ADVANCE COLORADO BROADBAND

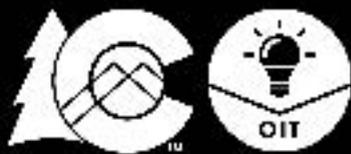# Broadband, Equity, Access and Deployment Program

Five Year Action Plan

August 14, 2023

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Acknowledgements

I want to thank Governor Jared Polis for his leadership and direction regarding opportunities for increasing access to broadband, improving digital equity and innovating government services so that we can bridge the digital divide across Colorado. It is my pleasure to present to you the Broadband, Equity, Access, and Deployment (BEAD) Five-Year Action Plan.

I want to acknowledge the staff and leadership in the Colorado Broadband Office (CBO) for their diligent and professional management of this project. The CBO's work has ensured we achieved the objectives set forth as the state leverages an unprecedented amount of funding available through the Treasury Department and National Telecommunications Information Administration.

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Sincerely,

Brandy Reitter
Executive Director, Colorado Broadband Office

Executive Summary

Overview

Broadband plays a pivotal role in facilitating essential activities for residents and fostering societal advancements across various domains, including economic development, healthcare, public safety, government services, and education. The federal government is embarking on an unprecedented investment in broadband, allocating over $100 billion nationwide. Notably, Colorado is set to receive a substantial share of this funding, amounting to $826.5 million dedicated to Broadband, Equity, Access, and Deployment (BEAD) initiatives over the next five years.

Governor Jared Polis has taken a proactive stance by issuing Executive Order D2022-023, titled "Accelerating Broadband Deployment in Colorado." This directive empowers the Colorado Broadband Office to strategize and formulate approaches that guide the development of a comprehensive Five-Year Action Plan.

The primary objective of the Five-Year Action Plan is to establish a solid framework that aligns seamlessly with future Initial and Final Proposals mandated by the National Telecommunications Information Administration (NTIA). This proposal is integral to the successful implementation of the Broadband Equity, Access, and Deployment Program, should draw inspiration from, complement, and build upon the strategic directions outlined in Colorado's Broadband Roadmap. This symbiotic relationship ensures a cohesive and progressive approach to expanding universal broadband access in Colorado.

Problem Statement

As the count of Coloradans gaining access to computers and the internet rises, the digital divide paradoxically widens. Within Colorado, approximately 10% or 190,850 locations find themselves either unserved or underserved, grappling with insufficient internet access. This adoption gap stems from various factors, including regions where unfavorable business conditions hinder investment, issues of affordability, scarcity of devices, and a deficiency in digital literacy. The Five-Year Action Plan discerns these challenges and formulates strategic approaches aimed at rectifying these gaps, thereby fostering an expansion of access and ultimately bridging the digital divide.

Recommendations

Through the Infrastructure, Investment and Jobs Act (IIJA), Colorado has access to funding resources to bridge the digital divide. Based on this opportunity, the Five-Year Action Plan includes specific goals and recommendations. The implementation of these goals can be found in detail in the Implementation Section of the plan. The Five-Year Action Plan recommends the following goals to achieve universal coverage:

- ❖ *Goal One: Build a network for future generations.*

- ❖ *Goal Two: Expand digital inclusion and adoption to achieve affordability, access, and digital literacy.*

- ❖ *Goal Three: Enable Colorado to thrive by fostering and supporting a digital economy.*

- ❖ *Goal Four: Strengthen resilience across Colorado communities through broadband.*

Next Steps

The Five-Year Action Plan will assist the CBO in the development of the Initial Proposal which is due to the NTIA in 180 days of the notice of the state's BEAD allocation, or December 28, 2023. The Initial Proposal is the "first draft" of Colorado's Final Proposal for BEAD grant funding, and, among other things, will explain how the CBO will ensure that every resident has access to a reliable, affordable, and high-speed broadband connection, drawing on all funding available to accomplish this goal, including but not limited to BEAD Program funds.

Conclusion

The Five-Year Action Plan is one of many steps in providing clear direction on how Colorado will connect all households to high-speed broadband. The historical funding available through the federal government has resulted in opportunities to accomplish Colorado's broadband strategies and bridge the digital divide. The CBO is uniquely positioned to successfully leverage resources where they are needed most. Accelerating broadband will ensure economic recovery, improve resiliency, help communities thrive, and ensure that everyone has access to essential activities and services needed for a better quality of life.

2 Overview of the Five-Year Action Plan

2.1 Vision

Broadband enables essential activities of residents and improves society through different channels such as economic development, healthcare, public safety, government services and education. As such, the vision of the Colorado Broadband Office (CBO) is:

Coloradans should have equal access to affordable, fast and reliable broadband service.

The purpose of the CBO is to identify goals and objectives, set strategies, and outline tactics to leverage existing funding to fulfill the vision of universal access in the state. The CBO's goals, objectives, strategies and tactics outlined in this Five-Year Plan are centered around the barriers to network access and adoption: infrastructure, affordable services, device access, and digital skills and support.

2.2 Goals and Objectives

Recent appropriations through the American Rescue Plan Act (ARPA) and Infrastructure, Investment and Jobs Act (IIJA) constitute the largest ever investment in broadband. In addition, the FCC's collection of serviceable location-level broadband data has improved the ability to determine areas of critical need. For the first time in history, states have a mandate to connect every unserved location across the country, turning broadband deployment into a strategic imperative at a local level. Beyond deployment, equity and affordability are key focus areas with substantial funding available to close the digital divide.

To accomplish the Five-Year Action Plan, the CBO has developed a list of goals needed for implementation over the next several years. The main goal is to ensure universal high-speed broadband coverage to all Colorado households by 2027. Provided are specific goals identified in the Colorado Broadband Roadmap that will support the Five-Year Action Plan:

The Broadband Roadmap

Build a network for future generations
Prioritize fiber, the fastest, most-reliable broadband
Invest in mapping and analytics to assess areas of critical need
Support the industry by expanding workforce development programs and addressing labor shortages

Strengthen resilience across Colorado communities through broadband
Foster stakeholder engagement
Share broadband networks
Encourage public-private partnerships

Expand digital inclusion & adoption to achieve affordability, access and digital literacy
Promote programs that make high-speed internet more affordable
Invest in programs that supply devices and educate residents on how to use them

Enable Colorado to thrive by fostering and supporting a digital economy
Foster a culture of innovation and efficiency among government agencies
Leverage technology and improve government services

3 Current State of Broadband and Digital Inclusion

3.1 Existing Programs

The activities the CBO undertakes to invest in broadband statewide and meet the stated goals are outlined below. Most of these activities have been underway for several years.

Table 1: Existing Programs

Activity Name	Description	Intended Outcome(s)
Broadband Deployment Fund and Board Grant Program	The Broadband Deployment Board (BDB), established by the Colorado General Assembly in 2014, provides grants through the Broadband Fund to deploy broadband service in unserved areas of the state.	The BDB grants funds to last-mile projects designed to have the highest impact, thus connecting unserved and underserved households with high-speed broadband.
Broadband Ready Community Certification Program (BRCC)	Established in 2023, the Broadband Ready Community Program (BRCC) program	The program encourages unserved and underserved communities to develop

	provides a checklist of tasks for local communities to engage, plan and execute broadband projects. Completing the BRCC is voluntary for communities but participation will help communities prepare for and successfully execute broadband projects.	plans for federal funding and to work to eliminate potential roadblocks or barriers before projects begin.

Communities that complete the tasks listed in the BRCC are eligible to be designated by CBO as a Broadband Ready Certified Community. While the designation does not guarantee state and federal broadband funding, it will identify the community as a willing partner that has minimized barriers to broadband infrastructure deployment. |
| Broadband Technical Assistance Program | The CBO created the [Broadband Technical Assistance Program](#) to help communities prepare for the Capital Projects Fund and BEAD program funding opportunities. The CBO recognizes that many communities may lack resources and knowledge of how to pursue broadband grant opportunities and encourage broadband investment in their communities. | Many unserved and underserved communities in Colorado are eligible for federal funding but may not have the resources necessary to prepare, plan, apply for and administer a federal grant. The Technical Assistance Program creates a more equitable opportunity, allowing all Colorado communities to participate in upcoming federal grant programs. Through the program, eligible entities qualify for the support and services they will need to pursue these once-in- a-generation grant opportunities, including but not limited to developing a broadband strategic plan, |

		broadband feasibility study, broadband network design/engineering, grant preparation and permitting consulting.
Digital Navigator Program	The Colorado General Assembly has funded a Digital Navigator pilot program in partnership with a match from AmeriCorps and Serve Colorado. Comcast also contributed $600,000 for the two-year period of the program.	Digital Navigators will begin work in late 2023, primarily providing individual technology help for community members in person, by phone and online depending on the needs of each community member. Digital Navigators will assess community members' access to internet service at home and equipment, along with their ability to utilize technology to meet their needs and achieve their goals. They will create digital inclusion goals and work with community members to achieve them. Digital navigators will serve people who are members of historically marginalized communities.
Department of Local Affairs (DOLA) Energy/Mineral Impact Assistance Grant Program (EIAF)	DOLA provides state-wide broadband technical assistance including: local technology planning, project scoping meetings, broadband planning, public-private partnerships, pursuing broadband access and finding regional partners. The CBO assists in reviewing applications made to the DOLA EIAF program, specifically funding for	The CBO provides technical expertise and reviews the feasibility of grant applications to ensure coordination with other state or federal broadband efforts. DOLA has funded 53 carrier-neutral locations, which connect to middle- mile networks and enable last mile connectivity projects.

	middle-mile broadband networks.	
Colorado Department of Transportation (CDOT) Middle Mile Partnership	The CBO works with CDOT to understand its priorities and assets that may be useful for broadband deployment in rural areas and determines ways to work together that are mutually beneficial.	Coordination with CDOT helps to identify opportunities and remove roadblocks to broadband implementation.
Colorado Broadband Mapping Hub	The CBO Broadband Data division leverages multiple data sources for analysis, reporting and decision-making. The division collects broadband availability data from providers annually, following the FCC Broadband Data Collection (BDC) data specifications. The data is supplemented with speed test data and other supporting datasets.	The priority is to ensure that broadband data is accurate, accessible and easily understandable. The data is used to evaluate the FCC map for potential challenges and guides the state Broadband Deployment Board when making grant decisions.
Promoting Affordable Connectivity Program	The CBO focuses on boosting ACP participation. The state partners with nonprofits, educational entities and other government agencies to promote the program to eligible populations.	Expanding efforts to promote the ACP leads to an increased number of Colorado households enrolled in the program. It also addresses the affordability adoption gap.

Table 2: Current and Planned Full-Time and Part-Time Employees

Current/ Planned	FT/ PT	Position	Description of Role
Current	FT	Executive Director	Responsible for providing oversight and management of the office's programs and state-wide strategy for broadband deployment. Work includes education, outreach, supporting regional collaborations, fostering relations with partners, and mobilizing resources to improve the access and affordability of high speed internet.

Current	FT	Senior Manager, Broadband Programs	Responsible for coordinating critical functions for the Colorado Broadband Office. Oversees community and stakeholder engagement, federal funding management and deployment, and program coordination. Responsibilities also include building and deploying a communications and engagement strategy and engaging multiple and diverse stakeholders in the work of the Broadband Office to support broadband deployment.
Current	FT	Manager, Broadband Data Program	Responsible for overseeing the Broadband Data Program, including development, analysis and utilization of broadband data. Additional work includes collecting accurate broadband data directly from internet service providers and developing a robust database of broadband data for Colorado and providing mapping services to state, regional, and local broadband stakeholders and internet service providers.
Current	FT	Director, The Broadband Fund	Responsible for managing the Broadband Deployment Fund and Board, which includes application preparation, technical assistance, program strategy and policy, progress and oversight, and grantee support. Work includes collecting accurate broadband data from grantees, and creating annual reports around broadband data for Colorado stakeholders.
Current	FT	Senior IT Project Manager (2)	Assists with the development and implementation of the broadband grant programs for the State of Colorado. Duties primarily focus on technical assistance, coordination and facilitation of partnerships between communities and broadband providers within the state of Colorado.
Current	FT	Program Specialist – Federal Funding	Responsible for understanding grant compliance requirements of the U.S. Department of Treasury broadband programs and ensuring that projects funded under the Advance Colorado Broadband Grant Program are eligible and stay within federal compliance.
Current	FT	Broadband Data & Communications Manager	Responsible for the planning and execution of outreach and processing efforts for the CBO's Data Program and ensure a complete and accurate account of broadband service availability in Colorado. Additionally, as Communications Manager, responsible for all of the CBO's external communications, including management of the

			monthly newsletter, updates to the CBO's website and oversight of the team's social media presence.
Current	FT	GIS Technician, Broadband Data Program (2)	Maintains broadband data utilized to inform public and private sector users. Additionally, assists in the design and implementation of the analysis of geospatial information to support broadband related goals including data quality assessment, the monitoring and reporting of broadband expansion, and identification of broadband availability and adoption relative to demographics or other information.
Current	FT	GIS Developer	Supports the CBO data team with new and existing applications/tasks.
Current	FT	Senior Grant Specialist - Broadband Deployment Board	Responsible for grant intake including the review and analysis of applications for clarity in preparation for review by the Broadband Deployment Board. Work includes offering administrative support, conducting final interviews and final funding reconciliation for the closeout of grant contracts, and providing outreach, education and technical assistance to applicants and grantees.
Current	FT	Community Engagement Specialist	Engagement coordinator for community organizations, plans events and serves as the liaison on Digital Equity and Affordable Connectivity program.
Current	FT	Broadband Marcom Manager	Manages the marketing and communications for the Advance Colorado Broadband grant program. Works to ensure stakeholders are well-informed and knowledgeable about all aspects of federal broadband funding opportunities through the CBO. Additional work includes sharing the stories of communities, people and projects that are making positive impacts.
Current	FT	Senior Policy Advisor, Office of Information Technology	Manages broadband-related legislation and policy at the Colorado General Assembly.
Current	FT	Senior Broadband Program Specialist	Manages newsletter, website, data analytics, and special projects including FirstNet, public safety and Tribal relationships.
Current	FT	Assistant Attorney General for	Supports the Broadband Deployment Board, Colorado Broadband Office and Attorney General's

		Broadband, Colorado Attorney General's Office	office on broadband-related legal and contract matters.
Current	FT	OIT Recovery Officer	Manages compliance, monitoring and risk management.
Current	PT	Senior Grants Specialist, Office of Information Technology	Monitors federal grants for federal and state fiscal regulations compliance.
Current	PT	Senior Contract Specialist, Office of Information Technology (2)	Drafts grant templates and exhibits that comply with grant funding sources and collaborates with the Office of the State Controller on grant template approvals. Also supports the finance team, grant compliance and the procurement team.
Current	FT	Digital Equity Manager, Office of the Future of Work	Develops strategies to increase digital equity across the state in collaboration with state offices and departments, as well as local governments and community-based organizations.
Planned	FT	IT Financial Analyst II	Reviews grant proposal financial information and monitors grant award expenses.
Planned	FT	Financial Grants Manager	Assists with grant monitoring, compliance, reporting, invoicing and payments.
Planned	PT	Financial Compliance Monitor	Assists with desktop and on-site financial grant monitoring, compliance, invoicing and payments.

