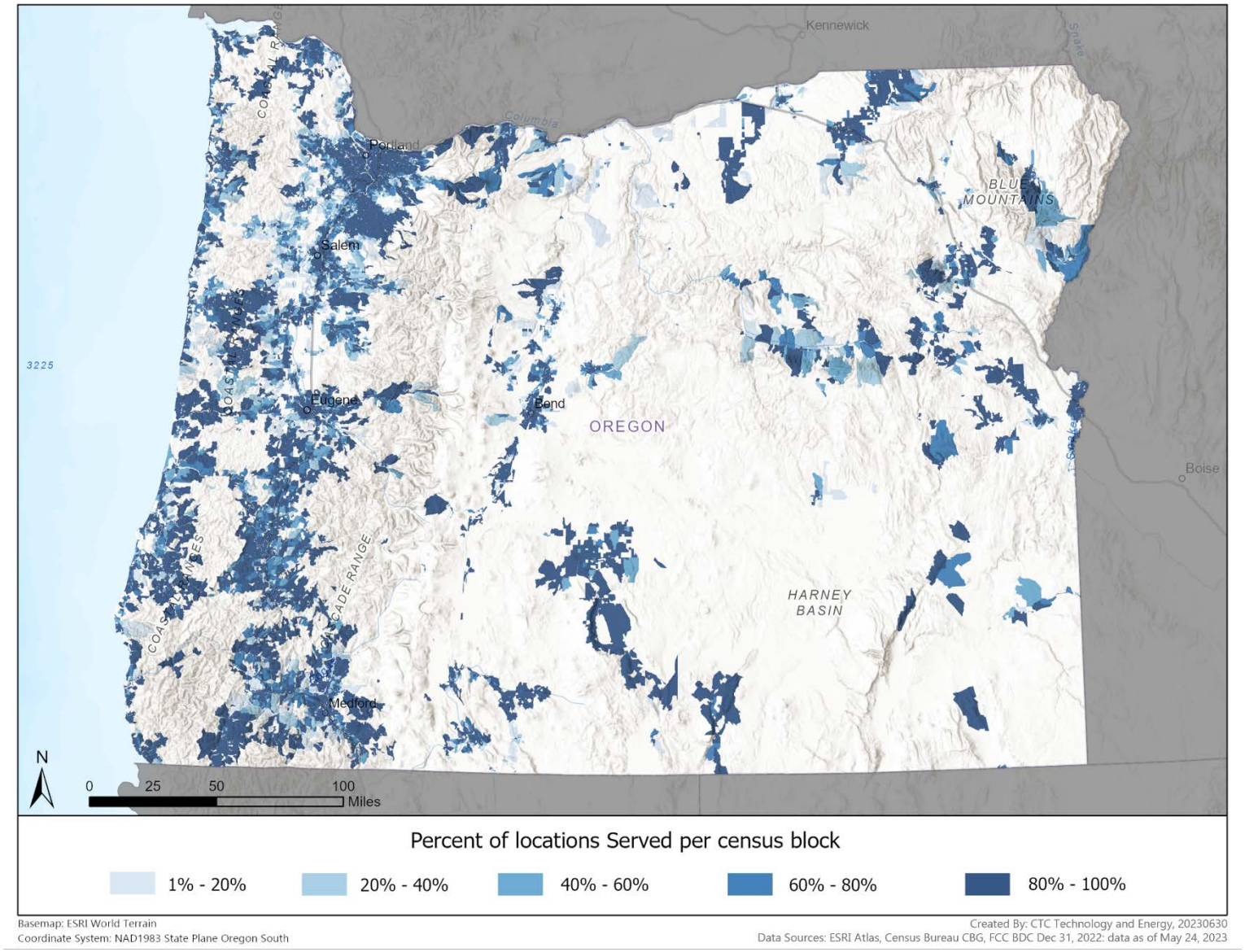


Figure 9: Served locations in Oregon



Oregon's broadband gaps correlate with lower incomes, as illustrated in Figure 10. The largest number of unserved locations are in areas where the median annual household income is in the $35,000 to $50,000 range (nearly 35,000 households) and in the $50,000 to $75,000 range (more than 35,000 households), with a little over 10,000 unserved locations in areas where the average household earns more than $75,000 per year.

Figure 10: Unserved locations per median household income

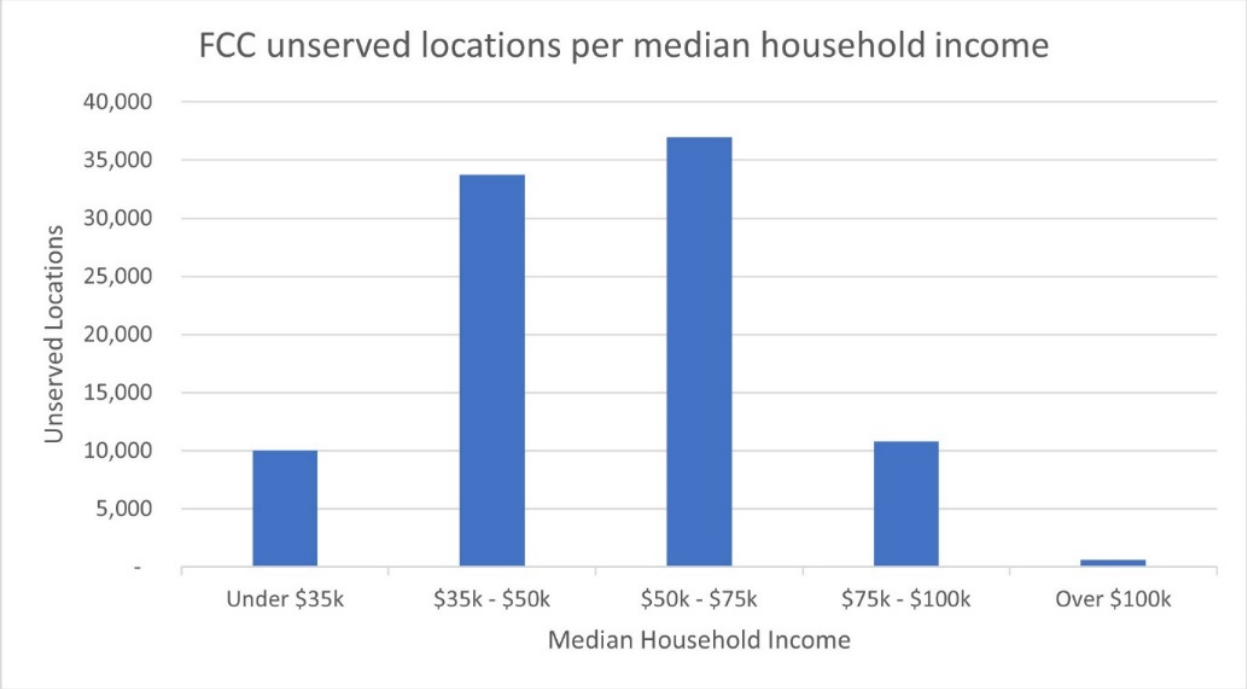
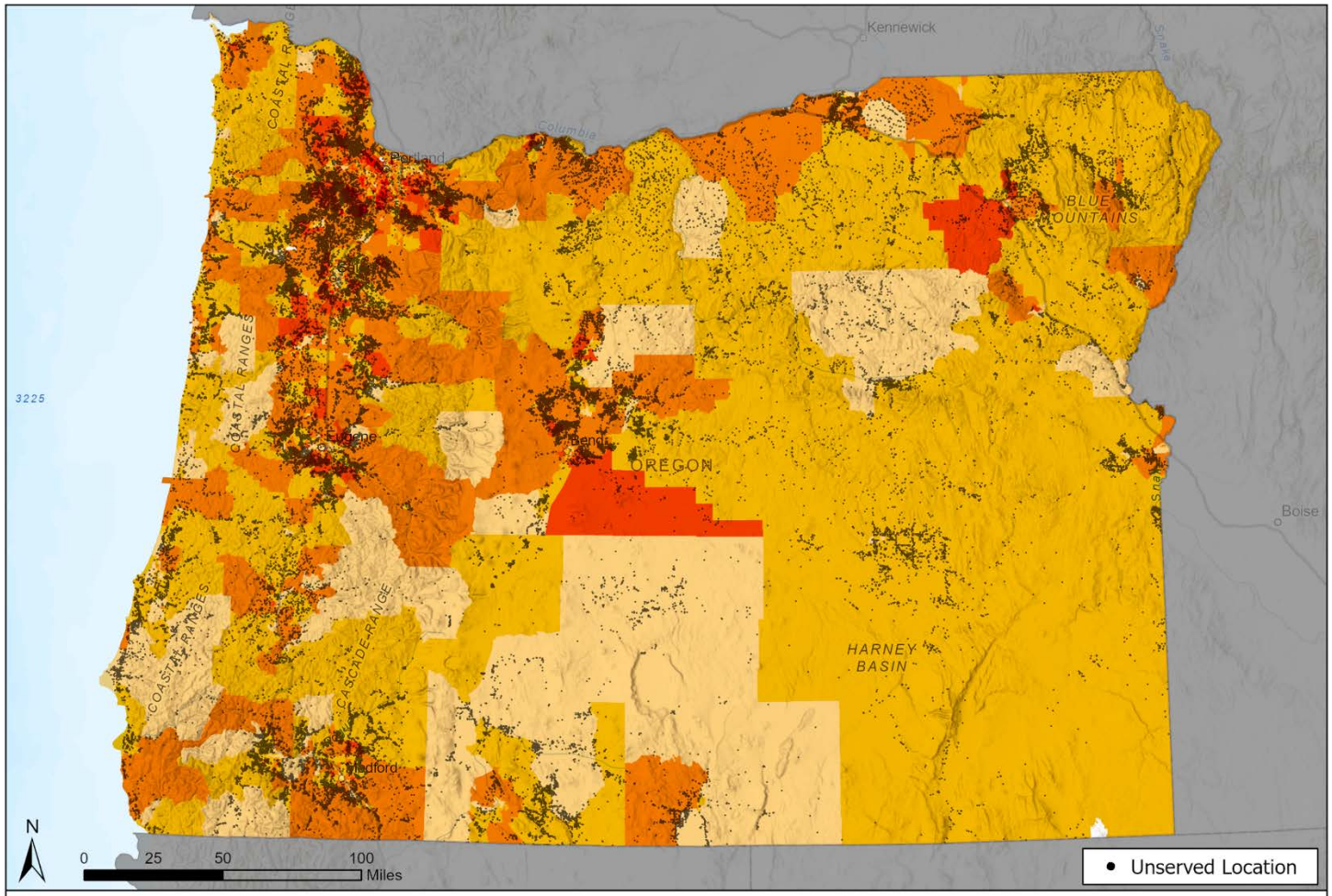


Figure 11 (below) shows median household income per census tract overlaid with unserved locations. The figure highlights that unserved locations tend to be in areas with lower income levels.

Figure 11: Median household income per census tract and unserved locations



5.5.2 Timeline assumptions

As described in the previous section, Oregon estimates that it cannot achieve universal service with BEAD Program funding alone. Oregon estimates that current funding, subject to assumptions described below, will deliver broadband to some all of the unserved and some but not all of the underserved addresses in Oregon.

In general, six to 18 months will be required for planning, design, and permitting of broadband infrastructure projects upon final award. After these steps are complete, construction can begin. Construction may proceed more quickly where fiber is a short "line extension" from an ISP's existing service area to a few adjacent addresses, and where the existing ISP already has an attachment on a nearby utility pole or can use existing underground conduit. Construction will take longer where larger-scale deployment is needed, where geography is challenging, or where Oregon's unique topography, geology and history require extra care and may require a longer permitting time.

5.6 Estimated cost for universal service

This section presents Oregon's estimated costs for providing access to reliable broadband service to unserved and underserved locations in Oregon. These estimates are based on an analytical model that incorporates local labor and material unit costs; the location of existing infrastructure that can be used as a starting point; and surveys of a statistically valid sample of unserved and underserved areas. The estimate further breaks the state into geographic regions analyzing the mileage, average drop length and passings for unserved and unserved addresses in each. Given Oregon's large and diverse geography, some of the last, hardest-to-reach locations may also include fiber builds beyond a traditional last-mile deployment drop length.