Table 3: Current and Planned Contractor Support

Current/ Planned	Position	Description of Role
Current	Vendor: Mapping Hub	Utilizing vendors to develop Mapping Hub, broadband availability map, data collection portal, and host the server for data storage.

Current	Vendor: Broadband Performance Data	Utilizing vendors to incorporate broadband performance data into the Mapping Hub and support the CBO's speed test survey for stakeholders to complete.
Current	Vendor: Broadband Strategic Planning	Utilized vendor to develop Colorado Broadband Roadmap and continued support of strategy development for BEAD program.
Current	Vendor(s): Broadband Technical Assistance	Utilizing vendors to provide feasibility studies, equity and needs assessments for the CBO and grantees.
Current	Vendor: Data and Grant Application Management Tracking	Utilizing vendors for ongoing data, grant tracking management and compliance reporting for federal grant programs.
Planned	Vendor: Compliance and field monitoring	Utilizing vendors to perform post-award construction and desktop monitoring and project audits for compliance.

Table 4: Broadband Funding

Purpose	Awarded	Obligated (Estimated)	Expended (Estimated)	Available to Obligate	Available to Expend
The U.S. Department of Commerce and the U.S. Treasury allocated funding to connect unserved and underserved locations with high-speed internet. Approximately $162.3 million has been awarded via the broadband infrastructure grant plan. An additional $8.5 million will be used for administrative costs.	$170.8 M	$0.7 M	$0.7 M	$170.0 M	$170.0 M
The state of Colorado collects fees on phone customers through the High-Cost Support Mechanism. The Broadband Deployment Board grants fee	$87.8 M	$64.6 M	$49.0 M	$23.1 M	$38.7 M

revenues toward last-mile broadband projects. The matching grant program has awarded $56.1 million in grants, and attracted an additional $29.7 million in match for a total investment of $87.7 million since 2014.					
The State legislature, via HB 21-1289, appropriated $35 million of SLFRF to the Broadband Deployment Board (BDB). The BDB has used the money to provide grants to deploy last-mile broadband service in unserved areas of the state. Construction is slated for completion by 2025.	$35.0 M	$35.0 M	$2.4 M	$0.0 M	$32.6 M
Colorado has 7 winning bidders who were authorized by the FCC. The providers have agreed to serve 28,788 locations in Colorado. RDOF buildout requirements are 40% in 2025, and up to 100% by 2028.	$86.9 M	$86.9 M	$0.0 M	$0.0 M	$86.9 M
Fiber to the premise awards include Emery Telecommunications & Video, Inc. to connect 528 households, 8 educational facilities and 2 critical community facilities.	$2.7 M	$2.7 M	$2.7 M	$0.0 M	$0.0 M
Fiber to the premise awards include Emery Telecommunication & Video for $6,302,196 to cover 684 households, and Delta-Montrose Electric Association for $10,595,446 to cover 2,410 households.	$16.9 M	$16.9 M	$10.6 M	$0.0 M	$6.3 M
Fiber to the premise awards include Eastern Slope Rural	$18.7 M	$18.7 M	$0.1 M	$0.0 M	$18.7 M

Telephone Association for $18,738,398 to cover 2,284 people, 898 farms, 110 businesses and 17 educational facilities.					
BIF IV Intrepid Opco LLC was awarded $2,710,970 via the Enabling Middle Mile Grant Program. The purpose of the Pueblo Middle Mile Project is to fund 78,129 feet of aerial and 29,173 feet of underground fiber to provide a protected ring from the Pueblo datacenter to 6 remote Colorado cabinets. This will lead to a last-mile project that will connect 41,074 homes and small businesses. The double ring network created in this project will prevent single points of failure across the proposed broadband network.	$2.7 M	$2.7 M	$0.0 M	$0.0 M	$2.7 M
Funding for broadband planning and middle-mile deployment projects directed toward communities and governments since 2016. To date, DOLA has provided $47,203,227 in grant funding with a total of $43,591,398 in match funds made by local governments.	$47.2 M	$47.2 M	$23.7 M	$0.0 M	$23.5 M
The State legislature, via HB 21-1289, appropriated $5M of SLFRF to the Department of Local Affairs to support local government middle-mile projects.	$5.0 M	$5.0 M	$0.8 M	$0.0 M	$3.9 M

The State legislature, via HB 21-1289, appropriated SLFRF for broadband-related projects to address gaps in telehealth. In collaboration with the Colorado Broadband Office, the Office of eHealth Innovation is leading this grant to support Colorado healthcare providers in expanding their services via telehealth through expanded broadband capacity and web-enabled technology. This grant also connects 3 correctional facilities in Colorado - the Colorado State Penitentiary, Centennial Correctional Facility and La Vista Correctional Facility.	$6.4 M	$6.4 M	$1.1 M	$0.0 M	$5.3 M
The State legislature, via HB 21-1289, appropriated $10,000,000 of SLFRF to both federally-recognized Tribes with land in Colorado – the Ute Mountain Ute Tribe and the Southern Ute Indian Tribe.	$20.0 M	$20.0 M	$8.1 M	$0.0 M	$11.9 M
The Ute Mountain Ute Tribe received an award of $22,727,873 to serve 817 unserved Native American households, 7 unserved Tribal businesses and 36 unserved community anchor institutions. (Some households are located in Utah.) The Southern Ute Indian Tribe received an award of $43,704,180 to connect 1,798 unserved Native American households, 14 businesses and 16 anchor institutions.	$66.4 M	$66.4 M	$0.0 M	$0.0 M	$66.4 M

An FCC program enacted by Congress to ensure that schools and libraries across the U.S. are connected to information and resources through the internet.	$47.1 M	$47.1 M	$24.0 M	$0.0 M	$23.1 M
An FCC program enacted by Congress that provides devices (computers, laptops, hotspots, broadband equipment) and broadband service (both mobile and fixed) for schools and libraries to address needs created by the COVID-19 pandemic. Colorado schools and libraries submitted over 1,400 applications. So far 624 applications have been approved and 773 remain pending.	$47.0 M (obligated) $54.4 M (approved) $86.6 M (pending)	$54.5 M	$24.0 M	$32.2 M	$23.1 M
Since 2020, 60 Colorado health care applicants have received 431 awards to provide access to health facilities.	$14.4 M	$14.4 M	$1.7 M	$0.0 M	$12.7 M
Colorado State University Extension was awarded funding to promote and enhance economic development in rural Colorado communities. The funding is to create a state virtual classroom, and to work with local communities to expand broadband and content delivery.	$0.3 M	$0.3 M	$0.0 M	$0.0 M	$0.3 M
Colorado had five grant award winners in the program: • Ethiopian Community Television, Aurora - $200,000 • Denver Community Ventures, Denver - $125,000	$0.9 M	$0.9 M	$0.0 M	$0.0 M	$0.9 M

• Hunger Free Colorado, Denver - $110,000 • Colorado Community Action Association, Nederland - $200,000 • City of Pueblo, Pueblo - $300,000					
Colorado had one grant award winner, which was the largest in the program: • Adams County Housing Authority dba Maiker Housing Partners	$0.6 M	$0.6 M	$0.0 M	$0.0 M	$0.6 M
Adalante Connect in Pueblo, a Colorado State University Project, aims to improve digital equity, inclusion and literacy within targeted neighborhoods in Pueblo via the CSU Pueblo digital equity system.	$3.0 M	$3.0 M	$0.0 M	$0.0 M	$3.0 M
Funds were provided to create the statewide Digital Access Plan. The Colorado Department of Labor and Employment and the Office of the Future of Work will complete the plan.	$0.9 M	$0.9 M	$0.0 M	$0.0 M	$0.9 M
The Colorado Department of Education created the Connecting Colorado Students grant program to increase access to broadband services for students, educators and other staff who lack stable, reliable internet access for online learning. Eligible applicants that receive this grant shall use the funds to meet the internet access needs of its students, educators and other staff. The award includes 25 school districts.	$1.2 M	$1.2 M	$1.2 M	$0.0 M	$0.0 M

3.2 Partnerships

CBO has several state partners. Table 5 provides a detailed list of partnerships.

Table 5: CBO Partners

Partners	Description of Current or Planned Role in Broadband Deployment and Adoption
Colorado Department of Transportation (CDOT)	CDOT is a key partner for broadband deployment in the state. CDOT has deployed hundreds of miles of fiber and leases fiber to both private industry partners and local governments for use in middle-mile networks. CDOT operates its own network for its Intelligent Transportation System (ITS) on fiber but leases excess fiber to partners. CDOT leases its Right of Way (ROW) for deployment of new fiber and/or conduit. In some cases, these projects result in public-private partnerships, in which CDOT receives new fiber assets in exchange for access to ROW.
Colorado Department of Labor and Employment (CDLE) - Office of the Future of Work (OFOW)	The CBO collaborates with the CDLE and the OFOW on workforce development plans and strategy, paid apprenticeship programs and digital equity projects. The OFOW is the lead office for digital literacy and inclusion coordination, research, and policy development and leads the Broadband Advisory Board Subcommittee (SDLI).
Colorado Department of Local Affairs (DOLA)	The CBO partners with DOLA and local governments to coordinate funding for local planning, feasibility studies, broadband studies, middle mile grants and other activities.
Colorado Office of eHealth Innovation (OeHI)	In partnership with CBO, OeHI is leading the telehealth broadband grant to support Colorado healthcare providers and the Department of Corrections in expanding their services via telehealth through expanded broadband capacity and web-enabled technology. OeHI is working with OFOW on developing the Colorado Digital Access Plan. Lastly, along with the CBO and the Colorado State Library, OeHI is developing a telehealth access point pilot at rural libraries across the state.
Colorado Office of Economic Development	The CBO partners with OEDIT to promote broadband services to support rural economic development efforts and encourage

and International Trade (OEDIT)	broadband infrastructure investment through enterprise zone and opportunity zone tax incentives.
Colorado Commission of Indian Affairs (CCIA)	The CBO works with the CCIA to coordinate broadband plans and funding opportunities with the Tribes.
Colorado Hospital Association (CHA)	The CHA provides access and grant funding data regarding Colorado hospitals, including data regarding the FCC's Rural Healthcare Program. The CBO leverages the CHA network to communicate about broadband opportunities.
Tribal Nations	The Southern Ute Indian Tribe and the Ute Mountain Ute Tribe are the two federally-recognized Tribes in Colorado. The CBO partners with the Tribes to communicate about funding opportunities and support strategies.
Colorado State Library (CSL)	The CBO works with CSL on broadband deployment to rural libraries and to expand digital equity services to communities. Digital navigators have been deployed in communities and provide services at certain libraries across the state. CSL works with the OeHi and OFOW on workforce training in partnership with workforce centers.
Colorado Department of Corrections (DOC)	The CBO works with the DOC to identify resources to implement broadband in correctional facilities to support access to emergency services, healthcare and educational opportunities. Together, both agencies developed strategies for deploying infrastructure in facilities across Colorado. The CBO allocated federal funding to the DOC to assist with infrastructure and healthcare services.
Colorado Tourism Office (CTO)	The CBO worked with the CTO to develop strategies to fund integrated technology platforms in welcome centers and to assist with digital signage. The CBO will work with the CTO to establish an advisory group to review and rank Welcome Center Technology Platform solutions.
Colorado Department of Natural Resources (DNR)	The CBO works with DNR to develop and leverage broadband deployment projects at state parks to provide last mile connections in communities surrounding parks. Together, both agencies created long-term strategies that prioritize park facilities.
EducationSuperHighway (ESH)	The ESH is a national nonprofit with the mission to close the digital divide for the 18 million households that have access to

	the internet but cannot afford to connect. The CBO partners with ESH for research and best practices and for assistance with the Colorado-branded ACP enrollment campaign and toolkit.
Internet Service Providers (ISPs)	More than 130 ISPs serve Coloradans. The CBO works directly with ISPs to collect broadband availability data. Work includes collaborating with industry representatives to provide updates, facilitate open discussion, and gather feedback for use in CPF and BEAD plans, as well as other CBO activities. A number of providers have applied for and received grant funding through the state.
Councils of Governments (COGs) and Economic Development Districts	The CBO partners with 14 COGs and economic development districts. In some regions, the COG serves as the primary representative of communities and counties. In other regions, economic development districts play a more involved role in planning for a region. These entities work with the CBO to provide training, capacity building, broadband network operations, policy development, and grant writers for broadband programs.
Digital Equity Working Group - Coordinated by the Office of the Future of Work (OFW)	The Digital Equity Working Group (DEWG) is a team of stakeholders selected by the Digital Equity Team, led by the OFW, to help create Colorado's Digital Equity Plan. The DEWG created the vision and mission statement for the plan. The DEWG helped to develop the structure of Colorado's digital equity ecosystem, and are considering strategies for device distribution.
Colorado Department of Regulatory Agencies - Public Utilities Commission (PUC)	The CBO works with the PUC on managing the Broadband Deployment Fund Enterprise. These funds are allocated to the CBO annually to provide funding for last mile grants to ISPs. The source for funding is through the high cost support mechanism program.
FirstNet	The CBO meets monthly with representatives from FirstNet and AT&T to learn about network progress and public safety availability for mobile broadband. The group seeks feedback from the CBO on legislation and policy development for FirstNet and public safety communications.
Construction and Communications Labor Unions	The CBO meets bi-weekly with representatives from the Communications Workers of America on labor and employment issues associated with large federal broadband investments. The

	CBO also meets with the Colorado Laborers LiUNA #720, Colorado Construction and Building and Trades Council, and the Northwest Regional Organizing Coalition. The CBO works with labor unions on policy development and best practices to develop standards for broadband grant programs.
Colorado Town, City, and County and Municipal Associations	The CBO works with Colorado Counties, Inc., the Colorado Municipal League and Special Districts Association, which are nonprofit organizations focused on information, education and legislative representation on behalf of local officials. The CBO works with partners on legislative proposals submitted to the General Assembly, stakeholder outreach on Federal and State initiatives and collaborates on regional events.
Joint Technology Committee (JTC)	The JTC is a committee of the General Assembly responsible for the oversight of the Governor's Office of Information Technology which includes the CBO. The JTC and CBO work together on legislation, policy, strategic priorities and funding to support the mission and goals of the agency.
Colorado Department of Education (CDE)	The CBO works with CDE on funding digital equity initiatives in schools across the state. This includes grants for devices, training, and hot spots for students who need them. The CBO collaborates with CDE on promoting the Affordable Connectivity Program to increase enrollment for underserved and marginalized populations.