OBO estimates a total five-year deployment cost of approximately $2.9 billion (Table 1) to reach the estimated 92,154 unserved addresses via an estimated 23,647 miles of new fiber construction. This estimate assumes a timeframe of 60 months for the buildout of primary fiber-to-the-premises (FTTP) infrastructure passing each unserved home, with deployment activities related to customer activations, including service drop construction and installation of customer premises equipment (CPE), continuing through the five-year period of performance.

Table 13: Estimated fiber deployment costs to reach all unserved addresses[311]

Cost component	Estimated cost
Physical fiber plant construction – FTTP distribution network	$2.6 billion
Core and distribution network electronics	$37 million
Subscriber drop construction	$236.8 million
Customer premises equipment	$28.2 million
Total	**$2.9 billion**

[311] Assuming a five-year performance period.

A more comprehensive plan to address the state's broadband access needs, reaching all unserved and underserved addresses with fiber, would cost an estimated $3.3 billion over a five-year period of performance (Table 2). This estimate includes a total of 26,347 miles of new fiber construction reaching all of the estimated 100,505 unserved locations and 57,647 underserved locations. The new fiber plant construction is estimated to include 71.9 percent underground and 28.1 percent aerial construction using existing poles. In this scenario, the buildout of primary FTTP infrastructure and customer activations extends through the five-year performance period.

Table 14: Estimated deployment costs to reach all unserved and underserved addresses[312]

Cost component	Estimated cost
Physical fiber plant construction – FTTP Distribution Network	$2.9 billion
Core and distribution network electronics	$58.1 million
Subscriber drop construction	$323 million
Customer premises equipment	$44.4 million
Total	**$3.3 billion**

This data shows that the cost to deploy fiber to reach all unserved addresses in Oregon is significantly higher than NTIA's BEAD allocation of $688,914,932.17.[313] However, in its subsequent plans, the state will look to maximize this allocated funding through a mix of technologies to serve as many Oregonians as possible. In addition, the state will have additional expenses for its required BEAD challenge process portal and related mapping that will cut into this allocation.

5.7 Alignment

The vision, goals, and proposed supporting actions within this Five-Year Action Plan are fully aligned with Oregon's priorities of expanding broadband deployment and adoption. As noted below, several state agencies and at several local governments also have plans and initiatives that will complement this Five-Year Action Plan.

This Plan would not be possible without the groundbreaking and pioneering efforts of the following leaders and organizations that demonstrated leadership:

- The entire Oregon Legislature
- Senator Aaron Woods

[312] Assuming a five-year performance period.
[313] "Biden-Harris Administration Announces State Allocations for $42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda," NTIA press release, June 26, 2023, https://ntia.gov/press-release/2023/biden-harris-administration-announces-state-allocations-4245-billion-high-speed.

- Representative Pam Marsh
- Business Oregon's leadership, starting with Sophorn Cheang, Director
- Oregon Broadband Advisory Council (OBAC)
- Public Utility Commission
- Oregon Department of Transportation
- State Library of Oregon
- Oregon Department of Administrative Services
- Oregon Department of Education
- Oregon State University
- Oregon Health Authority

The Oregon Department of Transportation (ODOT) published a "Broadband Strategy & Implementation Plan"[314] in 2022 that supplements this Five-Year Action Plan. ODOT's plan highlights the important role that broadband plays in the Department's plans for technologically advanced transportation—and in the Department's daily operations. It lists three reasons why ODOT needs statewide broadband: 1) to support the future connected transportation environment, 2) to provide high-speed broadband to all ODOT facilities, and 3) to support community goals for high-speed broadband to unserved and underserved communities. ODOT defines broadband as 100 Mbps upload and 100 Mbps download.[315]

A recent report[316] to the Oregon Public Utilities Commission on barriers to broadband access for low-income residents provided several strategic recommendations that also align with this Five-Year Action Plan:

1. "Expand upfront equipment subsidies to support devices offering capabilities that exceed those of the ACP-supported $150 laptop computers;

[314] "ODOT Broadband Strategy & Implementation Plan," ODOT, June 2022, https://www.oregon.gov/odot/Maintenance/Documents/ODOT-Broadband-Strategy%26ImplementationPlan_FINAL_6-3-22.pdf.
[315] "ODOT Broadband Strategy & Implementation Plan," ODOT, June 2022, https://www.oregon.gov/odot/Maintenance/Documents/ODOT-Broadband-Strategy%26ImplementationPlan_FINAL_6-3-22.pdf, p.8.
[316] Lee Selwyn et al., "Report to the Oregon Public Utility Commission on Barriers Faced by Low-Income Consumers and Policy Initiatives for OTAP to Overcome Them," Oregon PUC, May 8, 2023, https://www.oregon.gov/puc/forms/Forms%20and%20Reports/OTAP-HB4092-Report.pdf (linked to from "All PUC Reports & Forms," Oregon PUC, https://www.oregon.gov/puc/forms/Pages/default.aspx).

2. Consider the creation of grant programs to support the deployment of landline and/or fixed wireless services in areas where private sector investment is unlikely to be available; and

3. Provide direct subsidies for the acquisition of CPE required for satellite broadband access to households in remote areas where the costs of deploying landline, and perhaps even fixed wireless, infrastructure are prohibitive.

4. Provide affirmative financial support for the development of training materials, adult education programs, online tutorials and even live help desks to assist newly connected … users, to the extent that such services are not already being offered by service providers themselves."

The City of Portland has a digital equity plan, adopted in 2016, that is described in greater detail in Section 3.3.5 as an asset that will also support this Plan.[317]

5.8 Technical assistance

OBO is in regular contact with our Federal Program Officer to ensure that there is an existing channel of communication.

OBO may seek technical assistance with respect to requirements in the Challenge Process, including specifics with respect to the required online portal and related mapping. OBO would also appreciate additional training for what NTIA is requiring for the challenge process that will be described in the Initial Proposal.

[317] "About the Digital Equity Action Plan," City of Portland, https://www.portland.gov/bps/com-tech/digital-equity/deap/digital-equity-action-plan.

6. Conclusion

This Five-Year Action Plan establishes Oregon's broadband goals and priorities—and presents a comprehensive needs assessment that will inform the state's Initial Proposal.

The state's priorities for broadband deployment (primary objectives) are aligned with the principal focus of the BEAD program:[318]

1. Serving 100 percent of unserved locations (i.e., below 25/3 Mbps)
2. Serving 100 percent of underserved locations (i.e., between 25/3 and 100/20)
3. Delivering gigabit connections to community anchor institutions that do not have that level of service

The state's objectives encompass all 14 statutory purposes of OBO.[319] The state's objectives also encompass the statutory purposes of OBAC.[320]

Oregon will work to ensure that every resident has reliable and affordable access to the internet along with the necessary tools and skills that unlock opportunities for educational advancement, economic success, improved health, and strengthened social ties. This will create more connected, resilient, and prosperous communities.

Oregon's world-class telecommunications infrastructure encompasses subsea cables and landing stations, a premier data center area, fiber optic backbone networks running across the state, and service to most residents of Oregon. But there is still much to do and with this Plan, Oregon takes the first steps in the work ahead.

On behalf of Oregon, one of the more geographically diverse states in the nation, OBO submits this Five-Year Action Plan registering the state's commitment to deliver broadband to all Oregonians.

[318] "NOFO: BEAD Program," NTIA, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf, p.7.
[319] "ORS 285A.166, Section 2," Oregon Revised Statutes, https://oregon.public.law/statutes/ors_285a.166.
[320] See, "ORS 285A.154: Oregon Broadband Advisory Council," Oregon Revised Statutes, https://oregon.public.law/statutes/ors_285a.154; "ORS 285A.157: Oregon Broadband Advisory Council Fund," Oregon Revised Statutes, https://oregon.public.law/statutes/ors_285a.157; ORS 285A.160, "Biennial report," https://oregon.public.law/statutes/ors_285a.160.

Appendix A: Survey instruments

Survey instrument 1: Broadband Equity, Access, and Deployment/Digital Equity Needs Assessment

BEAD/DE Needs Assessment Survey

Hello, my name is ____. I'm calling on behalf of the Oregon Broadband Office. They are seeking your help to improve internet accessibility and affordability throughout the state. The information gathered will not be used to sell you anything and your responses will be kept strictly confidential. We will not ask you for your name or other identifying information.

Even if you do not have home internet service, please answer the relevant questions as your opinions are important to us.

1. [Input the phone number called] ____
2. Are you 18 or older?
    a. Yes
    b. No [ask for someone else in the household who is over 18]
    c. Refuse [thank and terminate]

First, we have a few questions to understand what kinds of internet services you use and subscribe to.

3. Does your household receive home internet service - not mobile data?
    a. Yes
    b. No
4. Does your household purchase home internet service from an internet service provider? [if they answer yes, proceed to Q8. If they answer no, proceed to Q5]
    a. Yes
    b. No
5. We understand that you don't purchase a home internet service. If you access the internet at home in other ways, which of the following about your service at home is correct:
    a. My household uses cellular/mobile connection
    b. My household uses a mobile hotspot, provided to us by a school, library, or other party
    c. My household uses free WiFi in the building or from a neighbor
    d. I don't have any internet service at my home
    e. I don't know
6. What are the main reasons why your household does not purchase home internet service? Please say yes, no, or don't know to the following statements [check only where respondent says yes]

a. I can receive free internet service at home [if yes here, skip to devices Q11]
b. My cellular/mobile connection is sufficient for me
c. I don't need or am not interested in home service
d. I cannot afford it
e. It's not worth the cost
f. I can receive internet service outside my home
g. Home internet service is not available in my area
h. I do not have a computing device, or the device is inadequate or broken
i. Online privacy or cybersecurity is too high a risk
j. I have serious personal safety concerns
k. My household recently moved or is in the process of moving
l. Not applicable
m. Other (please specify) ____

[If only a single reason was picked, skip to Q8]

7. Of the reasons you picked for not purchasing a home internet service, which do you and the members of your household consider to be the most important? [If needed, read reasons that respondent gave; select best match or enter verbatim response if other]

a. I can receive free internet service at home
b. My cellular/mobile connection is sufficient for me
c. I don't need or am not interested in home service
d. I cannot afford it
e. It's not worth the cost
f. I can receive internet service outside my home
g. Home internet service is not available in my area
h. I do not have a computing device, or the device is inadequate or broken
i. Online privacy or cybersecurity is too high a risk
j. I have serious personal safety concerns
k. My household recently moved or is in the process of moving

l. Not applicable

m. Other reason that I listed

8. How reliable is your home internet service? - for example, unreliable service could mean that the service is not available, or experience sudden drops in speed

    a. Not at all reliable

    b. Slightly reliable

    c. Moderately reliable

    d. Very reliable

    e. Extremely reliable

    f. Unsure

9. Are you currently enrolled in the Affordable Connectivity Program, Lifeline, or a subsidy program offered by your Internet Service Provider? [if needed, give the following background dialogue on ACP: The Affordable Connectivity Program is a federal subsidy program providing up to $30 per month for a fixed home internet subscription to qualifying households] - Please indicate with a yes if any of the following apply

    a. Affordable Connectivity Program (ACP)

    b. Lifeline

    c. No subsidy programs

    d. Unsure

    e. Internet Service Provider offered subsidy program _____

10. Please estimate how much you pay per month for your home internet service

    a. $0 - $19

    b. $20 - $39

    c. $40 - $59

    d. $60 - $79

    e. $80 - $99

    f. $100 or more

    g. Unsure

11. Please estimate how much you are willing to pay per month for high-speed, reliable home internet service.
    a. $0 - $19
    b. $20 - $39
    c. $40 - $59
    d. $60 - $79
    e. $80 - $99
    f. $100 or more
    g. Unsure

To use the internet, people need devices like laptops or smartphones. These next questions are about what types of devices you have and how well they work.

12. For each of the following devices, how many does your household use that are in good working condition? Laptop or desktop computer, tablet, smartphone

Computer (laptop or desktop)	
Tablet	
Smartphone	

13. Thinking about the computing device you primarily use, if it were lost or damaged beyond repair, how long do you think it would take you to replace it?
    a. Within a day
    b. Within a week
    c. Within a month
    d. Within 6 months
    e. More than 6 months
    f. I could not do so in the foreseeable future

To make the best use of the internet, people need a range of skills in using computers and navigating websites. This next question is about digital literacy and digital skills.

14. Please rate how confident you or the primary use are in doing the following activities on the internet:

	Not confident	Slightly confident	Very confident	Not applicable
Send and receive emails?				
Use social media?				
Participate in online video, voice, or conference calls (such as Zoom, Skype)				
Operate a small (home-based) business?				
Work remotely or telecommute?				
Search for a job online?				
Take classes or participate in online job training?				
Access medical service or resource?				
Access governmental services (such as DMV, benefits enrollments, etc.)?				
Shop, make travel reservations, or use other online consumer services?				
Access online financial services such as banking and paying bills?				

15. To what extent do you agree or disagree with the following statements about your internet and computer skills?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I can use and adjust privacy settings on social media					
I can identify false or misleading information					

I can recognize and avoid online fraud (or phishing schemes).					

The remaining questions are meant to capture household demographic information. This information will be anonymized so you cannot be individually identified.

16. How many people live in your household, and what are their approximate ages?

Under 18	
18-29	
30-39	
40-49	
50-64	
65+	

17. What is your approximate annual household income? [begin to read answers]
    a. Less than $25,000
    b. $25,000 to $49,999
    c. $50,000 to $74,999
    d. $75,000 to $99,999
    e. $100,000 to $124,999
    f. $125,000 to $149,999
    g. $150,000 to $174,999
    h. $175,000to $199,999
    i. $200,000 or more
    j. Prefer not to answer
18. What races/ethnicities are represented in your household? [Check all that apply, do not read answers]
    a. Black/African American
    b. Asian/Asian American
    c. Hispanic/Latino –
    d. Native American/Indigenous American

e. White
f. Middle Eastern/Arab American
g. Native Hawaiian/Pacific Islander
h. Prefer not to answer

19. Are you or anyone else living in your household a(n): [read and check all that apply]
    a. Veteran
    b. Individual with a disability
    c. Primarily non-English speaking
    d. Formerly incarcerated individual
    e. Actively enrolled in K-12 school or college or other higher education

Survey instrument 2: Oregon Agency Asset Inventory

Oregon Agency Asset Inventory Questionnaire

By completing this short questionnaire, you will help the Oregon Broadband Office (OBO) identify infrastructure-related assets that may facilitate broadband deployment in Oregon. As the State engages with internet service providers (ISPs) to extend their networks and services, this information will support Oregon's goal of optimizing federal Broadband Equity, Access, and Deployment (BEAD) funding to achieve statewide universal access to high-speed broadband.

1. Please provide your contact information

- Agency name
- Government level (state, regional, county, local, tribal)
- Name of jurisdiction
- First and last name
- Title
- Email
- Phone number
- Agency website URL (if any)

2. Does your agency own or manage physical assets (e.g., conduit, fiber, structures, real estate, poles) that are available for lease to ISPs to enable broadband deployment? (Yes/No)
    A. What information about these leasable assets would you like the State to include in its broadband planning and communications with ISPs? [text box]

3. Will your agency oversee capital construction projects between now and 2027 that include opportunities for the placement of communications facilities by your agency, other state or local agencies, regional or local consortia, or ISPs? (Yes/No)
    A. What information about these projects (i.e., scope, location, schedule) would you like included in State broadband planning and in communications with ISPs? [text box]

4. Has your agency analyzed workforce readiness (i.e., the availability of skilled labor) in Oregon as it may impact State broadband policies and deployment goals? (Yes/No)
    A. Please provide a URL link where relevant documents, presentations, or analyses are located or email to [insert email address]. [text box]

5. Does your agency have a role in workforce development that would support wired or wireless broadband deployment (including training and recruitment for equipment technicians, cable installation and repair, and construction jobs)? (Yes/No)
    A. Please describe programs or initiatives that your agency operates or supports or relevant programs operated by other agencies (text box)

6. Are you aware of, or does your agency have reason to track and monitor, frequent or widespread broadband or other communications outages that have significant impact on your community (or, if you represent a statewide organization, on the communities in Oregon)? (Yes/No)

A. If yes, please describe your agency's role in monitoring or tracking communications reliability in your community and discuss the impact of significant outages. [text box]

7. Are you aware of, or is your agency involved in, planning efforts or development of regulations related to reliable and resilient emergency-level broadband or other communications services, especially services for critical facilities in Oregon (e.g., hospitals, schools, evacuation sites, utilities, data centers, public safety locations)? (Yes/No)
    A. Please provide a URL link to any publicly available materials relating to these issues and briefly describe the relevant issues related to critical facilities, including planning for climate and weather-related hazards. You may also email these materials to [insert email address]. [text box]

8. Has your agency developed any policies, regulations, or guidance regarding emergency communications, network redundancy, climate resilience, disaster preparedness, or disaster recovery planning applicable to the broadband and communications industry in Oregon? (Yes/No)
    A. Please provide a URL link to any publicly available documents and briefly describe policies and other materials that you believe would be helpful to Oregon's broadband planning efforts. You may also email these materials to [insert email address]. [text box]

9. Has your agency developed policies or strategic planning documents that will facilitate broadband access efforts in Oregon (e.g., publicly available information that directly addresses digital equity, infrastructure deployment, economic development, network resilience, partnerships, business planning, or other related efforts)? (Yes/No)
    A. Please briefly summarize the material and provide a URL link or email information to [insert email address]. [text box]

10. If applicable, please share information regarding broadband-related planning efforts of other Oregon state and local agencies or contact information for agencies involved in broadband-related planning efforts that you believe would be helpful to OBAC's broadband planning efforts. [text box]

11. Please describe how your agency can collaborate with OBAC and participate in its efforts to achieve statewide universal access to high-speed broadband. [text box]

Survey instrument 3: Community Anchor Institution Broadband Access

Oregon Community Anchor Institution Broadband Access Questionnaire

Community anchor institutions play a critical role in facilitating greater use of broadband by unserved and underserved populations. Your responses to this brief questionnaire will help the Oregon Broadband Office (OBO) identify programs to advance all Oregonians to use broadband to work, learn, receive health care, and participate in civic events. This information will be an important part of Oregon's work toward achieving statewide universal access to high-speed broadband with federal funding through the Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity Act programs.

1. Contact Information

- Your name
- Your job title
- Your e-mail
- Your phone number
- Organization name
- Organization address
- Organization website URL
- Organization's number of employees
- Please indicate if your organization serves statewide, regionally, or locally

2. Choose the option that best describes your organization (Select the one that best applies)

a. K-12 school

b. Higher education entity

c. Library

d. Health clinic, health center, hospital, or other medical provider

e. Public safety entity

f. Public housing organization (including HUD-assisted housing and Tribal housing organizations)

g. Neighborhood organization or community center

h. Faith-based organization

i. Community support organization that facilitates use of broadband service by low-income or other underserved populations

3. Which of the following programs or services do you offer to facilitate the use of broadband services by your constituents or clients? (Select all that apply)
   a. Support for applicants to broadband subsidy programs such as the Affordable Connectivity Program (ACP)
   b. Lifeline
   c. Loans or donations of devices (computers, tablets) to access the internet
   d. Hotspots and free or subsidized internet access
   e. Cybersecurity training
   f. Other digital skills or digital literacy training
   g. Training, equipment, subsidized services, or other resources to facilitate access to telehealth and telemedicine services
   h. Training teachers in broadband skills and digital literacy
   i. Developing and distributing accessible online content or devices designed for use by persons with disabilities
   j. Developing and distributing accessible online content directed at populations with specific needs, such as seniors, low-income residents, those with low-literacy, and those whose first language is not English
   k. Broadband internet access services at community centers or other gathering spaces used by clients and constituents
   l. Funding of programs that provide any of the above programs, including broadband infrastructure, devices, and subsidies to support affordability
   m. Program development and planning of broadband-related services
   n. Advocacy for digital inclusion, affordability, and the broadband-related needs of vulnerable populations
   o. Emergency and disaster relief services such as evacuation centers, charging stations, replacement equipment, and information on grants, loans, and services to those impacted by disasters
   p. Other (please specify)
   q. My organization does not offer programs that facilitate the use of broadband services

4. Is your organization located on Tribal land, affiliated with a Tribal or Native entity, or primarily serving Tribal or Native populations? (Yes/No)

5. Does your organization conduct outreach or tailor its broadband-related services to the needs of any of the following communities or groups? (Select all that apply)
   a. Veterans or current military personnel
   b. People with disabilities
   c. Seniors
   d. Incarcerated or formerly incarcerated residents
   e. Those in low-income households or without reliable housing
   f. Those with a language barrier including English learners
   g. Those with a low level of literacy
   h. Specific racial or ethnic minority group(s)
   i. Those living in rural communities
   j. Other (please specify)
   k. Not applicable

6. Based on your organization's observations and experience, please describe the barriers and obstacles (e.g., affordability, lack of digital literacy, language barriers) that prevent members of the communities your organization serves, including Tribal and Native populations, from accessing or using broadband internet services.

7. Do all of your organization's locations, offices, or community centers have access to broadband internet services at speeds of at least 1 Gigabit per second (Gbps) symmetrical (both upload and download)? (Yes/No/Don't Know)
   A. If no, please provide the addresses of the locations where your organization does not have access to broadband internet services of at least 1 Gbps symmetrical.

8. If your organization does not have access to, or does not purchase, service with symmetrical speeds of at least 1 Gbps, please describe why. (Select all that apply)
    a. Service is unavailable
    b. Service is unreliable
    c. Service is too expensive
    d. Customer service is inadequate
    e. Our operations do not require Gigabit-level services
    f. I do not know if 1 Gbps service is available to my location
    g. Other. Please specify:

9. Does your current internet service meet the needs of your organization to deliver broadband-related programs to your clients and constituents?
    a. Yes
    b. No, service is too slow
    c. No, service is unreliable
    d. No, service is too expensive
    e. No, customer service is inadequate
    f. No, service is too complicated to set up and/or maintain
    g. No, redundant connectivity necessary for our operations is too expensive/unavailable
    h. Other (please specify)

10. How essential is symmetrical Gigabit connectivity at your facilities to your ability to deliver your broadband-related services?

Not important				*Critically important*
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

11. Does your organization provide access to broadband internet services to clients, constituents, or visitors at each of your locations? (Yes/No)
    - If yes, does your broadband internet service provide sufficient capacity to accommodate peak demand for such services at all of your locations? If no, is a lack of access to adequate broadband internet services at your location preventing you from serving users? [text box]

12. Is it critical to your organization's mission and service delivery to maintain communications with **critical facilities** such as hospitals, schools, data centers, and public safety agencies during natural disasters and emergencies? (Yes/No)
    A. If yes, please briefly describe your organization's need to remain connected to critical facilities and whether you believe your organization's current communications services meet this need. (text box)

13. Has your organization been consulted on disaster planning, emergency communications, or disaster recovery by your communications service provider or a local/regional government agency? (Yes/No)
    A. If yes, please briefly describe any plans or reports you think would be useful to the State's broadband and emergency communications planning efforts. (text box)

14. If your organization operates or sponsors any workforce development or training programs in the fields of telecommunications or technology, select all that apply:
    a. We do not sponsor or operate these programs
    b. Mentorships
    c. Certification programs

d. Registered apprenticeships
e. Unregistered apprenticeships
f. Pre-apprenticeships
g. Internships
h. Digital literacy trainings for specific employment opportunities
i. Job placement and recruitment services
j. Sponsorships/scholarships for third-party training and classes
k. Other. Please specify:

15. Would your organization offer additional broadband-related services or programs to its constituents or clients if it had additional resources? (Yes/No)
    A. If yes, please describe those additional broadband-related services and the additional resources your organization would need to offer them (e.g., funding, skilled workforce, access to broadband internet services with faster speeds or more capacity).

16. Please describe how your organization can collaborate with The Oregon Broadband Office and participate in its efforts to achieve statewide universal access to high-speed broadband.

Survey instrument 4: Internet Service Provider Engagement

Internet Service Provider Engagement Questionnaire

The Oregon Broadband Office (OBO) seeks your input on a range of broadband-related issues. Your responses to this brief questionnaire will be an important part of Oregon's work toward achieving statewide universal access to high-speed broadband with federal funding through the Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity Planning programs.