3.3 Asset Inventory

The CBO has conducted a detailed review of assets available to implement the Five-Year Action Plan.

3.3.1 Broadband Deployment Assets

The State of Colorado has several assets to assist with increasing broadband access and connectivity for targeted populations to achieve the goals of the CBO.

Mapping & Data Analysis
The CBO operates with a dedicated GIS and data team responsible for gathering information from various sources, including state agencies, private industry, local governments, and utility providers. The primary objective is to collect comprehensive data to analyze the current state of broadband connectivity in Colorado. This involves integrating data from multiple sources to gain a complete understanding of the situation.

The mapping team at CBO plays a crucial role in identifying different types of locations across the state based on their level of broadband service: unserved, underserved, and served areas. Additionally, they maintain an inventory of performance data and monitor grant awards, and track the progress of broadband projects funded by state and federal programs.

A key aspect of the state's implementation of federal programs is understanding state-owned assets related to broadband. To achieve this, the CBO collaborates closely with CDOT to conduct a thorough inventory of all state-owned broadband facilities integrated within Colorado's transportation system.

Recognizing the importance of cross-agency coordination, the CBO has established an internal Interagency Broadband Advisory Group. This group is dedicated to supporting data collection efforts, policy development, and conducting inventories of various initiatives and assets across agencies, all of which are related to infrastructure and digital equity. By fostering collaboration and centralizing information, the CBO aims to enhance the effectiveness of broadband initiatives across the state.

Strategic Partnerships
The CBO collaborates closely with various partners to facilitate broadband deployment across the state. Key partnerships are established with DOLA and CDOT for initiatives such as middle mile grants, infrastructure development, community broadband strategies, and fiber leases for rights-of-way (ROW) and state-owned properties.

Over the past decade, DOLA has granted over $37 million to local governments to construct open access middle mile broadband networks and develop strategic plans. The CBO actively assists DOLA in reviewing grant applications, ensuring alignment with the state's broadband strategies, and promoting local projects that support improved broadband access. Going forward, DOLA will work to consolidate these activities under the CBO.

Regarding CDOT, the CBO collaborates with local governments and industry stakeholders on fiber leases. The CBO's involvement includes reviewing fiber lease agreements and contributing to the planning of future routes to maximize fiber utilization and optimize the return on state investments. Going forward, the CBO will deepen its partnership with CDOT by consolidating fiber leases and public-private partnership agreements into CBO's intake process for initial review. This approach aims to enhance coordination and efficiency.

Presently, CDOT faces a challenge of having over 500 miles of missing middle-mile fiber within the state's transportation system. To address this issue and expand middle-mile infrastructure, the CBO and CDOT are jointly developing a comprehensive long-term capital improvement plan. This plan will involve conducting a thorough assessment of existing infrastructure and outlining a strategy for constructing critical infrastructure to enhance last mile connectivity for communities.

By fostering stronger partnerships and executing strategic plans, the CBO endeavors to propel Colorado's broadband development, promoting connectivity and digital accessibility throughout the state.

Property Infrastructure

Colorado's utilization of state-owned infrastructure plays a crucial role in expediting broadband deployment across the state. By maintaining a comprehensive inventory of state-owned buildings, vacant land, real estate, and higher education facilities, the Office of the State Architect (OSA) and the Office of Risk Management create a valuable resource for the CBO.

The availability of this inventory allows the CBO to identify potential locations with existing infrastructure that can be leveraged for broadband connectivity projects. This means that instead of building entirely new infrastructure, the state can optimize the use of existing assets, reducing costs and speeding up deployment.

Additionally, the state's focus on utilizing state-owned properties for broadband deployment helps in overcoming bureaucratic hurdles and red tape that may otherwise delay the process. Since these properties are under the jurisdiction of state agencies, there is often a more streamlined decision-making process and greater cooperation between different departments, leading to faster project implementation.

Furthermore, by incorporating higher education facilities into the inventory, the state can establish partnerships with educational institutions, creating opportunities for joint ventures or shared infrastructure, fostering innovation, and providing students with enhanced connectivity for learning and research.

Overall, the integration of state-owned infrastructure into the broadband deployment strategy empowers Colorado to extend broadband access more efficiently and cost-effectively, bridging the digital divide and contributing to the state's socio-economic development.

Transportation Infrastructure

The Colorado Department of Transportation oversees an extensive Intelligent Transportation Systems (ITS) & Network Services program that manages a diverse array of fiber assets and right-of-way infrastructure throughout the state. These assets include:

- 9,074 centerline miles of existing rights-of-way
- Over 1,600 miles of fiber
- Approximately 135,000 Fiber Strand Miles
- More than 10,400 Pull Boxes and Manholes
- Over 1,300 Existing Splice Points

CDOT's substantial fiber network and infrastructure resources enable the state to establish robust communication and connectivity for transportation systems, intelligent traffic management, and other essential services. The presence of such a comprehensive infrastructure lays a strong foundation for future technological advancements and improvements in transportation efficiency and safety.

Broadband Deployment Fund

The Broadband Deployment Fund, a dedicated CBO program in Colorado, plays a pivotal role in increasing last mile connectivity in underserved and unserved areas. The fund's primary revenue source is derived from fees attached to telephone services, specifically the high cost support mechanism. Despite a decline in landlines annually, the fund still generates $12 million each year for grant distribution.

Since its inception in 2014, the CBO has allocated a substantial $99.2 million in funding, benefiting 39,682 locations and significantly improving broadband access in these areas. The allocation and distribution of funds are overseen by the Broadband Deployment Board, which conducts two grant cycles annually.

Presently, the program is under a Sunset Review. Considering the overwhelmingly positive feedback from stakeholders and the program's remarkable success in expanding broadband connectivity, the CBO aims to sustain this impactful initiative.

To enhance transparency and provide essential information, the CBO has developed a Broadband Grants Dashboard. This user-friendly tool offers detailed insights into awarded grants and the respective locations served and promotes accountability and public awareness.

Overall, the Broadband Deployment Fund has proven to be a crucial component in Colorado's efforts to bridge the digital divide, facilitating increased internet accessibility in areas that were previously underserved or lacked connectivity.

Community Anchor Institutions (CAIs)

CAIs play a critical role in advancing universal broadband access, representing a diverse range of public and private institutions. These institutions act as gateways to widespread broadband connectivity and offer valuable services, such as digital literacy training, educating the public about government programs, and providing affordable computer access.

CAIs encompass various establishments, including schools, libraries, medical and healthcare providers, public safety entities, community colleges, higher education institutions, and other community support organizations. In some cases, these locations may even offer broadband services to the public, further extending connectivity benefits.

For the CBO, understanding the locations of community anchor institutions with broadband access is essential. This knowledge helps in identifying both challenges and opportunities to achieve connectivity goals more effectively. As the data set pertaining to CAIs sees

continuous improvement, the ultimate aim is to develop it into a reliable resource for emergency response services.

As of 2017, Colorado has identified approximately 7,000 CAIs across the state. A comprehensive list of these institutions can be accessed on the Colorado Information Marketplace [website](#), offering valuable insights for broadband planning and development.

Broadband Workforce Development

In coordination with Colorado Department of Labor and Employment (CDLE) and the Colorado Workforce Development Council, the CBO developed a draft Broadband Workforce Plan included in Appendix 1 that identifies existing training, apprenticeships and other programs that provide for a skilled workforce and then determines what programs are needed to fill the gap.

The workforce gaps in construction services required to build broadband infrastructure is 2,500 - 3,500 over the next 5 years.

"Approximately 50% of deployment-related roles in Colorado could show shortages, especially outdoor, labor-intense roles,"
Colorado Broadband Roadmap

The Workforce Development Plan will address the gaps through the following goals and strategies:

- Launch a Broadband awareness campaign to reach 10,000 Coloradans by 2024
- Approximately 3,000 workers enter into broadband training program by 2025
- Approximately 1,500 new workers are employed in broadband field by 2026
- Evaluate and scale training and job placement programs
- Expand and increase pilot programs and apprenticeships
- Embed telecommunications into workforce infrastructure through policy development
- Establish high quality job training for telecommunication workers

3.3.2 - Broadband Adoption Assets

According to the 2021 U.S. Census Bureau American Community Survey Five-Year Estimate, broadband internet subscriptions serve 90.9% of Colorado households, based on Census definitions. However, it is concerning to note that 4.3% of Colorado households still lack access to a computer at home.

Analyzing the data further, the CBO observed that the coverage of locations served by census block groups varies significantly in Table 6. Along the I-25 corridor, over 80% of residents have access to broadband services. On the other hand, rural parts of Colorado face a considerable gap in coverage, with less than 60% of the state being served.
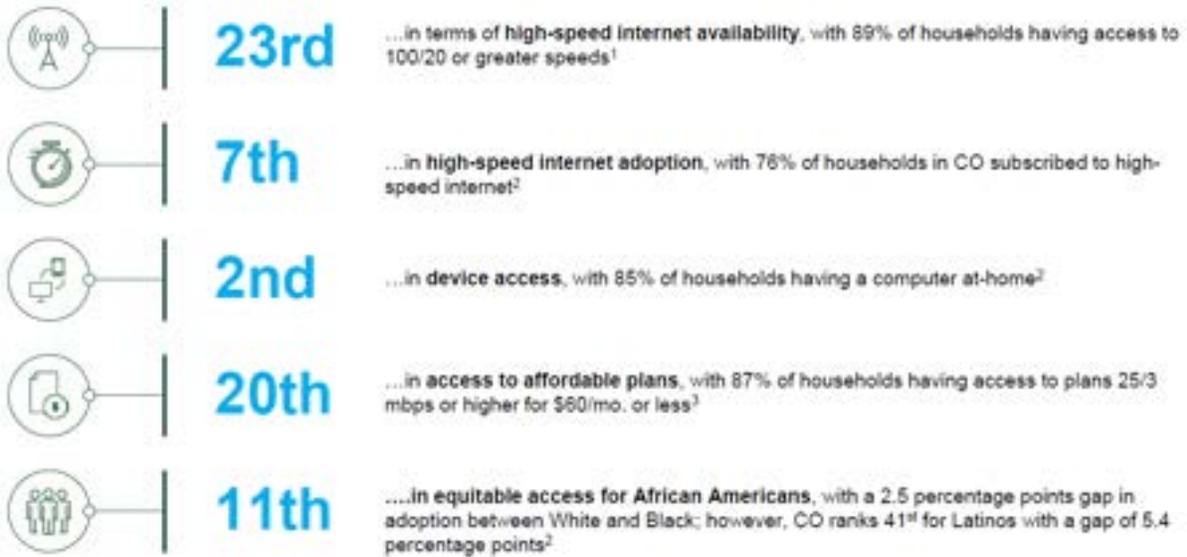
Table 6: Locations Served in Colorado

Share of locations "served" across Colorado, % of total locations in census block group
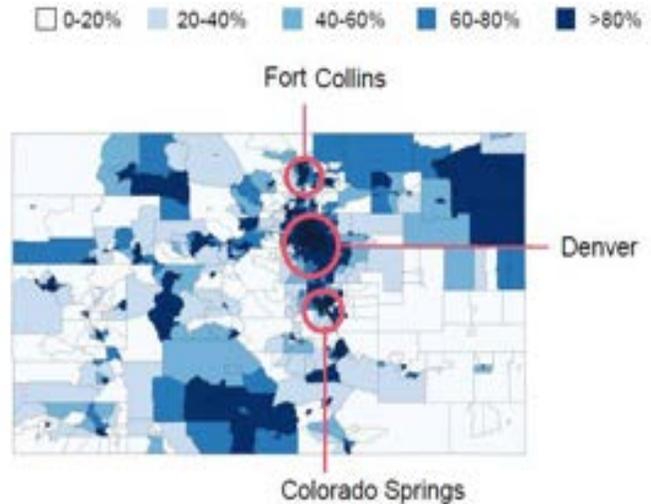
Presently, there are over 191,000 locations in Colorado that lack adequate access to high-speed internet, which is classified as 100/20 mbps. Addressing this issue is crucial to ensure that all residents have equal opportunities to thrive in an increasingly connected world.

Broadband Adoption Survey (Meaningful Adoption)
In 2022, the CBO commissioned a survey of 2,000+ residents, 18+ agencies, 200+ local governments, nonprofits, and organizations serving marginalized populations to assess the current state of broadband in Colorado. The results show that only approximately 76% of households in Colorado subscribe to broadband despite over 90% having access. When compared to other states, Colorado has the following adoption rankings:

23rd	...in terms of **high-speed internet availability**, with 89% of households having access to 100/20 or greater speeds[1]
7th	...in **high-speed internet adoption**, with 76% of households in CO subscribed to high-speed internet[2]
2nd	...in **device access**, with 85% of households having a computer at-home[2]
20th	...in **access to affordable plans**, with 87% of households having access to plans 25/3 mbps or higher for $60/mo. or less[3]
11th	....in **equitable access for African Americans**, with a 2.5 percentage points gap in adoption between White and Black; however, CO ranks 41st for Latinos with a gap of 5.4 percentage points[2]

Sources:
[1] FCC Form 477 data (2019). Potential overstatement of CO performance given limitations of FCC data.
[2] U.S. Census Bureau, American Communities Survey (ACS), 2020. High-speed adoption includes cellular data plans.
[3] BroadbandNow. https://broadbandnow.com/research/co-broadband-report-2021 (2021)

Ensuring universal access to broadband may be achieved through network deployment and meaningful adoption. As a result of the broadband adoption survey, the CBO determined the barriers to adoption of the internet by residents in Colorado. Out of unserved locations, lack of physical access to infrastructure accounts for 56 percent of those who do not adopt the internet. The reasons include a lack of investment caused by an unfavorable business climate and unique geography, which result in coverage gaps.

Meaningful adoption of the internet is the ability to access existing network infrastructure. Out of unserved locals, affordability, lack of having devices such as personal computers, and digital literacy, or having the skills to use the internet account for 44 percent of the adoption gap. Of those who responded to the survey:

Affordability: 38 percent of residents without at-home broadband reported cost as the main reason.

Devices: 15 percent of residents do not have a computer at home.

Literacy: 69 percent of residents agree to have the skills effectively to use a broadband connection.

3.3.3 - Broadband Affordability

In Colorado, secondary to lack of infrastructure, affordability is the most significant reason why residents do not adopt the internet. Two federal programs provide a monthly subsidy to support the cost of broadband to eligible Colorado households.

Affordable Connectivity Program (ACP)
The CBO recognizes the importance of reliable, affordable, and high-speed broadband internet and has intensified efforts to promote ACP enrollment. As per the Education Superhighway, a national nonprofit working to bridge the digital divide, 792,000 Colorado households are eligible for the ACP.

Lifeline
Lifeline is a federal program in the United States that aims to provide affordable telecommunications services to low-income households. It was established by the Federal Communications Commission (FCC) in 1985 to ensure that eligible individuals and families have access to basic telephone services. The program has since evolved to include modern communication services, such as broadband internet access.

The primary objective of Lifeline is to help bridge the digital divide by making communication services more affordable for those with limited financial means. Eligible households can receive a monthly subsidy, which reduces the cost of their phone or internet service. The subsidy is $9.25 per month and as of April 2023, Colorado has 76,647 subscribers receiving a Lifeline benefit, out of 550,430 eligible households. The Lifeline utilization rate is 14% in Colorado.

Lifeline has been an essential program in promoting digital inclusion and ensuring that all Coloradans have access to vital communication services, which are crucial for education, employment, healthcare, and overall well-being.

3.3.4 - Broadband Access

Colorado has been actively gathering mapping information and generating a broadband map biannually since 2012. This initiative enables the CBO to strategically allocate resources for enhancing internet access in underserved areas. Over the past decade, Colorado has made significant investments using state funds to develop middle and last mile broadband networks.

In February 2023, the CBO took a significant step forward by revamping its mapping capabilities and unveiling a new mapping hub. This updated platform empowers stakeholders to accurately identify areas with existing broadband access as well as those still lacking

proper connectivity. This comprehensive understanding helps guide targeted efforts to bridge the digital divide effectively.

Public Wi-Fi Networks and Access Points

The Colorado State Library actively monitors public Wi-Fi access points provided by libraries, recognizing these public libraries as essential community anchor institutions. During the COVID-19 pandemic Safer at Home policies, the significance of public libraries has grown, as they play a vital role in enabling community members to access the internet for crucial tasks like online school work or job applications, even when the physical building is closed to the public.

An interactive map showcasing access points has proven invaluable in supporting unserved and underserved communities. To explore this map and locate these access points, please click here. The tool's primary purpose is to provide geographic locations of public Wi-Fi available in Colorado libraries. It's worth noting that these libraries offer a wide range of exemplary services beyond just their physical buildings.

Mobile and Wireless Connectivity

Mobile and wireless connectivity refer to the ability of devices, such as smartphones, tablets, laptops, and other wireless-enabled gadgets, to access the internet and communicate with each other without requiring a physical wired connection. It allows users to stay connected and access data, information, and services while on the move or within the coverage area of a wireless network.

Mobile and wireless connectivity is important not only as a home internet option for consumers, but also to the traveling public for recreation and public safety. The CBO collects wireless data from grantees that are awarded state and federal funds and includes this information in the mapping hub. According to the FCC's National Broadband Map on mobile broadband coverage, Colorado has the following access:

Table 7: Wireless and Mobile Coverage

Percentage of Coloradans that have Access to Wireless/Mobile Coverage	
49.9%	3G (.2/.05 Mbps.) service
77.8%	4G (5/1 Mbps.) service
38.9%	5G-NR (7/1 Mbps.) service
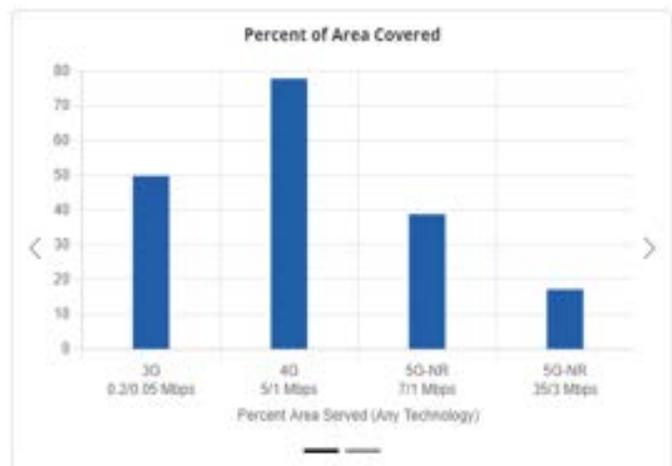
17.3%	5G-NR (35/3 Mbps.) service

Middle Mile Networks

Middle mile broadband serves as the crucial network infrastructure that bridges the gap between local or community networks and the larger internet backbone or long-haul networks. This intermediate step in data transmission connects end-users and their premises to the broader internet infrastructure covering vast geographical areas and linking different regions. Transportation systems play an important role in deploying broadband networks in underserved communities.
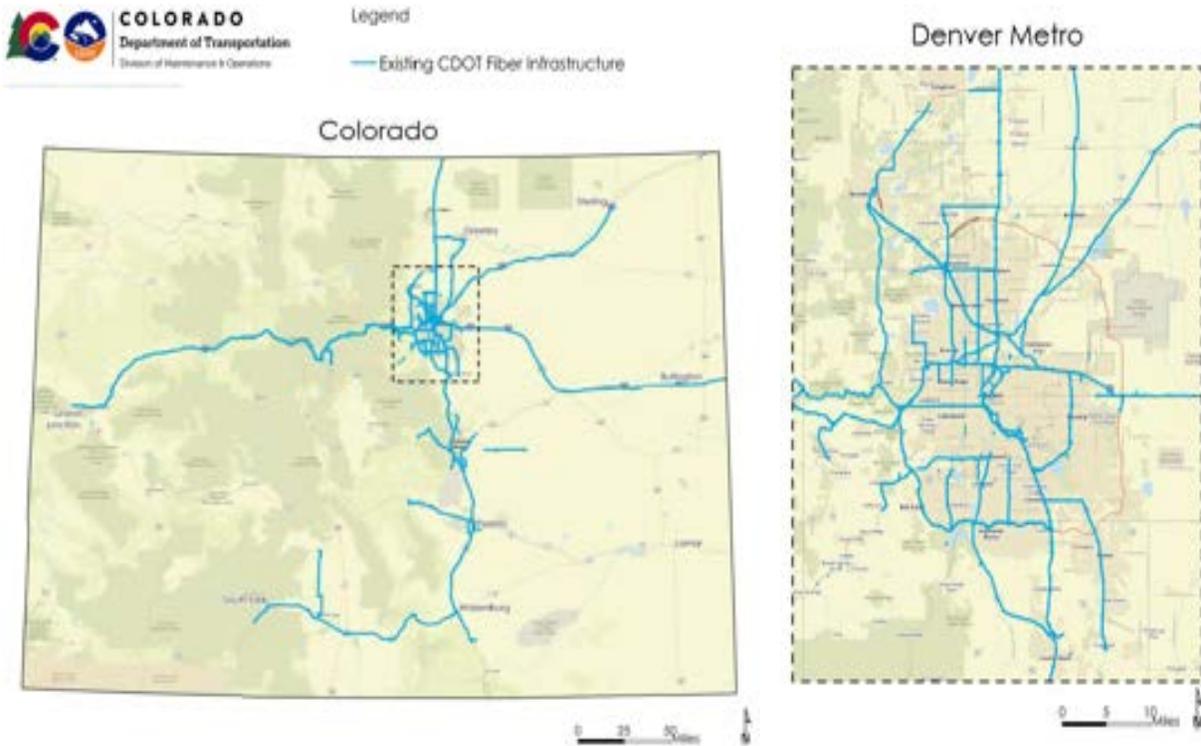
In Colorado, there are approximately 500+ miles of missing middle mile connectivity within the transportation system, posing obstacles to efficient data transmission.

To address these issues, several regional middle mile consortiums have been established in the state. These consortiums play a vital role in bringing critical infrastructure to communities, facilitating last mile connectivity and improving overall internet accessibility for residents and businesses. There are several examples of successful collaborations. Provided below are a few examples of middle mile collaborations:

- Project THOR, managed by the Northwest Colorado Council of Governments (NWCCOG), in conjunction with counties across Northwestern Colorado, completed

critical infrastructure along I-70 and in 14 participating communities to bring accessible, affordable, reliable broadband to rural communities across the region. Project THOR is a middle mile network establishing carrier-class connectivity between 14 communities across Northwest Colorado and points of Presence in Denver.

- Region 10, which is a nonprofit organization working on behalf of a collection of county governments in Southwest Colorado, has also developed and currently operates a middle mile network on the Western Slope. This network provides an innovative, highly leveraged plan to provide abundant and redundant services to the community that utilizes existing networks, prevents overbuild, and brings affordable services into the region.

  The project works with a number of partners including Delta/Montrose Electric Association (DMEA), Tri-State Generation, Western State Colorado University, Gunnison County Electric Association, Department of Local Affairs (DOLA), Economic Development Administration (EDA), and local governments to develop the network.

- Region 9, which was the Southwest Colorado Council of Governments (SWCCOG) was formed to work on regional broadband efforts and in 2010 was awarded a $3 million Department of Local Affairs grant to implement a high capacity network for the regional governments. The SWCCOG organization is now integrated with the Region 9 Economic Development District of Southwest Colorado which continues to pursue middle mile connectivity and redundancy so last mile projects can occur. This network, known as the Southwest Colorado Access Network (SCAN), is the region's first large-scale endeavor.

  The total project, including local matching funds, is over $4 million and connects governmental offices, educational institutions, law enforcement, libraries, fire departments and medical facilities.

- Pueblo Middle Mile Project, the Pueblo Middle Mile Project is to fund 78,129 feet of aerial and 29,173 feet of underground fiber to provide a protected ring from the Pueblo datacenter to 6 remote Colorado cabinets. This will lead to a last mile project that will connect 41,074 homes and small businesses. The double ring network created in this project will prevent single points of failure across the proposed broadband network. The total project costs are $4,631,407 and the NTIA federal award to subsidize the project is $2,710,971.

- Carrier-Neutral Locations, with the support of DOLA, the state has funded 53 Carrier-Neutral Locations (CNLs) throughout the state. These CNLs play a crucial role in facilitating broadband deployment and increasing access to high-speed internet services. Provided is a list that includes information on the location and status

(complete, in progress, and future site) of these CNLs, offering valuable insights into the ongoing efforts to improve broadband infrastructure in Colorado.

3.3.5 - Digital Equity

Colorado is actively engaged in digital equity activities. The Digital Equity Team is currently developing the Digital Access Plan. The goal and purpose of the plan is to enable individuals and communities to increase information technology capacity needed for full participation in society, democracy and economy. This plan will focus on specific populations:

Source: National Digital Inclusion Alliance (NDIA)

As part of the planning effort, the OFOW has selected a vendor to conduct the Digital Equity Survey as well as the a Digital Equity Ecosystem Mapping survey to identify businesses, local governments, and nonprofits that are working in Colorado's digital equity space. A translation company was hired to provide Digital Equity Survey translations requested by community based organizations that were not already available through the data vendor. Colorado's Digital Equity Survey is available in 21 languages. Twenty-three community based organizations that serve historically marginalized Coloradans are providing support for individuals to participate in the Digital Equity Survey.

To support the work, a marketing and communications firm was hired to write and design Colorado's first Digital Access Plan. Through outreach and collaborations, Colorado has launched several state initiatives to enhance the understanding and support of digital equity activities, outlined below:

Digital Equity Working Group (DEWG): The DEWG constitutes a team of carefully chosen stakeholders appointed by the Digital Equity Team to spearhead the creation of Colorado's Digital Access Plan. The DEWG has successfully revised the vision statement and formulated the mission statement for the plan. Furthermore, they have been instrumental in shaping the

structure of Colorado's digital equity ecosystem and actively exploring strategies for device distribution.

Digital Equity Committee: The Digital Equity Committee convenes bi-monthly and is overseen by the Digital Equity Team. Stakeholders attending these meetings receive regular updates on the progress of the Digital Equity Plan's development and gain valuable networking opportunities with representatives from various organizations across Colorado. Additionally, this group actively engages in constructive discussions regarding the barriers and needs faced by their clients and customers, drawing from their own experiences. Detailed notes from these conversations are being compiled and will be incorporated into the narrative of the Colorado Digital Access Plan.

Digital Equity Ecosystem Mapping Survey: The Digital Equity Team is actively collecting information about community-based organizations, businesses, nonprofits, internet service providers, and local governments through the utilization of a Digital Equity Ecosystem Mapping (DEEM) Tool. The Office of the Future of Work is planning to display a map on its website, allowing the public to view the entities that have participated and their respective locations.

Digital Navigator Program : The Digital Navigator Program, administered by CDLE, was launched in March 2023 with $1.7 million in funding from state legislation SB 22-140, matched by Serve Colorado/AmeriCorps. Comcast has further contributed $600,000 to support this program for a two-year period. The application process through Serve Colorado began in March 2023, resulting in the selection of The Learning Source and Loveland Public Library as grantees.

Table 8: Digital Navigators Roles & Responsibilities

The primary focus of Digital Navigators will be one-on-one engagement with community members, provided through in-person, phone, and online interactions, tailored to each individual's needs. In certain cases where community members share similar goals, Digital Navigators may offer small group training. The key responsibilities of Digital Navigators within their communities are listed in Table 8.

Digital Navigators Roles and Responsibilities

Community Assessment
Assess access to internet service and equipment at home, as well as their ability to leverage technology to meet their needs and aspirations.

Collaborate
Collaborate with community members to establish digital inclusion goals and work together to achieve them.