1. Contact Information

- Your name
- Your job title
- Your e-mail
- Your phone number
- Organization name
- Organization address
- Organization website URL
- Organization's number of employees (number)

2. Choose the option that best describes your organization and the services it offers:

Internet service provider (ISP)

a. Telephone company or cooperative
b. Cable company
c. Fiber internet provider
d. Municipal provider
e. Electric / utility provider
f. Wireless internet service provider (WISP) / fixed wireless access provider
g. Mobile internet provider
h. Satellite internet provider

Other provider

i. Middle-mile provider

j. Construction company
k. Internet equipment provider
l. Data center operator
m. Cloud services provider
n. Engineering and design services

3. What recruitment and hiring sources does your organization use to hire technicians, lineworkers, engineers, construction laborers and managers, and similar positions? (Select all that apply)
   a. Internet-based employment posting sites
   b. Workforce development and community job placement centers
   c. Communications industry-specific training classes
   d. Third-party hiring and recruitment firms
   e. Advertisements in trade association publications and websites
   f. Incentivizing employee referrals
4. Does your organization offer, sponsor, or participate in any workforce development or apprenticeship programs? (Yes/No)
5. If you answered yes to Q.4, please specify the type of programs. (select all that apply)
   a. Mentorship
   b. Certification programs
   c. Apprenticeship
   d. Internship
   e. Sponsorships/scholarships for third-party training and classes
   f. Other (please describe) [text box]

6. How would you propose to work with Oregon on workforce development issues related to broadband deployment, including programs to support diversity among your organization's employees? (Text box reply)
7. Does your organization participate in the Affordable Connectivity Program (ACP)? (Yes/No)
8. What is the monthly post-subsidy price of your lowest-price ACP-eligible tier for participating subscribers?
    a. $0
    b. $1 - $10
    c. $11 - $20
    d. $21 - $30
    e. More than $30
9. What is the speed of your lowest-price ACP-eligible tier?
    a. 25/3 Mbps
    b. Up to 50/5 Mbps
    c. Up to 100/20 Mbps
    d. Greater than 100/20 Mbps but less than 100/100 Mbps
    e. 100/100 Mbps or more
10. How do you advertise or promote your participation in the ACP? (text box)
11. Does your organization offer other programs for low-income customers? (Yes/No)

A. Please provide service speeds, monthly pricing, and a description of your low-income or discounted offerings. (text box reply)

12. Does your organization have programs to support consumer broadband skills or use of the internet? (Yes/No)

A. If yes, please describe and provide URL links to relevant materials. (text box reply)

13. Does your organization have programs to support internet adoption? (Yes/No)

A. If yes, please describe and provide URL links to relevant materials. (text box reply)

14. Please describe how your organization can collaborate with local communities on efforts to close the digital divide and, if applicable, please provide specific examples where you have done this successfully. (text box reply)

15. What strategies has your organization used to deploy broadband in the areas of Oregon that are most expensive to serve? (text box reply)

16. Please discuss your continuity and disaster recovery plans in the event of a natural disaster or human error, such as a fiber cut, and whether any of your plans target specific geographic areas. (text box reply)

Survey instrument 5: Digital Equity Program Inventory

Digital Equity Program Inventory

Introduction

Hello! Your responses to this brief questionnaire will help the Oregon Broadband Office (OBO) identify current and active programs that provide community members the skills and tools to participate in broadband-related and Digital Equity opportunities that supports community development goals.

This information will be an important part of Oregon's work toward achieving statewide universal access to high-speed broadband with federal funding through the Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity ACT programs.

1. Which category best describes your organization? Please select all that apply
   - ❑ Public Schools
   - ❑ Community colleges and institutions of higher education
   - ❑ Libraries
   - ❑ Medical and health care providers
   - ❑ State government
   - ❑ County government
   - ❑ Municipal government
   - ❑ Council of governments (COG) or regional authority
   - ❑ Tribal governments
   - ❑ Public housing authorities
   - ❑ Civil rights organizations
   - ❑ Workforce development and adult literacy organizations
   - ❑ Internet Service Provider (ISP)
   - ❑ Nonprofit organization that represents persons with disabilities
   - ❑ Nonprofit organization that represents veterans
   - ❑ Nonprofit organization that represents aging individuals
   - ❑ Nonprofit organization that represents incarcerated or formerly incarcerated individuals
   - ❑ Nonprofit organization that represents English learners

2. Has your organization created a broadband and/or digital equity plan?
    - Yes (Include Text Box)
    - No

3. Is your organization part of a broadband coalition?
    - Yes (If yes, list the coalitions involved) (Include Text Box)
    - No

4. Please provide the information for a point of contact in your organization

Name

Organization name

Address

Address 2

City/Town

State/Province

ZIP/Postal Code

Email Address

Phone Number

Program Details

Digital equity programs aim to ensure that communities have the skills, technology, and capacity to fully engage in the digital economy. Certain programs may target priority populations which include low-income households, seniors, veterans, people with disabilities, incarcerated, English learners, ethnic minorities, and people in rural areas. Examples of digital equity programs include those that promote computer skills, internet access, and computing device access.

5. Does your organization offer digital equity programs? (If no, skip to question 38)
   - ○ Yes
   - ○ No

6. What is the name of the program?

   Program Name

7. *What aspects of digital equity does the program address? Please select at least one.
   - ❑ Availability and affordability of internet

- ❑ Digital literacy
- ❑ Cybersecurity
- ❑ Devices and technical support
- ❑ Online accessibility and inclusivity

8. Does the program focus on certain populations? Check all that apply.
    - ❑ Individuals with disabilities
    - ❑ Veterans
    - ❑ Aging individuals (60 and above)
    - ❑ Incarcerated individuals
    - ❑ Individuals with a language barrier, including individuals who are English learners; and have low levels of literacy
    - ❑ Individuals who primarily reside in a rural area
    - ❑ Individuals who are members of a racial or ethnic minority group
    - ❑ Individuals who live in a covered household (household income is lower than 150% of the poverty level)
    - ❑ No particular focus on a population
    - ❑ Other (please specify)

9. What is the program budget?
    - ○ $1 to $24,999
    - ○ $25,000 to $49,999
    - ○ $50,000 to $99,999
    - ○ $100,000 to $249,999
    - ○ $250,000 to $499,999
    - ○ Over $500,000

10. How much does the program cost the participant?

Cost in dollars:

11. Please give us a sense of the geography you serve.
    - ○ State-wide

- County-wide
- City-wide
- Neighborhood-wide
- Other (please specify)

12. How long has the program been active, in months?

    Program length in months:

13. How many people were served by the program in the last fiscal year?
    - Under 25 people
    - 26 to 50 people
    - 51 to 100 people
    - More than 100 people

14. How many users do you expect to serve over the life of the program?
    - 1 to 50
    - 51 to 100 people
    - 101 to 250 people
    - 251 to 500 people
    - More than 500 people

15. If you had the resources, would you want to scale the project to serve more communities and people?
    - Yes
    - No

16. Does your organization have another digital equity program? (If no, skip to question 39)
    - Yes
    - No

[NEXT PROGRAM]

17. What is the name of the program? _____

18. *What aspects of digital equity does the program address? Please select at least one.
    - ❑ Availability and affordability of internet

- ❑ Digital literacy
- ❑ Cybersecurity
- ❑ Devices and technical support
- ❑ Online accessibility and inclusivity

19. Does the program focus on certain populations? Check all that apply.

- ❑ Individuals with disabilities
- ❑ Veterans
- ❑ Aging individuals (60 and above)
- ❑ Incarcerated individuals
- ❑ Individuals with a language barrier, including individuals who are English learners; and have low levels of literacy
- ❑ Individuals who primarily reside in a rural area
- ❑ Individuals who are members of a racial or ethnic minority group
- ❑ Individuals who live in a covered household (household income is lower than 150% of the poverty level)
- ❑ No particular focus on a population
- ❑ Other (please specify)

20. What is the program budget?

- ○ $1 to $24,999
- ○ $25,000 to $49,999
- ○ $50,000 to $99,999
- ○ $100,000 to $249,999
- ○ $250,000 to $499,999
- ○ Over $500,000

21. How much does the program cost the participant?

Cost in dollars:

22. Please give us a sense of the geography you serve.

- ○ State-wide
- ○ County-wide

- City-wide
- Neighborhood-wide
- Other (please specify)

23. How long has the program been active, in months?

Program length in months: [ ]

24. How many people were served by the program in the last fiscal year?

- Under 25 people
- 26 to 50 people
- 51 to 100 people
- More than 100 people

25. How many users do you expect to serve over the life of the program?

- 1 to 50
- 51 to 100 people
- 101 to 250 people
- 251 to 500 people
- More than 500 people

26. If you had the resources, would you want to scale the project to serve more communities and people?

- Yes
- No

27. Does your organization have another digital equity program? (If no, skip to question 39)

- Yes
- No

[NEXT PROGRAM]

28. What is the name of the program?

Program Name [ ]

29. *What aspects of digital equity does the program address? Please select at least one.

- ❑ Availability and affordability of internet

- ❑ Digital literacy
- ❑ Cybersecurity
- ❑ Devices and technical support
- ❑ Online accessibility and inclusivity

30. Does the program focus on certain populations? Check all that apply.

- ❑ Individuals with disabilities
- ❑ Veterans
- ❑ Aging individuals (60 and above)
- ❑ Incarcerated individuals
- ❑ Individuals with a language barrier, including individuals who are English learners; and have low levels of literacy
- ❑ Individuals who primarily reside in a rural area
- ❑ Individuals who are members of a racial or ethnic minority group
- ❑ Individuals who live in a covered household (household income is lower than 150% of the poverty level)
- ❑ No particular focus on a population
- ❑ Other (please specify)

31. What is the program budget?

- ○ $1 to $24,999
- ○ $25,000 to $49,999
- ○ $50,000 to $99,999
- ○ $100,000 to $249,999
- ○ $250,000 to $499,999
- ○ Over $500,000

32. How much does the program cost the participant?

Cost in dollars:

33. Please give us a sense of the geography you serve.

- ○ State-wide
- ○ County-wide

- City-wide
- Neighborhood-wide
- Other (please specify)

34. How long has the program been active, in months?

    Program length in months:

35. How many people were served by the program in the last fiscal year?
    - Under 25 people
    - 26 to 50 people
    - 51 to 100 people
    - More than 100 people

36. How many users do you expect to serve over the life of the program?
    - 1 to 50
    - 51 to 100 people
    - 101 to 250 people
    - 251 to 500 people
    - More than 500 people

37. If you had the resources, would you want to scale the project to serve more communities and people?
    - Yes
    - No

Planned Programs

38. Is your organization in the process of developing a digital equity program?
    - Yes
    - No

39. What kind of digital equity program(s) is your organization developing? Please select the categories that best fit the program type.
    - ❑ Digital skills and literacy
    - ❑ Data privacy and cybersecurity

- ❑ Devices (laptops, computers, tablets)
- ❑ Technical support
- ❑ Digital navigators
- ❑ Broadband access
- ❑ Creating accessible and inclusive internet content
- ❑ Other (please specify) [text box]

40. Does your organization want to develop a digital equity program?
    - ○ Yes
    - ○ No
41. What kind of digital equity program(s) is your organization interested in developing? Please select the categories that best fit the program type.
    - ❑ Digital skills and literacy
    - ❑ Data privacy and cybersecurity
    - ❑ Devices (laptops, computers, tablets)
    - ❑ Technical support
    - ❑ Digital navigators
    - ❑ Broadband access
    - ❑ Creating accessible and inclusive internet content

Programmatic Impact of Broadband Access

42. Please describe how access to affordable, reliable, and secure high-speed broadband by the communities that you serve may impact programmatic outcomes of your organization? [text box]

43. Do you have metrics to measure progress on your programmatic outcomes? (yes/no)

    a. If yes, please describe or provide a URL link with documentation. [text box]

Please provide examples or a discussion of metrics that you believe would be useful to track broadband-related inputs and outcomes for areas that are relevant to your mission, programs, and services:

44. Economic and workforce development outcomes – input and outcome metrics [text box]

45. Educational outcomes – input and outcome metrics [text box]

46. Health outcomes – input and outcome metrics [text box]

47. Civic and social engagement outcomes – input and outcome metrics [text box]

48. Delivery of other essential services outcomes – input and outcome metrics [text box]

Survey instrument 6: Covered Populations Broadband Barriers Analysis

Oregon Covered Populations Broadband Barriers Analysis Questionnaire

Organizations that serve or represent unserved and underserved populations have a critical role in shedding light on the unique barriers such populations face, and how their unique needs can best be addressed. Your responses to this brief questionnaire will help the Oregon Broadband Office (OBO) identify opportunities for programs to advance vulnerable residents' full participation in broadband-related opportunities to work, learn, receive health care, and participate in civic events. This information will be an important part of Oregon's work toward achieving statewide universal access to high-speed broadband with federal funding through the Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity Act Planning programs.