Equitable Access
Serve individuals belonging to historically marginalized communities, prioritizing equitable access to digital resources.
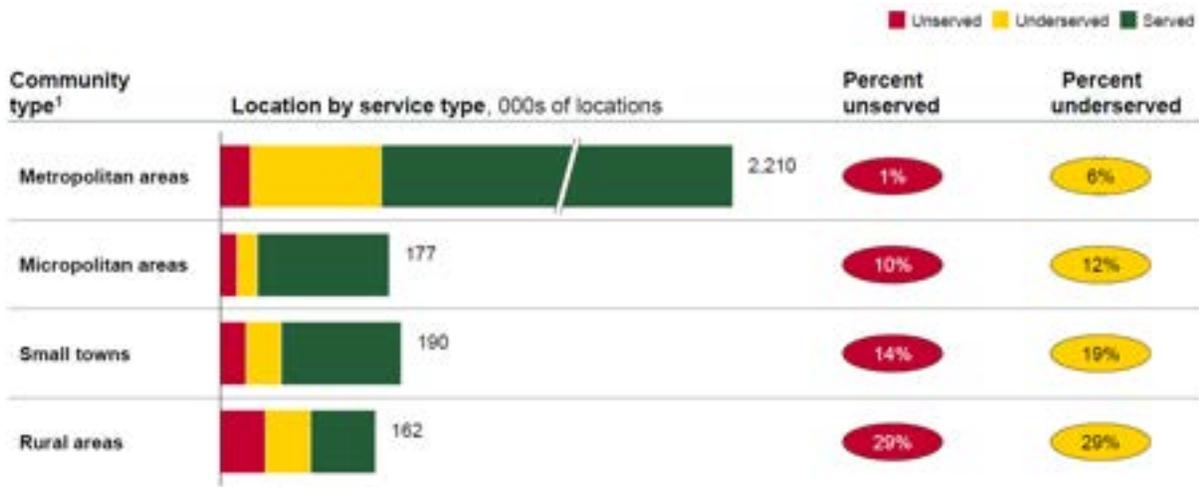
The inaugural cohort of nearly 30 AmeriCorps member Digital Navigators is set to commence service in Arapahoe, Douglas, Denver, Boulder, Weld, Larimer, Pueblo, Jefferson, and Pitkin counties between August and September 2023. A second competition launched in June 2023, with a second cohort scheduled to start in January 2024.

3.4 Needs and Gaps Assessment

Broadband Adoption: In the Colorado Five-Year Roadmap, CBO examined both the access and adoption gaps in the state. In terms of broadband deployment, the FCC's May 30, 2023 mapping release shows 90.2% of locations having adequate high speed internet having 100/20 Mbps service available. The remaining 9.8% of locations represents about 190,850 locations that do not have access to at least 100/20 Mbps access. This figure does not reflect enforceable state or federal commitments to deliver broadband.

Service Availability: Broadband availability is measured by serviceable locations. The CBO estimates that 135,774 of the unserved have access to 25/3 mbps or less and 80,493 of the underserved have access to 100/20 mbps or less. Out of 2.7 million locations, the percentage of those unserved and underserved in rural and urban areas varies. Improving service availability through deployment strategies will address gaps in coverage in each community type.
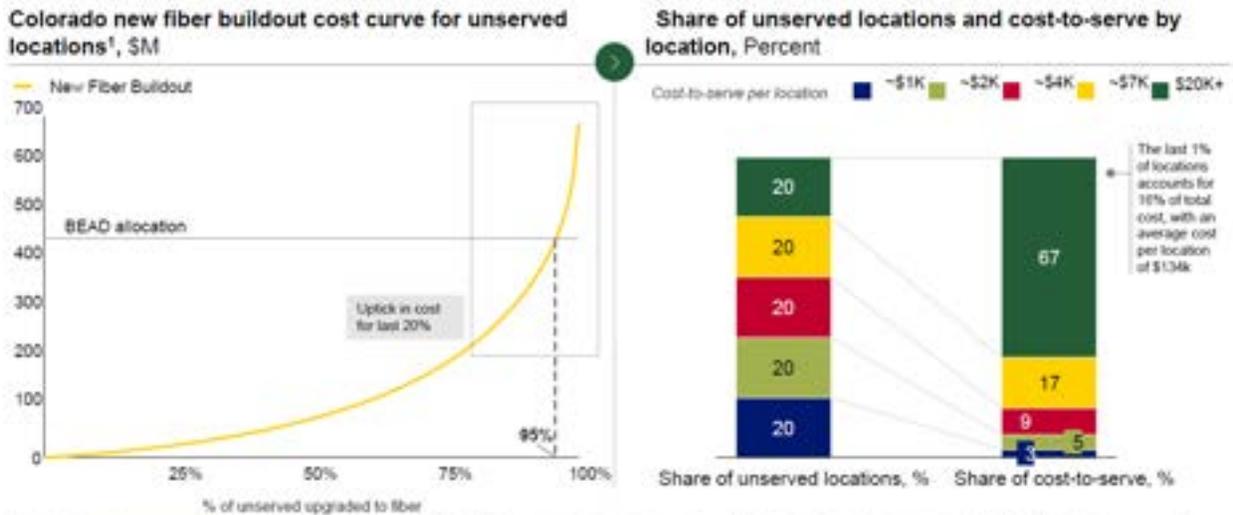
Table 9: Service by Community Type

Community type[1]	Location by service type, 000s of locations	Percent unserved	Percent underserved
Metropolitan areas	2,210	1%	6%
Micropolitan areas	177	10%	12%
Small towns	190	14%	19%
Rural areas	162	29%	29%

Legend: ■ Unserved ■ Underserved ■ Served

[1] Community type determined by the USDA rural-urban commuting area (RUCA) codes at the Census tract level following –
Codes 1-3 Metropolitan area (defined as an Urban Area by the US Census and geographies within its primary commuting radius)
Codes 4-6 Micropolitan area (defined as a large Urban Cluster (population 10k – 50k) and its primary commuting radius)
Codes 7-9 Small Town (defined as a small Urban Cluster (population 2.5k – 10k) and its primary commuting radius)
Codes 10 Rural area (defined as geographies outside of both an Urban Area and Urban Cluster)
Source: CostQuest TAL estimates; 2010 Decennial Census estimates from the US Census Bureau; USDA RUCA codes. As of June 22, 2022.

High-Cost Locations: Colorado is a high-cost state to build out infrastructure, including broadband facilities. The CBO estimates that the average cost to build fiber is $5,000 - $7,500 depending on the area of the region. In a 100% fiber buildout scenario, the 20% most capital-intensive locations account for 67% of the total capital investments. The CBO will use existing and new mapping tools to determine high-cost locations.

Table 10: High-Cost by Location

Colorado new fiber buildout cost curve for unserved locations[1], $M

Share of unserved locations and cost-to-serve by location, Percent

1. Estimates for cost-to-serve assume that locations to be connected by RDOF, CAF II, and USDA are considered served, with the exception of LTD Broadband, SpaceX, Viasat, and anticipated RDOF defaults. Cost-to-serve represents the CapEx investment required for greenfield fiber buildout.

Source: CostQuest data fabric as of June 22, 2022

Workforce Development: In 2023, the NTIA provided Colorado data related to the broadband workforce needs. Their analysis includes a cross-industry deficit related to other infrastructure projects. The most critical areas for Colorado's workforce according to their analysis includes software engineers, trenchers, laborers and material movers, surveyors and

drafters, master and stage electricians, and fiber and wireless technicians. Software developers did not appear in previous analyses the CBO commissioned and represent an additional occupation of interest for the workforce plan.

Table 11: NTIA Broadband Workforce Gap Analysis
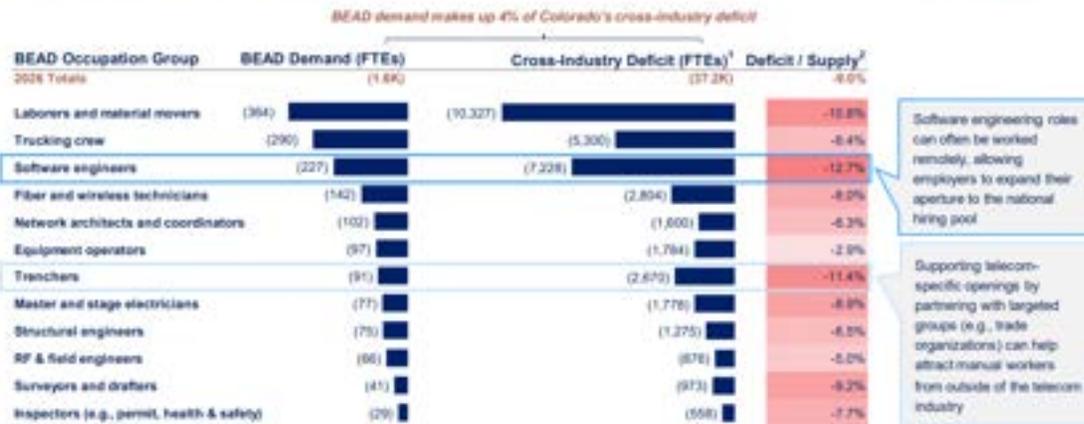
The CBO completed a broadband specific workforce gap analysis in July 2022 to further understand the workforce needed for a successful deployment of broadband resulting in access for more Coloradan households. The two figures in Table 10 illustrate the critical position where gaps will exist. Colorado anticipates a shortfall of up to 3,578 jobs by 2026 related to broadband deployment. It is important to note that the gaps will peak in 2026, which gives the state approximately two years to build and implement workforce development strategies to address the shortages.

Table 12 shows the education requirements for the positions of most need, and highlights the fact that most of the positions require only high school equivalency. This will allow Colorado to tap into a larger talent pool that does not have a four year degree and to connect them to promising pathways in these growing jobs.

Table 12: Colorado Labor Gap Heatmap, 2022-2030

Colorado labor gap heatmap, FTEs

		2022	2023	2024	2025	2026	2027	2028	2029	2030
Pre-construction	Land surveyor	(45)	(43)	(75)	(52)	(117)	(93)	(80)	(79)	(64)
	Pole surveyor	24	23	23	23	22	24	25	26	27
	OSP engineer	(34)	(51)	(63)	(70)	(100)	(80)	(64)	(64)	(36)
	Procurement lead	(26)	(34)	(40)	(44)	(62)	(49)	(42)	(41)	(27)
	Estimator	11	2	(4)	(8)	(28)	(13)	(8)	(5)	4
Construction	Structural engineer	33	34	35	36	36	39	41	42	44
	Project manager	260	265	266	277	219	328	384	437	560
	Foreman	(283)	(367)	(427)	(464)	(645)	(545)	(485)	(439)	(302)
	Laborer	(180)	(425)	(591)	(694)	(1,201)	(837)	(628)	(606)	(219)
	Aerial lineman	162	165	151	141	116	122	127	123	136
	Trucking crew	23	18	15	14	3	13	21	23	30
	Restoration crew	(180)	(251)	(298)	(325)	(451)	(361)	(313)	(340)	(214)
	Mechanic	(3)	(8)	(12)	(14)	(28)	(16)	(14)	(14)	(6)
	Quality inspector	(52)	(68)	(78)	(87)	(127)	(96)	(83)	(82)	(56)
	Safety lead	(72)	(96)	(108)	(118)	(160)	(133)	(115)	(114)	(79)
	Top hand	12	12	13	13	14	15	16	17	18
Post-construction	Locator	(126)	(246)	(331)	(364)	(643)	(457)	(390)	(388)	(151)
	Splicer	223	188	181	170	116	157	179	182	224
	Network operator	11	11	11	11	11	11	11	11	12
	Technician	13	11	9	8	5	6	6	6	7
	Utility liaison	25	26	27	28	28	30	31	32	33
	Underground / line crew	297	294	282	291	283	291	295	297	305
	Traffic control	(2)	(5)	(7)	(8)	(14)	(10)	(8)	(8)	(4)
	Customer service manager	5	5	5	5	5	5	5	5	5
Gross total gap		(1,622)	(1,889)	(2,432)	(3,296)	(3,375)	(3,056)	(2,736)	(2,113)	(1,166)

Source: Expert interviews, CostQuest, EMSI

Table 13: Colorado Labor Gap by Position Type, Salary and Skill Level Required

	Position	2026 Peak	Median Pay	Education requirements	Certification Required	Reentry Program
Pre-Construction	Land surveyor	(117)	$ 61,600	BS	Y	
	Pole surveyor	22	$ 67,910	HS=		
	OSP Engineer	(106)	$ 77,788	HS+/BS	P	
	Procurement lead	(62)	$ 72,540	BS	P	
	Estimator	(26)	$ 73,740	HS+/BS	P	
	Structural Engineer	38	$ 88,050	BS	Y	
	Project Manager	219	$ 94,500	HS+/BS	P	
Construction	Foreman	(645)	$ 72,010	HS+		
	Laborer	(1201)	$ 37,770	HS=		Y*
	Aerial lineman	110	$ 78,310	HS=		
	Trucking Crew	2	$ 48,310	HS=	Y	
	Restoration Crew	(451)	$ 34,662 - $ 74,000	HS=		Y*
	Mechanic	(26)	$ 58,030	HS=	P	Y*
	Quality Inspector	(121)	$ 61,640	HS+/BS		
	Safety Lead	(165)	$ 77,560	HS+/BS	Y	
	Top Hand	14	$ 51,276	HS=	Y	Y*
Post Construction	Locator	(643)	$ 46,910	HS=		
	Splicer	116	$ 60,190	HS=		
	Network Operator	11	$ 75,860	HS=		
	Technician	5	$ 67,280	HS=	Y	
	Utility Liaison	28	$ 129,430	HS+/BS		
	Underground/Line Crew	283	$ 60,580	HS=		
	Traffic Control	(14)	$ 31,450	HS=		
	Customer Service Manager	5	$ 36,920	HS=		

Key Takeaways

The workforce required to implement and maintain a broadband network has a wide range of education, skills, and certifications required, with the majority of the position considered high paying jobs.

- Lack of certifications specific to Telecommunications
- 65% of positions require a minimum education of high school or equivalent
- Surplus positions can fill identified shortages

*Companies typically will not consider former violent offenders
HS= High School diploma or equivalent
HS+ High School diploma plus experience
BS Bachelor of Science degree

Community Anchor Institutions (CAIs): Community anchors play a crucial role in broadband deployment, especially in underserved or unserved areas. They act as key institutions or organizations within a community that have a significant impact on the broadband infrastructure and digital connectivity in the region. Here are some of the key roles community anchors play in broadband deployment:

1. Their presence can act as anchor points for broadband networks, facilitating easier and more cost-effective deployment.
2. Community anchors generate significant data and market demand due to the large number of users they serve.
3. Community anchors often have access to various funding sources, grants, and partnerships that can be leveraged to support broadband deployment projects.
4. Access to high-speed broadband through community anchors can attract businesses and economic development opportunities to the area.
5. During emergencies or disasters, community anchors can become vital communication hubs and information centers.
6. Successful broadband deployment in community anchor institutions can serve as a model for other parts of the community.

The CBO will assess CAIs and their connections using the most recent data available. The CBO will update this dataset and perform speed tests to evaluate service levels for these CAIs. Furthermore, the CBO will analyze the potential for utilizing CAIs as fixed wireless connectivity hubs to extend service to nearby areas currently lacking adequate coverage. This plan aims to achieve universal service and address the needs of unserved or underserved locations.

Affordability: Affordability is a major driver to adoption. In 2022, the CBO surveyed residents and found that 38% of those who responded claimed that affordability was the number one issue as to why they do not have access to high-speed internet. In order to address this barrier, the CBO has worked with partners on outreach to increase ACP enrollment. According to the White House, 758,000 Colorado households are eligible for the ACP. As of July 2023, Colorado has over 208,000 households enrolled in ACP, or 27.5% of all eligible households. In an effort to address the gap of affordability, the CBO requires that all grantees of state and federal funded grant programs provide a low-cost option in their pricing tiers. This policy was made permanent in 2021 when the state allocated American Rescue Plan Act funding towards broadband programs.

Digital Equity: The CBO acknowledges the existing gaps in digital equity. As of 2022, the digital equity gap accounted for 44% of the reasons why some individuals lack access to high-speed internet in the state. The breakdown of digital equity gaps is as follows: 38% of Colorado residents without at-home broadband cited cost as the primary obstacle, 15% of households do not possess a computer at home, and 69% of residents feel they lack the necessary skills to use a broadband connection effectively.

To address these challenges, Colorado has implemented numerous strategies and initiatives. While the list of initiatives is extensive, provided below are a few programs that the CBO has highlighted in an effort to close the digital equity gap:

1. Since 2015, the Colorado High-Cost Support Mechanism (HCSM) has provided financial assistance for basic telecommunications services.
2. The Department of Education awarded $20 million through the Connecting Colorado Students program, aimed at increasing broadband access for students, educators, and staff.
3. During the Covid pandemic, the CBO, in collaboration with the Office of eHealth Innovation, awarded $15 million towards telehealth initiatives.
4. The CBO, in partnership with the Colorado Commission of Indian Affairs, allocated $20 million in 2021 to deploy infrastructure on tribal lands and provide devices to Indian Tribes or nations.
5. The CBO has collaborated with the Mile High United Way 2-1-1 to review and update digital literacy and inclusion materials.
6. The OFOW digital equity committees partnered with CDE to provide Northstar Digital Literacy licenses to the public workforce system and piloted VoxyEngen with three sites.
7. The state delivered a technical assistance module with the Colorado Workforce Development Council (CWDC) to seven organizations to bridge the digital divide as part of their service delivery.
8. The state created a digital inclusion program for students in partnership with CDHE and Fort Lewis College.
9. The state launched the Remote Work Initiative with CWDC, providing remote work skills training to workers.

Efforts to bridge the digital equity gap continue with ongoing developments. The CBO and OFOW are currently working on the Digital Access Plan, which will conduct a landscape analysis of existing digital literacy programs. Based on the plan's findings, the state will develop strategies to address any gaps in digital literacy programming. Furthermore, the

existing digital navigator pilots have been expanded to cover several regions in the state, aiming to enhance digital equity outcomes.
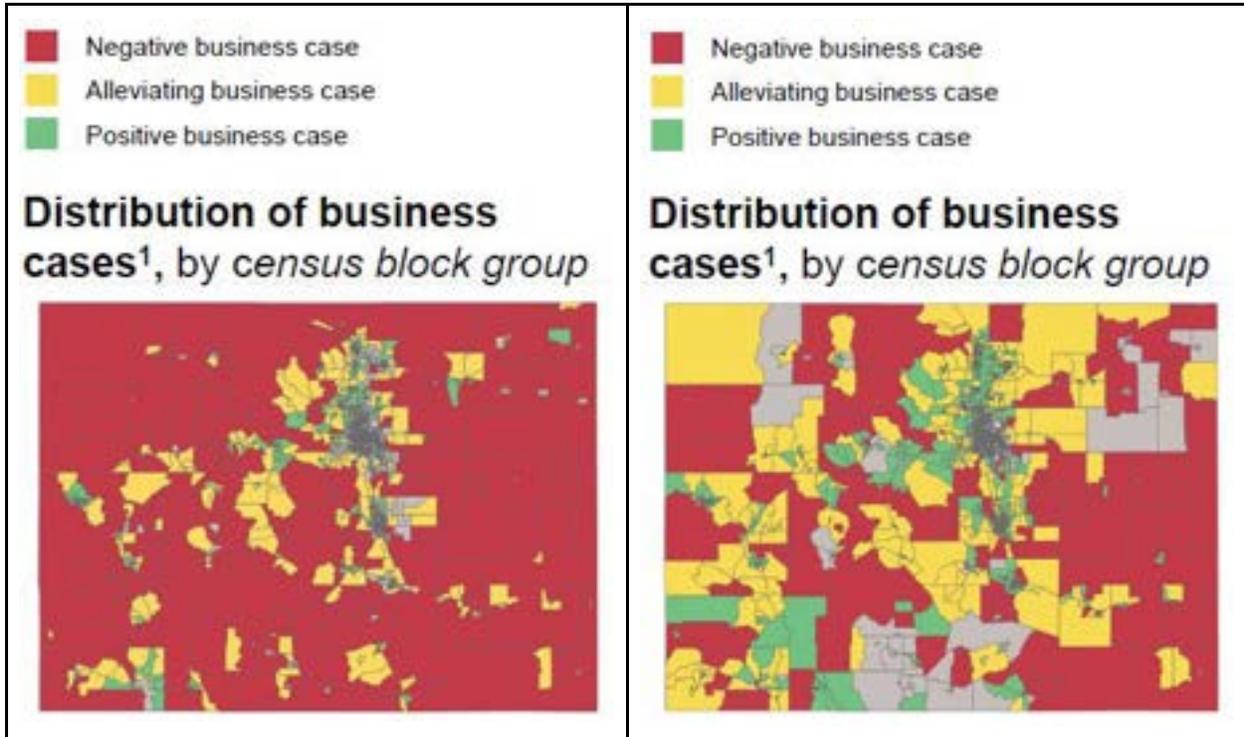
4 Obstacles or Barriers

Topography

The State of Colorado faces unique challenges when it comes to deploying broadband infrastructure. The state's topography varies greatly, ranging from flat plains to towering mountains and deep canyons. Mountainous regions, in particular, consist of granite and other forms of rock and stone that are extremely difficult to cut through, resulting in significant time and expense for burying fiber cables.

Rural Characteristics

Numerous rural communities are scattered across sparsely populated areas, creating barriers to building and accessing affordable, reliable, and high-speed internet services. According to the State Office of Rural Health's "Snapshot of Rural Health - 2022," 12.2% or 722,419 people of Colorado's population reside in rural areas. Furthermore, 47 out of 64 Colorado counties, comprising 77% of the state's landmass in square miles, are considered rural or frontier. Unfortunately, Colorado's rural population still lacks adequate access to digital infrastructure, leading to the widening digital divide in the state. One of the primary reasons for limited access in these rural areas is the often unfavorable business case for investment in broadband infrastructure as illustrated in Table 14.

Table 14: Business Case for Unserved and Underserved Locations Distribution

Unserved Locations Business Case	Underserved Locations Business Case

Distribution of business cases[1], by *census block group*

![red]	Negative business case
![yellow]	Alleviating business case
![green]	Positive business case

1. Values for served, underserved, and unserved locations reflect location totals when locations to be served by RDOF, CAFII, and USDA are considered served.

Negative Business Case - A negative business case arises when the total cost-to-serve is lower than the initial capital expenditure (CapEx). In this situation, the project is not financially sustainable on its own, and it requires external support, usually in the form of subsidies, to cover the shortfall.

Alleviating Business Case - The alleviating business case occurs when the total cost-to-serve is higher than the CapEx, but it is still negative. While the project may not be profitable enough to sustain itself, the shortfall is less severe compared to a fully negative business case. As with the negative case, an alleviating business case also requires subsidies to bridge the financial gap.

Positive Business Case - A positive business case is the most desirable outcome, where the total cost-to-serve is higher than the CapEx, and it is positive. In this situation, the project generates enough revenue to cover its operational costs and provides a reasonable return on investment. A positive business case doesn't necessitate subsidies and indicates that the project is financially viable and sustainable.

To summarize, negative and alleviating business cases require additional financial support in the form of subsidies to make the projects financially feasible, whereas a positive business case signifies that the project is self-sustaining and can generate profits without external aid.

Affordable Services

Affordability of high-speed internet plans may act as a barrier to adoption. According to the Colorado Broadband Roadmap, 38% of Colorado residents without at-home broadband cited cost as the main reason. To address this issue, the Advance Colorado Broadband Grant programs require all subrecipients to participate in the Affordable Connectivity Program. Additionally, the State of Colorado mandates that all subrecipients offer a low-cost option not exceeding $50 per month for broadband service, including any associated costs such as modem and/or router rental, to make it more accessible to consumers.

Devices and Applications

Another potential barrier to broadband adoption is limited access to devices and applications. Research conducted for the Colorado Broadband Roadmap reveals that 15% of Colorado households do not have a computer at home. To address this issue, the state will actively work towards reducing costs through state programs and supporting partnerships that offer low-cost devices to the public.

Digital Skills and Support

The Colorado Broadband Roadmap highlights that only 69% of the state's residents possess the necessary skills to effectively utilize a broadband connection. To bridge this gap, the state will conduct a thorough landscape analysis of existing digital literacy programs and develop strategies to address any shortcomings. Additionally, the plan involves conducting digital navigator pilots within targeted populations, evaluating successful strategies, and fostering public-private partnerships to enhance technology skills and confidence.

Supply Chain and Materials

The CBO foresees challenges regarding the supply chain and availability of materials as states nationwide embark on deploying broadband infrastructure concurrently. According to the Fiber Broadband Association, these supply chain issues can arise from various factors, such as raw material availability, manufacturing, assembly, and even labor shortages. Based on insights from industry professionals, the CBO expects lead times for certain materials to extend from weeks to months, ultimately impacting the implementation of projects. The CBO will mitigate these challenges by making adjustments to agreements and contract language to facilitate efficient reimbursements of materials.

Labor Shortages / Workforce Training

While BEAD funding presents a significant opportunity to expand broadband connectivity, a shortage of skilled industry laborers raises concerns about the timely construction and deployment of services. The CBO has collaborated with multiple telecommunications stakeholders to gain a better understanding of the current labor situation. This shortage is likely to be exacerbated as several states compete for broadband labor simultaneously. Moreover, many of the positions required for broadband deployment are also in demand for other IIJA programs within the state. The CBO will mitigate this challenge by implementing the strategies in the Workforce Development Plan in Appendix 1.

Regulatory and Permitting Processes

Difficult-to-understand regulatory requirements and time-consuming permitting processes pose challenges to the efficient deployment of broadband services. To address this, the CBO has established the Broadband Ready Community Program, which includes a checklist and certification program designed to encourage communities to be prepared for the deployment of federal broadband funds.

The Broadband Ready Community Checklist comprises specific tasks that assist local communities and their partners in successfully planning and executing broadband projects. Upon completing the checklist tasks, communities become eligible for designation by the CBO as a Broadband Ready Certified Community. Although this designation does not guarantee state and federal broadband funding, it signals that the community is a willing partner that has minimized barriers to broadband infrastructure deployment.

Regulation of Municipal/Government-Owned Networks

The CBO has been addressing another regulatory issue concerning the ability of municipalities and other government entities to undertake broadband projects. In 2005, the Colorado General Assembly approved a state law, SB 152, which prohibited municipalities from pursuing broadband projects unless they opted out of the prohibition through a voter referendum. Since then, Colorado communities have opted out of the law on 123 occasions. In the 2023 legislative session, the CBO collaborated with legislative staff to pursue repealing the voter referendum requirement. As a result, SB23-183 was signed by the Governor on May 1, 2023, enabling Colorado's local governments to provide or partner with broadband internet services without having to pass voter referendums.

5 Implementation Plan

5.1 Stakeholder Engagement Process

For over a decade, the State of Colorado has made significant strides in addressing broadband issues through consistent stakeholder engagement. By actively involving diverse groups of stakeholders, the CBO has been able to focus on initiatives that have a real impact on communities, such as enhancing broadband access, promoting digital equity, and modernizing government services.

The CBO collaborates with a wide array of stakeholders, spanning various sectors and levels of expertise, all crucial to the success of broadband initiatives. This inclusive approach fosters a comprehensive understanding of the challenges and opportunities faced by the state in its pursuit of better broadband services. A complete list of stakeholders can be found in Appendix 3. The stakeholder groups include:

- Broadband Consultants

- Broadband Providers
- Community Leaders
- State Government
- Digital Equity Organizations and Experts
- Internet Service Providers
- Joint Technology Committee (JTC)

Engagement Strategy

To ensure ongoing and effective stakeholder involvement, the CBO employs a multifaceted engagement strategy, utilizing diverse communication channels. This approach helps maintain a steady flow of valuable feedback and insights, making broadband initiatives more relevant and impactful. The key elements of the engagement strategy are as follows:

- **Community Leaders Roundtable:** Since September 2022, the CBO has been organizing bi-monthly Community Leader Roundtables. These gatherings bring together a diverse mix of participants, including community leaders, local governments, school districts, healthcare facilities, public safety officials, multi-use facility owners, and others. During the roundtables, updates are shared, and open discussions are facilitated, covering various broadband-related topics. Participants have the opportunity to engage in the dialogue surrounding broadband funding deployment and the CBO gains valuable feedback for use in the development of federal and state broadband programs.

- **Industry Leaders Roundtable**: Since September 2022, the CBO has been hosting bi-monthly Industry Roundtables, specifically tailored for all private sector partners. These discussions serve as a platform for industry representatives to actively participate in grant development and funding processes. Their valuable insights contribute to CPF/BEAD planning, and other CBO activities, ensuring that the broadband strategies align with industry perspectives and expertise.

- **Outreach and Education Webinars:** The CBO hosts regular webinars covering various topics, such as grant programs, mapping tools, and application materials to keep stakeholders informed and engaged.