1. Contact Information

- Your name
- Your job title
- Your e-mail
- Your phone number
- Organization name
- Organization address
- Organization website URL
- Organization's number of employees (number)

2. Does your organization provide programs and services that are primarily targeted to any of the following communities? (Select all that apply)

- Individuals with disabilities
- Veterans or current military personnel
- Aging individuals
- Incarcerated or formally incarcerated individuals
- Individuals with low levels of literacy
- Individuals with a language barrier
- Individuals who primarily reside in a rural area
- Individuals who are members of a racial or ethnic minority group

- No particular focus on a population or community
- Other (please specify)

Internet Service

3. Please indicate your agreement or disagreement with the following statements describing individuals from the population(s) you serve or represent. On a scale of 1 – 5, where 1 is "strongly agree" and 5 is "strongly disagree" as represented on this spectrum:

	1	2	3	4	5
Their households have access to some type of home internet service.					
The available internet service is high-speed, sufficient for their needs, and reliable.					
The available internet service is affordable.					
Their households can choose from among more than one provider for high-speed, reliable, and affordable broadband service					

4. Are there any unique barriers to reliable, affordable, and high-speed internet service for the population(s) you serve? (Yes/No)

   Please describe these barriers to accessing reliable, affordable, and high-speed internet service:

Access to Computers

5. Please indicate your agreement or disagreement with the following statements describing households from the population you serve or represent. On a scale of 1 – 5, where 1 is "strongly agree" and 5 is "strongly disagree" as represented on this spectrum:

	1	2	3	4	5
There are computers in the households of the populations we serve or represent					
The households can troubleshoot computer issues					

The households can afford computer repairs or service					
The households have enough devices to serve their needs					
There are public computers that are convenient to use and close by to these households					

6. Are there any unique barriers to accessing home computers for the population(s) you serve? (Yes/No)

   Please describe these barriers to accessing computers and similar devices:

Digital Literacy and Digital Skills

7. Please indicate your agreement or disagreement with the following statements describing individuals from the population you serve or represent. On a scale of 1 – 5, where 1 is "strongly agree" and 5 is "strongly disagree" as represented on this spectrum:

	1	2	3	4	5
Individuals can find, understand, evaluate, create, and communicate digital information					
Individuals can use technologies appropriately and effectively to retrieve information, interpret results, and judge the quality of that information					
Individuals can use the internet to support education, employment, health, and personal needs					
Individuals have access to convenient and comprehensive digital literacy training					

8. Are there any unique barriers to acquiring or learning digital skills for the population(s) you serve? (Yes/No)

   Please describe these barriers to acquiring necessary digital skills:

Inclusive and Accessible Content

9. Please indicate your agreement or disagreement with the following statements describing individuals from the population you serve or represent. On a scale of 1 – 5, where 1 is "strongly agree" and 5 is "strongly disagree" as represented on this spectrum:

	1	2	3	4	5
Individuals have access to meaningful website content that is written in plain language and is appropriate for the targeted user or audience					
Individuals have access to meaningful website content that is accurately translated into necessary languages					
Individuals have access to meaningful website content that can be read by a screen reader					
Individuals have access to meaningful website content with closed captioning					
Individuals have access to adequate and appropriate assistive technologies to support access to the internet and use of website content by people with disabilities					

10. Are there any unique barriers to inclusive and accessible content for the population(s) you serve? (Yes/No)

    Please describe these barriers to inclusive and accessible content:

Data Privacy and Cyber Security

11. Please indicate your agreement or disagreement with the following statements describing individuals from the population you serve or represent. On a scale of 1 – 5, where 1 is
    strongly agree" and 5 is "strongly disagree" as represented on this spectrum:

	1	2	3	4	5
Individuals know how to protect their information online					
Individuals can recognize a phishing scam or other types of scams and illegal activity					
Individuals use anti-virus and anti-malware software on their computers					

12. Are there any unique barriers to data privacy and cyber security for the population(s) you serve? (Yes/No)

Please describe these barriers to acquiring knowledge in data privacy and cyber security literacy:

Initiatives to Address Barriers

Thinking about the unique barriers you discussed

13. What types of programs and initiatives would you recommend addressing these barriers?

14. Does your organization currently offer any of these types of programs or initiatives? (Yes/No)
    a. If yes, please describe if you are interested in expanding your programs and, if so, what types of resources would you need to expand

15. Would your organization be interested in adding new programs to its current portfolio? (Yes/No)
    b. If yes, what types of resources do you believe would be necessary to add new programs to your current portfolio?

Programmatic Impact of Broadband Access

16. Please describe how access to affordable, reliable, and secure high-speed broadband by the communities that you serve may impact the programmatic outcomes of your organization. [text box]

17. Do you have metrics to measure progress on your programmatic outcomes? (yes/no)

    c. If yes, please describe [text box]

Please provide examples or a discussion of metrics that you believe would be useful to track broadband-related inputs and outcomes that are relevant to your mission, programs, and services, such as:

18. Economic and workforce development outcomes – input and outcome metrics

19. Educational outcomes – input and outcome metrics

20. Health outcomes – input and outcome metrics

21. Civic and social engagement outcomes – input and outcome metrics

22. Delivery of other essential services outcomes – input and outcome metrics

Survey instrument 7: Oregon Workforce Development Opportunity

Oregon Workforce Development Opportunity Questionnaire

Broadband infrastructure deployment and network operations require a highly skilled workforce. Your responses to this brief questionnaire will help the Oregon Broadband Office (OBO) identify opportunities for workforce training and readiness programs to prepare residents for new job opportunities in this field. This information will be an important part of Oregon's work toward achieving statewide universal access to high-speed broadband with federal funding through the Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity Act Planning programs.

1. Contact Information

- Your name
- Your job title
- Your e-mail
- Your phone number
- Organization name
- Organization address
- Organization website URL

2. Type of organization (one selection only)

1. Internet service provider (ISP) (Skip to Questions 14-18)
2. Labor union
3. Trade association
4. Industry certification or standards body
5. Government agency (state, county, local, tribal, or regional consortia)
6. Economic development association or agency
7. Regional or local workforce development board or agency
8. K-12 education (private, charter, public)
9. Higher education organization (all levels, public or private)
10. Trade, technical or vocational school (public, nonprofit, or for-profit)
11. Community based or nonprofit organization

3. **Do you offer workforce development programs for job placement and training in the communications industry in Oregon? (Yes/No) (If Yes, skip Q5; if no, end survey after Q5)**

4. **Do you offer training in any of the following industries that have transferable skills that can be applied to communications network deployment? (Select all that apply)**
    1. Utilities such as electricity
    2. HVAC
    3. Computer science
    4. Cybersecurity
    5. General electrician
    6. General construction
    7. Other

5. **If you answered no to Question 3, are you interested in developing programs specifically targeted at employment opportunities in the communications industry? (Yes/No) (Please skip this question if you answered "yes" to Question 3.)**
    A. **Please describe your interest in developing these programs [text box]**

6. **What type of workforce development programs do you offer? (Select all that apply)**
    1. On-the-job training placement
    2. Standards certification and safety programs
    3. Training programs through a public or private K-12 school
    4. Training programs through a school of higher education
    5. Trade or vocational certificate programs
    6. Job placement and recruiting services
    7. Formal apprenticeship opportunities

7. **Which of the following communications professional designations are included in your programs? (Select all that apply)**
   1. Construction laborers and heavy equipment operators
   2. Tower, line, equipment, maintenance, and testing specialists
   3. Supervisors / project managers
   4. Network design roles
   5. Locators

8. **Does your program specifically reach out to any of the following populations for participation in your programs? (Select all that apply)**
   1. Veterans or current military personnel
   2. People with disabilities
   3. Seniors
   4. Incarcerated or formerly incarcerated individuals
   5. Those in low-income households or without reliable housing
   6. Those with a language barrier including English learners
   7. Those with a low level of literacy
   8. Specific racial or ethnic minority group(s)
   9. Those living in rural communities

9. **How would you characterize your current capacity for developing and offering training programs to meet current workforce demands in the communications industry? (Select one)**
   1. Underutilized
   2. Adequately utilized
   3. At capacity

10. **How would you characterize your plans for developing and offering additional programs to meet future workforce demands in the communications industry? (Select one)**
    1. We have plans to add capacity

2. We have no plans to add capacity
3. We are reducing our training capacity
4. We are interested in adding capacity, but do not have resources to do so

A. Please describe your plans for additional or expanded programs or explain what additional resources you would need to add capacity. [text box]

11. What are the sources of funding for your training programs? (Select all that apply)

1. Federal agencies and programs
2. State agencies and programs
3. County or local funding and programs
4. Private foundations
5. Fundraising and community grants
6. Partnerships with employers
7. Partnerships with unions or trade associations
8. Fee-based services
9. Other – specify [text box]

12. Do you serve rural communities? (Yes/No)

A. What types of incentives are effective to recruit both skilled and manual labor to your rural community? [text box]

13. Describe barriers to developing a diverse, skilled workforce in your community that can fill employment opportunities in the communications industry. [text box]

14. Provide examples or ideas of incentives and programs that can mitigate those barriers to create a diverse pool of highly skilled workers. [text box]

For ISPs only:

15. Do you provide any in-house skills training, workforce development, or apprenticeship programs for your employees to support a highly skilled workforce? (Yes/No)

16. If yes, please identify the types of programs (Select all that apply)

a. Mentorship
b. Certification programs
c. Apprenticeship
d. Internship
e. Sponsorships/scholarships for third-party training and classes
f. Other (Please describe) [text box]

17. In addition to any programs you directly provide, what other sources or programs do you use in Oregon to train and support workforce readiness among your employees? (Select all that apply)

a. Standards certification and safety programs
b. Training programs through a public or private K-12 school
c. Training programs through a school of higher education
d. Trade or vocational certificate programs
e. Formal apprenticeship programs

18. What sources or programs do you use to recruit and hire employees, including technicians, linemen, construction laborers and managers, and similar positions? (Select all that apply)

a. Internet-based employment posting sites
b. Workforce development and community job placement centers
c. Communications industry specific training classes
d. Third-party hiring and recruitment firms
e. Advertisements in relevant trade association publications and websites
f. Incentivizing employee referrals

19. Do you have programs or incentives to support diversity among your employees when considering methods to attract, retain, and promote a skilled workforce? **[text box]**

20. Please describe your vision for workforce readiness programs, recruitment practices, and wrap around services to support broadband expansion in Oregon over the next five years. **[text box]**

Appendix B: Stakeholder engagement schedule of sessions

Date	Time	Location
May 22nd	5:30 p.m.	Port Tillamook Bay Mess Hall, Tillamook
May 23rd	5:30 p.m.	North Bend Public Library, North Bend
May 24th	5:30 p.m.	Umpqua Community College, Roseburg
May 25th	1:30 p.m.	Klamath Community College, Klamath Falls
May 26th	12:30 p.m.	Applegate Valley Fire District Headquarters, Ruch
May 30th	5:30 p.m.	Gresham Armory, Gresham
May 31st	11:30 a.m.	McMinnville Community Center, McMinnville
June 5th	5:30 p.m.	Columbia Gorge Community College, The Dalles
June 6th	5:30 p.m.	Crossroads Carnegie Arts Center, Baker City
June 7th	5:30 p.m.	Treasure Valley Community College, Ontario
June 8th	5:30 p.m.	Harney County Community Center, Burns
June 9th	11:30 a.m.	COCC's Redmond Technology Education Center, Redmond

Appendix C: Stakeholder engagement schedule of virtual meetings

Meeting	Date & Time
Government	May 16, 1 p.m.
ISPs	May 17, 10 a.m.
Workforce Development	May 17, 1 p.m.
CAIs and DE	May 18, 10 a.m.
General Sectors (Public)	May 18, 1 p.m.
General Sectors (Public Part 2)	June 22, 9:30 a.m.
Government (Part 2)	June 29, 10 a.m.

Appendix D: Stakeholder engagement list of participants

Stakeholder engagement session 1: Government

Organization
USBS Cloud Consulting
Oregon Department of Education
League of Oregon Cities
City of Sherwood
InterMountain ESD
IMESD

Stakeholder engagement session 2: ISPs

Organization
City of Sandy
Link Oregon (dba for Oregon Fiber Partnership)
SCTC
HiLight | City of Hillsboro
TNET Broadband internet
DFN
Oregon Telecommunications Association
DirectLink BCT
Pioneer Connect
Beacon Broadband
Rally Networks
Ziply Fiber
Hunter Communications
Datavision Communications
Douglas Fast Net
MTC
PEAK Internet
Hyak
Rogue Broadband/Umpqua Broadband
Monmouth Independence Networks
ACC/ Josephine County IT
Reliance Connects
Colton Telephone and Monitor Telecom
USBS Cloud Consulting
Molalla Communications
Lumen (CenturyLink, Quantum Fiber)
City of Eugene
NTIA
TNET Broadband Internet
Clear Creek Communications
Room Telecommunications Inc./VARCOMM
Datavision
St Paul Telephone Cooperative Association
Eagle Telephone System, Inc.
SCTC
Wtechlink Inc, Pendleton Fiber, Layer 7 LLC
Columbia Fiber LLC
Lane ESD

Stakeholder engagement session 3: Workforce development

Organization
TNET Broadband Internet
Link Oregon (Oregon Fiber Partnership)
Clear Creek
Oregon State University
Beacon Broadband
Ziply Fiber
Hunter Communications
MTC
Monmouth Independence Networks
ACC/Josephine County IT
OCWCOG
Pioneer Connect
Douglas Fast Net
USBS Cloud Consulting
Oregon Coast Community College

Stakeholder engagement session 4: Community anchor institutions

Organization
Link Oregon (dba for Oregon Fiber Partnership)
Free Geek
OBC
Clackamas County
Lake County Library District
OHSU
Jackson County Library Services
ODOT
City of Eugene
Chemeketa Community College
Centro Cultural
USBS Cloud Consulting
Linn-Benton Community College
COIC
Lane Education Service District
COIC/Little River Strategies, Inc
Solarity
State Library of Oregon
Oregon State University
Central Oregon Community College - Barber Library
Willamette Education Service District
City of Portland
Hillsboro Public Library
Zayo Group
City of Sherwood
Curry Public Library
USDA Rural Development
NTIA

Stakeholder engagement session 5: Public

Organization
The Greater Eastern Oregon Network LLC
City of Eugene
Alyrica Networks
Marion County
Tigard Public Library
Comcast Cable
Link Oregon
VCTI
Axiom Connectivity
Ziply Fiber
Southern Oregon ESD
Rockaway Beach Planning Commission
Mighty.net LLC - Business Technology Consulting
Columbia Pacific Economic Development District
Community Digital Equity
Global Grant Service
Farallon Consulting LLC
City of Mt. Vernon
Charter Communications
Morrow County Broadband Project
Oregon State University
OACO
Suma
EOCIL
Oregon State Treasury
Oregon State University Libraries and Press
South Umpqua Rural Community Partnership
Marion County Board of Commissioners
Indian Country Broadband LLC
NWAX
MINET
Rep. Andrea Salinas
VCTI

Stakeholder engagement session 6: General sectors

Organization
Link Oregon (Oregon Fiber Partnership)
Free Geek
Oregon State University
Community for Positive Aging
Pioneer Connect
Beacon Broadband
OBC
Ziply Fiber
Douglas Fast Net
Monmouth Independence Networks
American Connection Corps/Josephine County IT
Centro Cultural
Chemeketa Community College
HiLight | City of Hillsboro
City of Eugene
Jackson County Oregon
Multnomah County
Hyak
City of Creswell
Oregon Department of Education
Columbia Basin Electric Cooperative
OSU Extension Service
Portland Community College
NTIA
National Digital Inclusion Alliance
University of Oregon
Consolidated Business Services
Comcast
COIC/Little River Strategies, Inc
Alyrica Networks
KCEDA
Housing Authority of Jackson County
City of Mt. Vernon
Indian Country Broadband LLC
Clear Creek Communications
Linn-Benton Community College
Converge Communications

Organization
Clackamas County
Hunter Communications
ODOT
USBS Cloud Consulting
Qlife
Guerreras Latinas
Sequoia Consulting
Comcast
Lake County
True North Marketing

Stakeholder engagement session 7: Government (part 2)

Organization
NTIA
City of Veneta
Link Oregon (Oregon Fiber Partnership)
City of Eugene
City of Hubbard
Confederated Tribes of Siletz Indians
Oregon Racing Commission
Global Grant Services
City of Portland
City of Hines
City of Yamhill
City of Hermiston
City of Lincoln City
City of Carlton
City of Hillsboro
Cave Junction
Free Geek/Coalition of Digital Equity
City of Stanfield
City of Chiloquin
Polk County
Marion County
Oregon House of Representatives
Marion County Oregon
City of Portland
City of Amity
LOC
Mitchell Oregon City Council
Polk County
League of Oregon Cities
City of Mt. Vernon
Confederated Tribes of the Umatilla Indian Reservation
Burns Paiute Tribe
MWVCOG
City of Coos Bay
MWVCOG
City of McMinnville
City of Halfway

Organization
Oregon City Economic Development
City of Oakland, Oregon
City of Sherwood
City of Klamath Falls

Appendix E: Flyers and outreach materials

Oregon community outreach flyer

The Oregon Broadband Office is committed to robust community engagement. Lend your voice and expertise to ensure that the State of Oregon Broadband and Digital Equity Initiatives deliver reliable, affordable, high-speed internet, and digital equity for all Oregonians.

Get Connected: Oregon 12-Stop Listening Tour

Date	Time	Location
Monday, May 22	5:30PM	Port of Tillamook Bay Mess Hall, Tillamook
Tuesday, May 23	5:30PM	North Bend Public Library, North Bend
Wednesday, May 24	5:30PM	Umpqua Community College, Roseburg
Thursday, May 25	1:30PM	Klamath Community College, Klamath Falls
Friday, May 26	12:30PM	Applegate Valley Fire District Headquarters, Ruch
Tuesday, May 30	5:30PM	Gresham Armory, Gresham
Wednesday, May 31	11:30AM	McMinnville Community Center, McMinnville
Monday, June 5	5:30PM	Columbia Gorge Community College, The Dalles
Tuesday, June 6	5:30PM	Crossroads Carnegie Arts Center, Baker City
Wednesday, June 7	5:30PM	Treasure Valley Community College, Ontario
Thursday, June 8	5:30PM	Harney County Community Center, Burns
Friday, June 9	11:30AM	COCC's Redmond Technology Education Center, Redmond

Information and input opportunity

The Oregon Broadband Office will host 12 community meetings across Oregon to present information on the BEAD program and solicit input for Oregon's broadband planning, including information about barriers, needs and opportunities related to high-speed internet access.

Visit broadband.Oregon.gov

WHO

- State Agencies & Local and Regional Governments
- Internet Service Providers
- Community Anchor Institutions
- Workforce Development
- Residents
- Business & Economic Development
- Local Communities

WHAT

Broadband Technology

Learn more about broadband infrastructure for communities and local policymakers

Funding and Opportunities

Oregon is eligible for at least $100 million from the National Telecommunications and Information Administration

Participate in the Planning

Join the Oregon Broadband Office Mailing List to receive information and updates

Take Action on Connectivity in your Community

The Oregon Broadband Office needs your help identifying areas within Oregon having inadequate broadband service.

WHEN

Engagement	May	June	July	August
Focus Groups				
In-person public meetings				
Agency, Anchor and ISP outreach				
Covered population outreach				
Residential phone survey				
Impact state meetings				

Residential phone survey flyer

PLEASE ANSWER THE CALL
FROM OREGON BROADBAND OFFICE

Beginning early-June through July,
Oregon Broadband Office will be conducting
a residential phone survey

Survey data, along with stakeholder interviews, will support the development of measurable objectives in the following areas:

- Broadband access and adoption
- Devices and technical support
- Digital skills and literacy
- Data privacy and cybersecurity

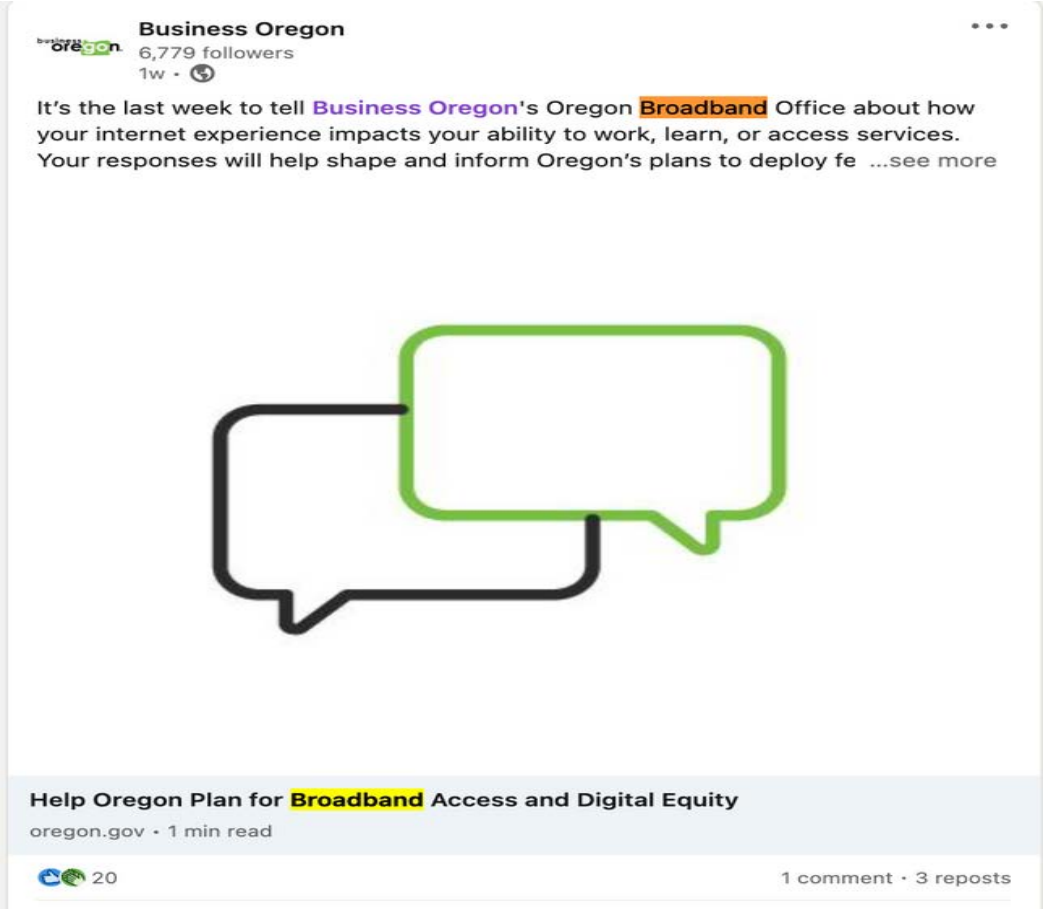
If your caller ID reads: Oregon Broadband Office
Please answer.