- **Legislative Presentations:** The CBO delivers presentations to the Joint Technology Committee within the Colorado General Assembly, which oversees the Governor's Office of Information Technology and CBO. During these presentations, the CBO Executive Director updates the JTC on grant programs, operational changes, upcoming policy developments, outreach and education opportunities, and performance metric outcomes.

- **Annual Broadband Roadshow:** Each summer, the CBO along with partner agencies, facilitate a statewide summer roadshow. Roadshows provide an opportunity to connect

with communities in all 14 planning and management regions of Colorado. The focus is on discussing broadband equity, access, and deployment. The state utilizes the listening tour to gather input from all planning regions on grant programs offered by the CBO. The roadshows include regional summits with detailed information about grant programs and application processes. Additionally, the digital equity team attends meetings to offer updates on the Digital Access Plan.

- **Workforce Planning Sessions:** The CBO conducted four targeted workforce planning sessions in partnership with the Office of the Future of Work within the Colorado Department of Labor and Employment. These sessions involve representatives from various sectors, community leaders, and industry partners. The insights gathered from these sessions will inform the Workforce Development Plan and the Colorado Workforce Council Talent Pipeline report.

- **Tribal Consultations:** In collaboration with the Colorado Commission on Indian Affairs, the CBO has planned a Tribal Consultation scheduled for August 2023. This consultation will involve both federally-recognized tribes, the Southern Ute Indian Tribe, and the Ute Mountain Ute Tribe. The CBO team has already engaged with representatives from both tribes to discuss their broadband plans, which will be incorporated into the Broadband Roadmap in 2023.

- **Local Coordination Event:** On April 19-20, 2023, the CBO partnered with five other entities, including the NTIA, to host the Internet for All Colorado Broadband Summit in Westminster, Colorado. The summit brought together over 250 in-person and over 100 virtual participants to discuss all aspects of broadband. The event featured discussions on connecting unserved and underserved locations using federal BEAD funding. Representatives from the CBO, NTIA, Tribal communities, municipal leaders, industry professionals, and others were present. As a result of a successful event, this is now an annual event, engaging communities, press, political leaders, and the public.

- **Digital Equity Committee Meetings:** These meetings provide a platform for building relationships with stakeholder organizations. The purpose of the meetings are to update stakeholders on the progress of the Digital Access Plan and seek input and feedback on the plan's components.

- **Monthly Newsletter:** The CBO distributes a monthly newsletter to over 9,500 recipients, offering comprehensive information on all broadband-related matters in Colorado. Interested individuals can sign up for the newsletter, and archived issues are available online.

Regular Meetings and Stakeholder Updates: The CBO maintains an active schedule of meetings and updates to ensure consistent engagement with stakeholders. These opportunities include:

- **Regional Councils of Government and Economic Development Organizations:** The CBO holds weekly meetings to discuss broadband plans and provide updates on ongoing initiatives.

- **Communications Workers of America:** On a monthly basis, the CBO engages in discussions with the Communications Workers of America to address workforce-related issues in the broadband sector.

- **Colorado State University:** Every other week, the CBO collaborates with Colorado State University to explore rural broadband initiatives and identify potential partnership opportunities.

- **Colorado Communications Utilities Alliance:** The CBO meets monthly with the Colorado Communications Utilities Alliance to foster collaboration and share progress on broadband-related matters.

- **Internal State Government Stakeholder Group:** Monthly presentations are made by the CBO to an internal state government stakeholder group to provide updates and ensure alignment with broader government objectives.

- **Colorado Commission on Indian Affairs Newsletter:** The CBO contributes monthly updates to the Colorado Commission on Indian Affairs newsletter, ensuring tribal communities are informed about ongoing broadband activities.

To keep the public and media informed, the CBO employs various strategies. The CBO has developed a dedicated webpage called [Broadband in the News](#) to document media coverage of Colorado broadband activities, promoting transparency and accessibility. Regular press releases and media alerts are sent to Colorado news sources, highlighting the CBO's efforts and achievements in the broadband space. The CBO has hosted media events, such as a press conference with Lt. Governor Primavera and Education Superhighway, to encourage nonprofit participation and eligible households to enroll in the Affordable Connectivity Plan which has boosted enrollment.

The CBO has established an Advance Colorado Broadband email address **Advance_CBO@state.co.us** to foster an open and continuous feedback loop with stakeholders. This enables stakeholders to ask questions, share feedback, and engage with the CBO in an accessible manner.

5.2 Priorities

The principles outlined below inform the development and implementation of the Five-Year Action Plan. These priorities align with the CBO's vision for broadband deployment.

Table 15: Priorities for Broadband Deployment

Priority	Description
Inclusivity	Ensure that all communities, regardless of their geographical location, income level, or demographics, have access to affordable broadband services.
Collaboration	Foster partnerships between government entities, internet service providers (ISPs), community organizations, and local businesses to pool resources, expertise, and funding.
Assess Needs	Conduct comprehensive assessments to understand the specific connectivity needs of each community through data-driven strategies.
Infrastructure Investments	Allocate adequate resources and funding for the development and expansion of broadband infrastructure, including fiber optic cables, and alternative technologies.
Regulatory Reform	Evaluate and update existing regulations to streamline the development process for broadband infrastructure.
Community Engagement	Engage community members and local leaders in the decision-making process.
Digital Equity	Implement comprehensive programs to enhance digital literacy and provide training on digital skills.
Affordability	Promote affordability of broadband services by encouraging competition among ISPs and providing subsidies or incentives to low-income households.
Future-Proofing	Anticipate and prioritize future technological advancements and plan for scalable and adaptable broadband infrastructure.

Sustainability and Resilience	Integrate sustainability principles into broadband infrastructure deployment that consider climate resilience to mitigate the risks of natural disasters and ensure uninterrupted connectivity.

5.3 Planned Activities

The following activities are planned in order to accomplish the strategies identified in section 5.4.

Project Area Definition
(Funding sources are BEAD, HCSM, and CPF)

Activities that are planned towards identified strategies include:

- Conduct ongoing needs assessments to inform funding decisions.
- Identify areas with outdated or insufficient infrastructure that hinders the expansion of broadband se
- Collect data on demographics and population density to identify areas with a significant number of u
- Identify Economic Development Zones to understand areas that are vital for economic growth where job creation.
- Engage with local stakeholders which will help prioritize project areas that align with local needs.
- Map out priority areas to identify where broadband infrastructure is most needed.

Project and Funding Prioritization
(Funding sources are BEAD, HCSM, and CPF)

Activities that are planned towards identified strategies include:

- Gather relevant data, including demographic information, population density, economic zones, educ
- Evaluate the potential impact of broadband projects in different areas to determine projects with gr
- Assess the technical feasibility of implementing broadband infrastructure in each prioritized area wh
- Conduct a cost-benefit analysis for each project area and prioritize projects with a positive return or
- Identify potential risks and challenges associated with each project area.
- Prioritize projects in areas that are scalable and can accommodate future long-term growth.
- Create a set of prioritization and ranking criteria that take into account need, impact, feasibility, co

Maximize Broadband Deployment
(Funding sources are BEAD, HCSM, and CPF)

Activities that are planned towards identified strategies include:

- Identify priority areas that require immediate attention such as rural communities, economically disa

facilities, and business districts.

- Analyze existing broadband coverage, internet speeds, and infrastructure gaps and challenges faced
- Establish public-private partnerships to bring additional resources, expertise, and investment to acce
- Identify and leverage existing infrastructure, such as fiber-optic networks, utility poles, or governme speed up the process.
- Identify potential funding sources like grants, subsidies, private investments, financing and public-pr
- Work with local authorities to streamline permitting processes and reduce bureaucratic hurdles throu
- Encourage technology neutrality, which allows various broadband technologies (fiber, wireless, satel
- Develop a statewide middle mile program and identify a sustainable funding source to support last m

Bolster and Increase Labor Resources
(Funding sources are BEAD, HCSM, and CPF)

Activities that are planned towards identified strategies include:

- Develop a landscape analysis of existing training programs and workforce development efforts and th
- Explore partnerships between training/education providers and industry for workforce needs.
- Establish a core working group for the Broadband Workforce Plan to meet biweekly to inform and imp

Develop a funding strategy for broadband workforce efforts including:

- Alignment with other infrastructure projects.
- Funding for staff to support the Workforce Development Plan implementation.
- Secure funding for a Broadband Workforce Advisor to support the implementation of the workforce st entities related to this effort.
- Support continuous stakeholder engagement to inform landscape analysis and sector partnership crea
- Establish a statewide sector partnership for the broadband workforce.
- Develop an awareness campaign for the broadband workforce.

Deploy awareness campaign to include:

- Telecommunications and construction industry pathways, fact sheets and one-pagers connected to b
- Support K-12 engagement and telecommunications career education.
- Publish telecommunication job profiles.
- Develop work-based learning continuum for broadband jobs.
- Promote training opportunities and pilot & scale workforce programs.
- Evaluate funded programs and workforce needs.
- Transition pathways from broadband deployment created and shared through the workforce system.

Improve Digital Equity & Affordability
(Funding sources are BEAD, CPF, HCSM, and DE)

Activities that are planned towards identified strategies include:

- Expand and upgrade infrastructure investment by increasing the availability of high-speed internet a
- Require affordable and/or subsidized plans for low-income households and implement pricing regulat
- Provide digital literacy programs that focus on training and education programs for individuals who n
- Fund and partner with organizations that provide digital devices such as computers, laptops, tablets,
- Identify and fund public access points, such as community centers, libraries, and schools, where indi
  even if they don't have internet at home.
- Require inclusive content and services that cater to diverse populations, including people with disabi
- Required data privacy and security standards as part of the CBO's grant programs to protect individu
  services.
- Develop and train digital navigators for target populations to increase broadband and technology use
- Make government services and information available online and ensure alternative methods for acces
- Integrate digital skills training and access to technology into school curriculums to prepare students a

5.4   Key Execution Strategies

The execution strategies outlined below specify how the CBO plans to achieve the state's broadband goals. The strategies will aid in achieving Colorado's economic recovery, improve resiliency, help communities thrive and ensure that everyone has access to essential activities and services needed for a better quality of life.

Strategy 1: Align Equity and Infrastructure Goals
To address the barriers to adoption, the CBO's programs will prioritize digital equity and infrastructure in tandem to maximize existing and new broadband investment opportunities by doing the following:

- Designate high-cost areas in Colorado that consider poverty levels, rural locations, and race and ethnicity to target funding.
- Create a funding dashboard that identifies areas of critical need, current and proposed investments.

- Require affordability as a sub-grantee criteria and prioritize funding based on monthly rates in targeted areas.
- Conduct a CBO-led listening tour each year to solicit feedback from communities and industry stakeholders.
- Identify broadband strategies that support the capabilities to assist first responders, community networks and volunteer engagement.
- Develop serviceable location data mapping capabilities that reflect real-time speed tests, latency and current technologies.

Strategy 2: Optimize Deployment

To optimize deployment the CBO must consider potential labor and supply chain shortages and focus on growing workforce development programs by doing the following:

- Grow workforce development programs to prepare and support industry to address labor shortages that are barriers to deployment.
- Leverage partnerships between OIT and CDLE to develop a workforce development program and strategies to increase deployment-related roles in Colorado, especially in outdoor and labor-intense roles (e.g., apprenticeship, technical/vocational training, school partnerships.)
- Avoid imposing unnecessary restrictions on the flow of federal funding to agencies, which are then passed down to sub-recipients that result in delays and administrative barriers that increase workloads.
- Improve the contracting and procurement process by adding capacity and right sizing contracts for broadband projects.
- Develop a Broadband Community Readiness Certification for local governments to help support efficient permitting processes and prioritize sub-grantees who participate in the program.
- Focus workforce development on increasing the number of laborers, foremen, locators, restoration crews and safety leads defined in the Colorado Broadband Roadmap.
- Consider a multi-state approach to the workforce program to address gaps in deployment related roles.

Strategy 3: Favor Fiber Networks

Through universal access to broadband, the CBO will fund networks that are future proof requiring use of the best technology. The state's broadband program gives preference to fiber deployment. Consideration for the use of different technology mixes is a strategy only when the business case supports an alternative. The grant program design will be conservative and competitive as Colorado is a high-cost state and criteria will include incentives for investment in areas of critical need. Projects will include both last and middle mile infrastructure and a mix of fiber and alternative technologies that achieve the following:

- Incentivize fiber deployment in areas where a negative business case for investment for the unserved and underserved exists by targeting funds to these areas.
- Utilize location-level mapping and analytics to assess areas of critical need and to target areas that require subsidies.
- In areas where there is a negative or alleviating business case for fiber for the unserved and underserved, establish match requirements for sub-recipients that provide an incentive for investment.
- Consider greenfield deployment to reduce the costs of investment and increase competition.
- Design a grant program that encourages brownfield build outs that bring down costs by upgrading existing infrastructure.
- Set a high-cost per location threshold, which balances funding the use of fiber and alternative technologies to expand coverage for harder to serve areas.
- Require a competitive match for sub-recipients where there is a positive business case for investment by the private sector. Match requirements will be part of the grant program application process that will be made available in 2023.
- Design a grant program that encourages brownfield build outs that bring down costs by upgrading existing infrastructure.
- The state will provide a subsidy for at least 15% of capital expenditures by weighing non-financial considerations in the award process and where there is a lack of competition.

Strategy 4: Expand Digital Inclusion and Adoption Efforts

Gaps in digital equity make up 44% of the lack of internet access in Colorado. The NTIA attributes adoption gaps in digital equity to affordable access to service, access to internet-enabled devices and digital literacy. The drivers of the adoption gap in Colorado where households lack access are due to affordability (38%), devices (15%), and digital literacy (69%). Connecting households to high-speed internet access requires investment in digital equity which will occur by using the following approaches:

- Conduct a landscape analysis of existing digital literacy programs and develop strategies to address any gaps.
- Conduct a landscape analysis of existing digital equity and affordability programs and develop strategies to address any gaps.
- Conduct digital navigator pilots within targeted populations, evaluate strategies that work and leverage public-private partnerships to build skills and confidence in the use of technology.
- Lower costs through state programs and support partnerships that provide low-cost devices.
- In partnership with the Office of Future of Work, develop digital skills training that invests in capacity to ensure effective education and to connect individuals with related resources.