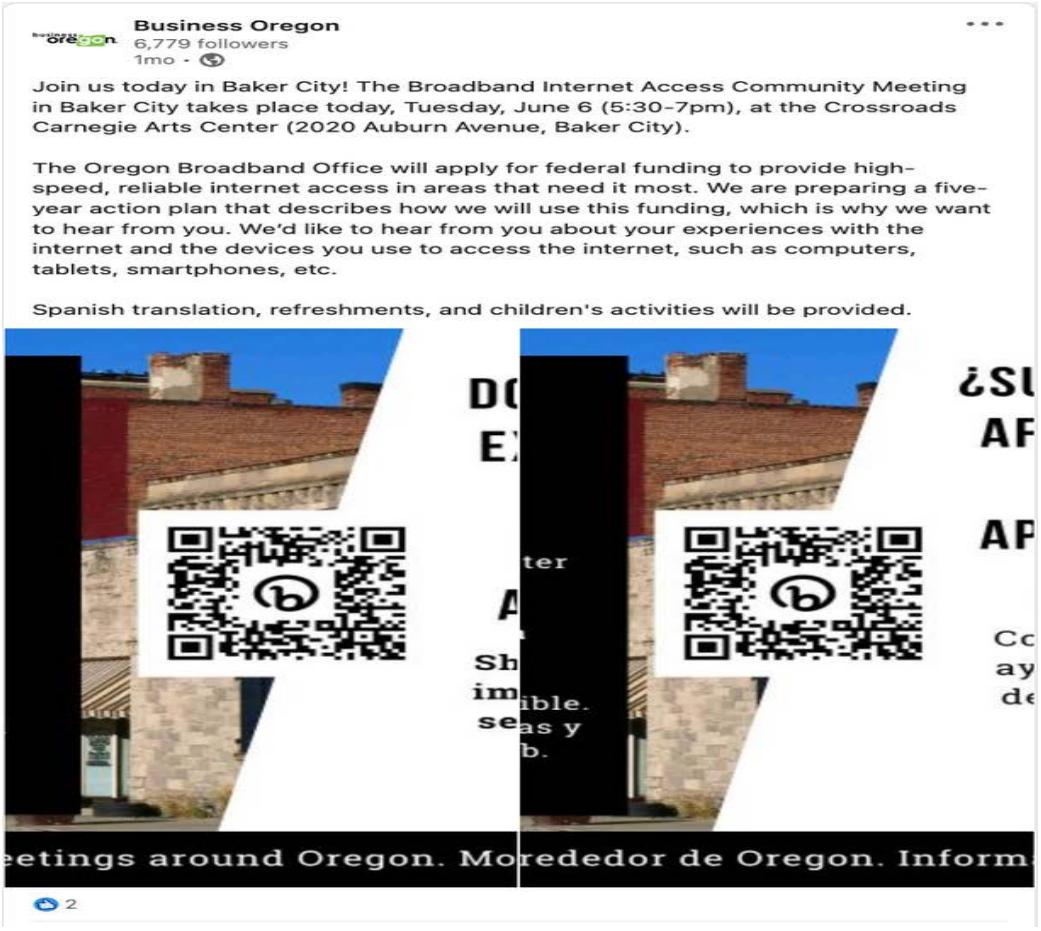
For more information, visit Broadband.Oregon.gov

Broadband outreach (English & Spanish)

Eastern Oregon broadband regional meeting flyer

Sample LinkedIn BEAD and Digital Equity outreach




Business Oregon
6,779 followers
1mo
Join us today in Baker City! The Broadband Internet Access Community Meeting in Baker City takes place today, Tuesday, June 6 (5:30–7pm), at the Crossroads Carnegie Arts Center (2020 Auburn Avenue, Baker City).
The Oregon Broadband Office will apply for federal funding to provide high-speed, reliable internet access in areas that need it most. We are preparing a five-year action plan that describes how we will use this funding, which is why we want to hear from you. We'd like to hear from you about your experiences with the internet and the devices you use to access the internet, such as computers, tablets, smartphones, etc.
Spanish translation, refreshments, and children's activities will be provided.
etings around Oregon. Mo
rededor de Oregon. Inform
2


Business Oregon
6,779 followers
3w •
Access to the internet is critical piece of economic prosperity. Oregon has been allocated $689 million in federal funding for broadband development, part of the Broadband Equity Access and Deployment (BEAD) program allotment ...see more
THE WHITE HOUSE
WASHINGTON
Fact Sheet: Biden-Harris Administration Announces Over $40 Billion to Connect Everyone in America to Affordable, Reliable, High-Speed Internet | The White...
whitehouse.gov • 3 min read
14
3 reposts

Sample Twitter BEAD and Digital Equity outreach

Business Oregon @BusinessOregon · May 8

Join the Oregon Broadband Office at a community meeting to share your experiences w/ internet access & your devices. Sharing your story will help improve broadband internet service in your community. Spanish interpretation is available. Info/Register: bit.ly/InternetAccess...

2 4 168

Business Oregon @BusinessOregon · May 18

Our Broadband Manager, Daniel Holbrook, had the honor of presenting to Oregon's Legislative Commission on Indian Service regarding upcoming broadband opportunities.

Learn more about the Oregon Broadband Office, here:
oregon.gov/biz/programs/O...

118

General expert representative facilitation session save-the-date

Dear Broadband Partner,

SAVE THE DATE: Invitation to Meeting Regarding Broadband Funding and Accessibility in Oregon

This is a reminder of the upcoming facilitation session hosted by the Oregon Broadband Office (OBO) with key expert representatives to focus on broadband funding and accessibility. We encourage you to forward this reminder to your colleagues and local affiliates to attend these important engagements. You are welcome to use the pre-registration link for the session that best meets your schedule.

Please see the engagement dates below and pre-register to gain access to the webinar link. We look forward to seeing you there!

BEAD and DE Oregon Government Expert Representative Facilitation Session
Date: May 16th, 2023
Time: 1:00 pm – 2:00 pm PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_SqSaF-kkTJG-uWW6nxW0lA

Oregon BEAD and DE Workforce Development Expert Representative Facilitation Session
Date: May 17th, 2023
Time: 1:00 pm – 2:00 pm PDT
Pre-registration Link:
https://us06web.zoom.us/webinar/register/WN_P7PmVzlhSzS7w1sRJzOgFw

Oregon BEAD and DE Community Anchor Institution and Digital Equity Representative Facilitation Session
Date: May 18th, 2023
Time: 10:00 am – 11:00 am PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_QhcW0wOzQ-mkvdfsyYAbKg

Oregon BEAD and DE Open Expert Representative Facilitation Session
Date: May 18th, 2023
Time: 1:00 pm – 2:00 pm PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_8V03W7ClQrKirVzr54Zyhw

Each participant is also asked to complete a brief questionnaire that best represents their focus prior to or after attending a session. The links to these questionnaires are listed below:

- Agency Asset Inventory - https://www.surveymonkey.com/r/OR_AgencyAssetInventory01
- Community Anchor Institutions – https://www.surveymonkey.com/r/OR_CommunityAnchors01
- Workforce – https://www.surveymonkey.com/r/OR_WorkforceDevelopment01
- Covered Population Barriers – https://www.surveymonkey.com/r/OR_CoveredPopulations01
- DE Programmatic Inventory - https://www.surveymonkey.com/r/OR_DEProgramInventory01

We look forward to your participation.

775 Summer St. NE, Ste. 200 • Salem, OR 97301 • 503-986-0123 • fax 503 5815115 • biz.oregon.gov

General expert representative facilitation session reminder

Dear Broadband Partner,

REMINDER: Invitation to Meeting Regarding Broadband Funding and Accessibility in Oregon

You are invited to attend one of the upcoming facilitation sessions hosted by the Oregon Broadband Office (OBO) with key expert representatives to focus on broadband funding and accessibility. We encourage you to forward this invitation to your colleagues and local affiliates to attend these important engagements. You are welcome to use the pre-registration link for the session that best meets your schedule.

Please see the engagement dates below and pre-register to gain access to the webinar link. We look forward to seeing you there!

BEAD and DE Oregon Government Expert Representative Facilitation Session
Date: May 16th, 2023
Time: 1:00 pm – 2:00 pm PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_SqSaF-kkTJG-uWW6nxW0lA

Oregon BEAD and DE Workforce Development Expert Representative Facilitation Session
Date: May 17th, 2023
Time: 1:00 pm – 2:00 pm PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_P7PmVzlhSzS7w1sRJzOgFw

Oregon BEAD and DE Community Anchor Institution and Digital Equity Representative Facilitation Session
Date: May 18th, 2023
Time: 10:00 am – 11:00 am PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_QhcW0wOzQ-mkvdfsyYAbKg

Oregon BEAD and DE Open Expert Representative Facilitation Session
Date: May 18th, 2023
Time: 1:00 pm – 2:00 pm PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_8V03W7ClQrKirVzr54Zyhw

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- Community Anchor Institutions – https://www.surveymonkey.com/r/OR_CommunityAnchors01
- Workforce – https://www.surveymonkey.com/r/OR_WorkforceDevelopment01
- Covered Population Barriers – https://www.surveymonkey.com/r/OR_CoveredPopulations01
- DE Programmatic Inventory - https://www.surveymonkey.com/r/OR_DEProgramInventory01

775 Summer St. NE, Ste. 200 · Salem, OR 97301 · 503-986-0123 · fax 503 5815115 · biz.oregon.gov

General expert representative facilitation session follow-up

Dear Broadband Partner,

Thank you for attending our recent facilitation session with key expert representatives to focus on broadband funding and accessibility. We hope that you found the event to be informative and engaging.

Each participant was asked to complete a brief questionnaire that best represents their focus prior to or after attending a session. If you have not yet completed the appropriate questionnaire, please take a few minutes to do so. The links are listed below:

- Agency Asset Inventory - https://www.surveymonkey.com/r/OR_AgencyAssetInventory01
- Community Anchor Institutions – https://www.surveymonkey.com/r/OR_CommunityAnchors01
- Workforce – https://www.surveymonkey.com/r/OR_WorkforceDevelopment01
- Covered Population Barriers – https://www.surveymonkey.com/r/OR_CoveredPopulations01
- DE Programmatic Inventory - https://www.surveymonkey.com/r/OR_DEProgramInventory01

Again, thank you for your participation.

ISP expert representative facilitation session save-the-date

Dear Broadband Partner,

SAVE THE DATE: Invitation to Meeting Regarding Broadband Funding and Accessibility in Oregon

This is a reminder of the upcoming facilitation session hosted by the Oregon Broadband Office (OBO) with key expert ISP representatives to focus on broadband funding and accessibility. We encourage you to forward this reminder to your colleagues and local affiliates to attend this important engagement.

Please see the engagement date below and pre-register to gain access to the webinar link. We look forward to seeing you there!

BEAD and DE Oregon ISP Expert Representative Facilitation Session
Date: May 17th, 2023
Time: 10:00 am – 11:00 am PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_bTbgLSMFRZ-rg71-n1eXMg

Each participant is also asked to complete a brief questionnaire that best represents their focus prior to or after attending the session. The links to these questionnaires are listed below:

- Agency Asset Inventory - https://www.surveymonkey.com/r/OR_AgencyAssetInventory01
- Workforce – https://www.surveymonkey.com/r/OR_WorkforceDevelopment01
- ISPs – https://www.surveymonkey.com/r/OR_ISPs01
- DE Programmatic Inventory – https://www.surveymonkey.com/r/OR_DEProgramInventory01

We look forward to your participation.

ISP expert representative facilitation session reminder

Dear Broadband Partner,

REMINDER: Invitation to Meeting Regarding Broadband Funding and Accessibility in Oregon

You are invited to attend the upcoming facilitation session hosted by the Oregon Broadband Office (OBO) with key expert ISP representatives to focus on broadband funding and accessibility. We encourage you to forward this invitation to your colleagues and local affiliates to attend these important engagements. You are welcome to use the pre-registration link for the session that best meets your schedule.

Please see the engagement dates below and pre-register to gain access to the webinar link. We look forward to seeing you there!

BEAD and DE Oregon ISP Expert Representative Facilitation Session
Date: May 17th, 2023
Time: 10:00 am – 11:00 am PDT
Pre-registration Link: https://us06web.zoom.us/webinar/register/WN_bTbgLSMFRZ-rg71-n1eXMg

Each participant is also asked to complete a brief questionnaire that best represents their focus prior to or after attending a session. The links to these questionnaires are listed below:

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- Workforce – https://www.surveymonkey.com/r/OR_WorkforceDevelopment01
- ISPs – https://www.surveymonkey.com/r/OR_ISPs01
- DE Programmatic Inventory – https://www.surveymonkey.com/r/OR_DEProgramInventory01

We look forward to your participation.

ISP expert representative facilitation session follow-up

Dear Broadband Partner,

Thank you for attending our recent facilitation session with key expert representatives to focus on broadband funding and accessibility. We hope that you found the event to be informative and engaging.

Each participant was asked to complete a brief questionnaire that best represents their focus prior to or after attending a session. If you have not yet completed the appropriate questionnaire, please take a few minutes to do so. The links are listed below:

- Agency Asset Inventory - https://www.surveymonkey.com/r/OR_AgencyAssetInventory01
- Workforce – https://www.surveymonkey.com/r/OR_WorkforceDevelopment01
- ISPs – https://www.surveymonkey.com/r/OR_ISPs01
- DE Programmatic Inventory – https://www.surveymonkey.com/r/OR_DEProgramInventory01

Again, thank you for your participation.

Invitation to lived-experience discussion groups

During the month of July, OBO held five focus group discussions to understand lived experiences of specific population groups in the state. OBO identified and reached out to representatives of organizations that serve covered populations to attend the sessions.

BUSINESS OREGON

BROADBAND FOCUS GROUPS

Recruitment Outreach Letter

Greetings–

You have been identified by the Oregon Broadband Office as a key stakeholder representing one of the many diverse interests across Oregon that would be important to consider as we work on a statewide planning effort which will outline how we will use at least $100 million of upcoming federal funds for expanding reliable, high-speed broadband internet access to Oregonians in areas that need it most.

There are two opportunities available which require plans to be in place before federal funding can be received by the state for implementation:

- The Broadband Equity, Access and Deployment (BEAD): This includes establishing a 5-year plan for building broadband infrastructure to improve internet availability in areas that are either currently not served or aren't served well.
- Digital Equity (DE) Program: This includes creating opportunities to improve internet access for individuals, by addressing:
  - Affordability
  - Devices and Technical Support
  - Education and training
  - Creating inclusive and accessible information and content
  - Privacy and Security

We feel that you or someone within your network can provide us with valuable insights as we evaluate how people internet experience is impacting their abilities to learn, work or access services. These insights will help us understand the internet needs across the state and put together a plan that works for all Oregonians.

To guide the work of these plans, we are convening listening sessions focused on hearing the lived experiences of using the internet from the following populations:

- Rural residents
- Low-income individuals
- Veterans
- Individuals over 60
- Individuals with disabilities
- English language learners
- Individuals with low literacy levels
- Racial and ethnic minorities
- Incarcerated individuals

Do you feel that you or someone you know could contribute valuable insight to help guide this these plans to improve internet service in your community and others like it? If so, you can participate in a

listening session in your community on [insert date, time and location here]. Register to attend [insert registration info here]

Accommodations will be made available to ensure that those who want to participate can.

If you can't attend, but would like to learn more or share your story another way,

- Take the online survey: bit.ly/BroadbandOregonSurvey
- Check your address on the Federal Communications Commission (FCC) coverage map and submit a challenge if your address is identified as served, but you experience poor or unreliable service: broadbandmap.fcc.gov
- Call us: [Phone number]
- Find out more: bit.ly/BroadbandOregon

Please feel free to get in touch with me if you have any questions or need further information. I look forward to the opportunity share more information with you about the Oregon Broadband Office's plans to bring faster, more reliable internet to Oregonians and hear your story.

Thank you!

Appendix F: ISPs that participate in the ACP

The following table lists ISPs in the state (including mobile service providers) that participate in the ACP.[321] The table also indicates providers that offer a plan that provides service at effectively no cost with the application of the ACP subsidy ("no cost with ACP"), and whether the provider offers eligible customers the option to purchase a device at a discount.[322]

Table 15: ISPs participating in the ACP (including no-cost plans and device discounts)

Provider name	Service type	No cost with ACP	Device discount
Straight Talk, Total Wireless, Simple Mobile, Walmart Family Mobile, TracFone, Net10, Page Plus & Go Smart	Mobile Internet		Yes
SCTC	Home Internet		
Rural4G	Mobile Internet	Yes	Yes
SandyNet	Home Internet		
Hughes Network Systems, LLC	Home Internet		
Columbia iConnect	Home Internet		Yes
Verizon Wireless	Home Internet		
Assurance Wireless	Mobile Internet	Yes	
Maxsip Telecom Corporation	Home Internet		
Astound Broadband powered by Wave	Home Internet	Yes	
Cricket Wireless	Mobile Internet	Yes	
TDS Telecommunications Corporation	Home Internet		

[321] Based on data provided to USAC by service providers, available at https://cnm.universalservice.org/.
[322] Per USAC, customers must pay more than $10 but not more than $50 and must purchase the device through the provider; "Companies Near Me," USAC, https://cnm.universalservice.org/.

Provider name	Service type	No cost with ACP	Device discount
Metro by T-Mobile	Mobile Internet	Yes	
ECOMOBILE, INC.	Home Internet		Yes
Reliance Connects	Home Internet		Yes
Oregon-Idaho Utilities, Inc.	Home Internet		
RTI*	Home Internet	Yes	
Monitor Cooperative Telephone Company	Home Internet		
Dailytel Inc.	Mobile Internet		
Lane Fi	Home Internet		
Clear Wireless, LLC	Home Internet		Yes
Nexus Telecom	Mobile Internet		Yes
Upward Mobile LLC	Mobile Internet		Yes
Digital Aid, LLC	Mobile Internet		Yes
Emerald Broadband, LLC	Home Internet		
Warm Springs Telecom	Home Internet		
FastMesh LLC	Home Internet		Yes
Go Technology Management, LLC	Mobile Internet		Yes
Snapfon	Mobile Internet	Yes	Yes
Helix Telephone*	Home Internet		

Provider name	Service type	No cost with ACP	Device discount
IJ Wireless	Home Internet		Yes
PTC	Home Internet		
Douglas Services, Inc.	Home Internet		
Q Link Wireless LLC	Mobile Internet	Yes	Yes
Illinois Valley Data Center, LLC	Home Internet		
Beacon Broadband, Inc.	Home Internet		
Infiniti Mobile	Mobile Internet	Yes	Yes
TruConnect Communications, Inc.	Mobile Internet	Yes	Yes
Ziply Fiber	Home Internet		
Ziply Fiber	Home Internet		
Skybeam, LLC	Home Internet		
Whoop Connect Inc.	Mobile Internet		Yes
CTC Telecom	Mobile Internet		
Verizon Wireless	Mobile Internet		
Ztar Mobile, Inc	Mobile Internet		Yes
Comcast Xfinity	Mobile Internet	Yes	
Canby Telephone Association	Home Internet		
IDT Domestic Telecom, Inc.	Mobile Internet		Yes

Provider name	Service type	No cost with ACP	Device discount
United States Cellular Corporation	Mobile Internet		
Sano Health LLC	Mobile Internet	Yes	Yes
Viasat	Home Internet		
Hyak	Home Internet		
National Wireless	Mobile Internet		Yes
Torch Wireless	Mobile Internet		
Pioneer Telephone Cooperative	Home Internet		
Molalla Telephone Company	Home Internet		
IJ Wireless	Mobile Internet		Yes
Rogue Mobile Inc.	Mobile Internet	Yes	Yes
Datavision Communications, LLC	Home Internet		
Yellowknife Wireless	Home Internet		
Cintex Wireless, LLC	Mobile Internet	Yes	Yes
United States Cellular Corporation	Home Internet		
North-State Telephone	Home Internet		
Althea - Hawk Networks, Inc.	Home Internet		Yes
Eastern Oregon Telecom	Home Internet		
InterConnection	Mobile Internet		Yes

Provider name	Service type	No cost with ACP	Device discount
Unity Wireless Inc.	Mobile Internet	Yes	Yes
Cal-Ore Communications	Home Internet		
AT&T Mobility LLC	Mobile Internet	Yes	
Metro by T-Mobile	Home Internet	Yes	
Native Network, Inc.	Home Internet		Yes
Access Wireless	Mobile Internet	Yes	
Clear Wireless, LLC	Mobile Internet		Yes
Boost Mobile	Mobile Internet		Yes
Sarver Wireless	Mobile Internet	Yes	Yes
Public Wireless, LLC	Home Internet		Yes
Red Pocket & FreedomPop	Mobile Internet		Yes
Global Connection Inc. of America	Mobile Internet	Yes	Yes
Sparklight	Home Internet		
Alyrica Networks Inc	Home Internet		
Uprise Fiber	Home Internet		
PDTFast	Home Internet		
K20 Wireless	Mobile Internet	Yes	Yes
Comcast Xfinity	Home Internet	Yes	

Provider name	Service type	No cost with ACP	Device discount
Tone Communication Services LLC	Mobile Internet		
Easy Wireless	Mobile Internet	Yes	
Airtalk Wireless	Mobile Internet		Yes
SafetyNet Wireless	Mobile Internet	Yes	Yes
TDS	Home Internet		
Culture Wireless	Home Internet		Yes
LTE Wireless	Mobile Internet		Yes
Clear Creek Communications	Home Internet		
CenturyLink or Quantum Fiber	Home Internet	Yes	
Twigby	Mobile Internet		
Hoop Wireless, LLC	Mobile Internet	Yes	Yes
Culture Wireless Group, LLC	Mobile Internet		Yes
Freemo	Mobile Internet		Yes
Colton Telephone Company	Home Internet		
Wrazzle, Inc.	Mobile Internet		Yes
CresComm Broadband	Home Internet	Yes	
Hunter Communications	Home Internet		
Anthem Broadband	Home Internet		

Provider name	Service type	No cost with ACP	Device discount
Telispire, Affinity Cellular, Club Cellular, Flex Cellular	Home Internet	Yes	Yes
VOLT MOBILE INC.	Mobile Internet	Yes	Yes
Home Telephone	Home Internet		
Casco Communications, Inc.	Home Internet		
SMTA, SMT-Net	Home Internet		
U2 CONNECT NOW	Home Internet		
Helio Broadband	Home Internet		
Spot On Networks, LLC	Home Internet		
North American Local, LLC	Mobile Internet	Yes	Yes
Gorge Networks LLC	Home Internet		
Figgers Communication Inc.	Home Internet		Yes
MINET	Home Internet		
NewPhone Wireless, LLC	Mobile Internet	Yes	Yes
AFNET, LLC	Mobile Internet		Yes
Hood River Electric Co-op	Home Internet		
Integrated Path Communications, LLC	Home Internet	Yes	
Excess Telecom, Inc.	Mobile Internet	Yes	Yes
PCs for People	Mobile Internet	Yes	Yes

Provider name	Service type	No cost with ACP	Device discount
Monroe Telephone Company	Home Internet		
Comlink Total Solutions Corp	Mobile Internet		
Roome Telecommunications Inc	Home Internet		
Selectel Wireless	Mobile Internet	Yes	Yes
GO MD USA LLC	Mobile Internet		Yes
Hello Mobile Telecom LLC	Mobile Internet	Yes	
Reliance Connects	Home Internet		Yes
Farmers Mutual Telephone Company	Home Internet		
Lingo	Home Internet		
Beaver Creek Cooperative Telephone Company	Home Internet		
SWA Connect, LLC	Home Internet		Yes
Fidelity Cablevision, LLC	Home Internet		
Sherwood Broadband	Home Internet	Yes	
PocketiNet Communications, Inc.	Home Internet		
humanIT	Mobile Internet		Yes
Boomerang Wireless, LLC	Mobile Internet		Yes
Via Wireless, LLC	Mobile Internet		Yes
ECOMOBILE, INC.	Mobile Internet		Yes

Provider name	Service type	No cost with ACP	Device discount
Life Wireless	Mobile Internet		
Insight Mobile, Inc.	Mobile Internet		Yes
Pine Telephone System Inc.	Home Internet		
Nexus Telecom	Home Internet		Yes
Oregon Telephone Corporation	Home Internet		
Tablet Mobile	Mobile Internet		Yes
Canby Telephone Association	Home Internet		
VOLT MOBILE INC.	Home Internet	Yes	Yes
Pendleton Fiber	Home Internet		
Spectrum (Charter Communications Operating, LLC)	Home Internet	Yes	
EARTHLINK, LLC	Home Internet		
Culture Wireless	Mobile Internet		Yes