- Fund targeted training programs that upskill individuals through classes and training programs, with a focus on covered populations (e.g. people who are incarcerated, aging, and people of color).
- Stand-up digital navigator programs to deploy navigators in communities (geographic or affiliation) to develop specific understanding of barriers in community and coordinate resources as needed.
- Develop a statewide Digital Access Plan in partnership with the Office of Future of Work.
- Increase Affordable Connectivity Program (ACP) uptake through outreach, education, support and incentivize participation among eligible subscribers.
- Improve delivery of government services leveraging technology and facilitate a culture of innovation and efficiency among government agencies.
- Leverage strategies and programs already in place to improve the digital economy to maximize broadband investment.

Strategy 5: Listen to and Learn From the Community

Broadband is essential to connecting and empowering individuals and groups to meet collective needs. The CBO will develop a model that encourages and empowers stakeholders to convene around shared goals and values to find solutions that improve the digital divide by achieving the following:

- Link the operations of infrastructure and public, private and community broadband networks to encourage collaboration and ensure resiliency.
- Leverage open access deployment and ensure that connectivity to network infrastructure is available during emergencies.
- Establish community and industry roundtables to collect feedback to inform grant making and report on the status of the Advance Colorado Broadband program.
- Conduct annual assessments on the state of broadband, risks and updates on strategies that include communications, industry capabilities and recovery initiatives.

5.5   Estimated Timeline for Universal Service

The strategies identified in 5.4 are listed below with an estimated timeline for completion. Each activity has several associated tasks. By 2027, the CBO will achieve universal coverage through strategies, planned activities and goals.

Table 16: Estimated Timeline for Universal Service

Year/Stage	Activities
2023	- Develop serviceable location data mapping capabilities that reflect real-time speed tests, latency and current technologies.

	- Utilize location-level mapping and analytics to assess areas of critical need and to target areas that require subsidies. - Identify broadband strategies that support the capabilities to assist first responders, community networks and volunteer engagement. - Require affordability as a sub-grantee criteria and prioritize funding based on monthly rates in targeted areas. - Develop a Broadband Community Readiness Certification for local governments to help support efficient permitting processes and prioritize sub-grantees who participate in the program. - Conduct CBO-led listening tours annually to solicit feedback from communities and industry stakeholders. - Avoid imposing unnecessary restrictions on the flow of federal funding to agencies, which are then passed down to sub-recipients that result in delays and administrative barriers that increase workloads. - Improve the contracting and procurement process by adding capacity and right sizing contracts for broadband projects. - Conduct a landscape analysis of existing digital literacy programs and develop strategies to address any gaps. - Stand-up digital navigator program to deploy navigators in communities (geographic or affiliation) to develop specific understanding of barriers in community and coordinate resources as needed. - Increase Affordable Connectivity Program (ACP) uptake through outreach, education, support and incentivize participation among eligible subscribers. - Establish community and industry roundtables to collect feedback to inform grant making and report on the status of the Advance Colorado Broadband program.
2024	- Create a funding dashboard that identifies areas of critical need, current and proposed investments. - Designate high-cost areas in Colorado that consider poverty levels, rural locations, and race and ethnicity to target funding. - Incentivize fiber deployment in areas where a negative business case for investment for the unserved and underserved exists by targeting funds to these areas. - In areas where there is a negative or alleviating business case for fiber for the unserved and underserved, establish match

	requirements for sub-recipients that provide an incentive for investment.
	● Leverage partnerships between OIT and CDLE to develop a workforce development program and strategies to increase deployment-related roles in Colorado, especially in outdoor and labor-intense roles (e.g., apprenticeship, technical/vocational training, school partnerships.)
	● Design a grant program that encourages brownfield build outs that bring down costs by upgrading existing infrastructure.
	● Set a high-cost per location threshold, which balances funding the use of fiber and alternative technologies to expand coverage for harder to serve areas.
	● Require a competitive match for sub-recipients where there is a positive business case for investment by the private sector.
	● Develop match requirements that will be part of the grant program application process.
	● Conduct digital navigator pilots within targeted populations, evaluate strategies that work and leverage public-private partnerships to build skills and confidence in the use of technology.
	● Lower costs through state programs and support partnerships that provide low-cost devices.
	● Develop a statewide Digital Access Plan in partnership with the Office of Future of Work.
	● Conduct a landscape analysis of existing digital literacy programs and develop strategies to address any gaps.
2025	● Consider greenfield deployment to reduce the costs of investment and increase competition.
	● Grow workforce development programs to prepare and support industry to address labor shortages that are barriers to deployment.
	● Focus workforce development on increasing the number of laborers, foremen, locators, restoration crews and safety leads defined in the Closing the Digital Divide Strategic Plan.
	● Consider a multi-state approach to the workforce program to address gaps in deployment related roles.
	● In partnership with the Office of Future of Work, develop digital skills training that invests in capacity to ensure effective education and to connect individuals with related resources.
	● Fund targeted training programs that upskill individuals through classes and training programs, with a focus on covered

	populations (e.g. people who are incarcerated, aging, and people of color).
2026	● Provide a subsidy for at least 15% of capital expenditures by weighing non-financial considerations in the award process and where there is a lack of competition. ● Improve delivery of government services leveraging technology and facilitate a culture of innovation and efficiency among government agencies. ● Leverage strategies and programs already in place to improve the digital economy to maximize broadband investment.
2027	● Link the operations of infrastructure and public, private and community broadband networks to encourage collaboration and ensure resiliency. ● Leverage open access deployment and ensure that connectivity to network infrastructure is available during emergencies. ● Conduct annual assessments on the state of broadband, risks and updates on strategies that include communications, industry capabilities and recovery initiatives.

5.6   Estimated Cost for Universal Service

The CBO conducted an extensive broadband study to assess the current state of broadband and estimate the total cost of providing service to all areas lacking coverage. According to the report, connecting each of the approximately 120,000 unserved and 240,000 underserved locations with fiber-to-the-home service would require an investment ranging from $1.9 billion to $2.1 billion. However, when considering other federal programs like RDOF, CAFII, and USDA ReConnect, which may cover some of these locations, the estimated cost reduces to $1.3 billion to $1.4 billion.

Colorado anticipates receiving $997,274,324 from both Advance-CPF and Advance-BEAD programs. These programs come with a match requirement, with an average of 25%, leading to an additional investment of $249,318,581. Therefore, the combined investment from these two programs amounts to $1,246,592,905.

According to a recent Cartesian report commissioned by ACA Connects, it is projected that this level of funding will provide fiber-to-the-home access to approximately 40-55% of the unserved homes. For the remaining locations, alternative technologies will be utilized, or will require state funding to achieve coverage.

5.7   Alignment

The Five-Year Action Plan is a reflection of the Colorado Broadband Roadmap that was created in 2022 that established a statewide strategy to address the digital divide. Other strategies that are aligned with this plan are the Workforce Development and Digital Access Plans. However, these plans are being developed and will be made available on the CBO website when they are available. Provided is a summary of the existing state agency strategies that align with the Five-Year Action Plan:

Table 17: Existing Broadband Strategy Alignment

Individual Agency Broadband Plan Strategies
Colorado Rural Communities - Department of Local Affairs (DOLA)
Strategy 1a: Leverage state and federal funding to improve and expand investments in middle and last mile infrastructure in areas with little to no access to broadband, so that communities have access to affordable reliable broadband services. Strategy 2a: Foster and support successful regional collaborations that facilitate public-public and public-private partnerships in rural communities to improve the business case for investment in broadband. Strategy 3a: Encourage local governments to address barriers in regulatory and permitting processes to support broadband deployment. Strategy 4a: Support efforts to provide resources, outreach, partnerships, education and tools to strengthen digital adoption rates in rural communities across Colorado.
Colorado State Library (CSL)
Strategy 1b: CSL recognizes that local libraries serve as anchor institutions for broadband in local communities. As modern life occurs more online, higher speed access becomes increasingly necessary. To meet this growing need, local libraries need the capacity to provide broadband speeds and devices to their patrons. Strategy 2b: CSL will build the capacity of public libraries to make informed decisions on broadband improvement, technology purchases, and information technology planning and implementation to better serve their communities. Strategy 3b: CSL will disseminate and support best practices and standards for public libraries to continuously sustain and improve broadband access for all. Strategy 4b: CSL recognizes rural barriers to healthcare access and supports Colorado's equitable statewide telehealth access, adoption, and sustainability. By collaborating with

the Office of e-Health & Innovation, CSL will assess how public libraries in rural communities can participate in the overall effort.

Colorado State Prisons - Department of Corrections (DOC)

Strategy 1c: Prioritize extension of fiber from the boundary line to and throughout facilities so that the incarcerated may benefit from increased security, emergency services response time, healthcare, video legal council, and much more.

Strategy 2c: Prioritize WiFi availability in correctional facilities to allow telemedicine carts to be remotely connected to inmate patients with specialized medical providers in the community.

Strategy 3c: Increase educational opportunities for the incarcerated population through online educational programming so that illiteracy is improved, career options increase, and balances reentry into society thus reducing recidivism.

Strategy 4c: Prioritize delivery of medical and behavioral health online treatment programs so that inmates can improve overall health that reduces the overall societal burden upon release.

Strategy 5c: Prioritize sufficient connectivity and bandwidth to support all inmates to have a personal tablet to support friends and family video sessions, email messaging, and increased educational opportunities so that inmates can stay connected and gain online experience to prepare for reentry into the community.

Telemedicine - Office of eHealth Innovation (OeHI)

Strategy 1d: Expand strategic partnerships with agencies and community based organizations to increase digital equity and inclusion.

Strategy 2d: Establish baseline measurement of disparities and inequities in telehealth utilization amongst Colorado communities.

Strategy 3d: Support healthcare providers in equitably expanding telehealth services.

Strategy 4d: Increase awareness and knowledge of telehealth in communities with the lowest telehealth utilization rates.

State Parks - Colorado Parks & Wildlife (CPW)

Strategy 1e: Work with local communities and other entities as an anchor institution to improve reliable, high-speed broadband.

Strategy 2e: Provide high-quality broadband internet access to 27 state parks.

Strategy 3e: Explore in-house staffing for broadband project management support.
Strategy 4e: Define base optimization for business needs.

Tourism - Colorado Tourism Office (CTO)
Strategy 1f: Research Welcome Center Integrated Technology Platforms that integrate multi-device control of kiosks, mobile devices, microsites, and digital signage.   Strategy 2f: Review Welcome Center Integrated Technology Platform solutions to evaluate visitor experience, efficiency and on-demand services, interactive engagement, destination management, brand management, and wayfinding solutions. The data acquisition platform would ideally be cloud-based for real time information.   Strategy 3f: Create an advisory group of statewide stakeholders to review and rank Welcome Center Integrated Technology Platform solutions.   Strategy 4f: Implement Welcome Center Integrated Technology Platform

K-12 Distance Learning - Colorado Department of Education (CDE)
Strategy 1g: Provide funding opportunities to districts and BOCES to increase access to broadband services for students, educators, and other staff who lack stable, reliable internet access for online learning. The following are activities that the department has already undertaken to support this goal; any additional activities would require the additional appropriation of funds: Strategy 2g: Monitor districts' and BOCES' plans for offering high-quality online and/or blended learning and for ensuring equitable access to the internet for all of their students. Identify funding sources and other opportunities to increase access to broadband services for students, educators, and other staff who lack stable, reliable internet access for both traditional in-person, online, and blended learning.

Tribes - Colorado Commission on Indian Affairs (CCIA)
[Southern Ute Indian Tribe Broadband Plan](#)   [Ute Mountain Ute Tribe's Broadband Roadmap](#)

5.8   Technical Assistance

Technical assistance is provided on many aspects that cover state and federal grant programs offered by the CBO. Technical assistance is provided via webinars and regional training throughout the year. The CBO created two programs to support stakeholders as they navigate state and federal funding for broadband projects:

[Broadband Technical Assistance Program](#)

Many unserved and underserved communities in the state are eligible for federal funding but may not have the resources necessary to prepare, plan, apply for, and administer a federal grant. To create a more equitable opportunity that allows all Colorado communities to participate in upcoming federal grant programs, the CBO created a Technical Assistance Program. Through the program, eligible entities qualify for the support and services they will need to pursue these once-in-a-generation grant opportunities. The services offered are:

- ○ Broadband strategic plan development
- ○ Broadband feasibility studies
- ○ Broadband preliminary network design services
- ○ Project cost estimation
- ○ Grant application preparation
- ○ Mapping capacity and data collection services

[Federal Funding Compliance Library](#)

The CBO created a series of training videos and resources to help potential applicants navigate federal funding rules and regulations related to the Advance Colorado Broadband program. These resources will help identify possible obstacles stakeholders may face as they begin managing federally-funded projects. Depending on the project, there may be additional requirements that apply to projects. This federal regulation compliance series applies to all federal grants, including State & Local Fiscal Recovery Fund (SLFRF), Capital Projects Fund (CPF), Broadband, Equity, Access, and Deployment (BEAD) and Digital Equity grants.

6   Conclusion

The CBO is well-prepared to seize this rare federal investment opportunity in broadband, which comes once in a generation. With over a decade of experience in mapping and six years of funding broadband through two state grant programs, Colorado is equipped to make the most of this initiative. The CBO is actively engaging with communities to gain a comprehensive understanding of broadband needs throughout the state, bolstering their boots-on-the-ground approach.

Through the Five-Year Action Plan and related strategies, the CBO is confident in its ability to provide high-speed broadband to every location in Colorado. The commitment to addressing the digital divide and achieving universal connectivity is evident in the Colorado Broadband Roadmap, which outlines how the state will utilize an estimated $1 billion in federal broadband funding to accomplish this ambitious goal.

The significance of the BEAD program is important, and the CBO is dedicated to maximizing its impact to ensure that all Coloradans can thrive in the digital age. Bridging the gap for

unserved and underserved populations across the state is a top priority for Colorado, demonstrating its unwavering commitment to connectivity for all.

7 Appendices

Appendix 1: [Draft Workforce Development Plan](#)

Appendix 2: [DOLA Broadband Projects 2012-2023](#)

Appendix 3: [Community Stakeholder List](#)

Appendix 4: [Colorado Broadband Roadmap](#)

Appendix 5: [Broadband Deployment Fund Projects](#)

Appendix 6: Affordable Connectivity Plan Engagement Events

Community/Organization	Event	# of Attendees	Date
Jewish Family Support	Virtual	4 attendees	August, 24th 2022
CEC Back to School Night	In Person	80+ attendees	September, 15th 2022
Littleton Community Fair	In person	100+ attendees	September, 17th 2022
Financial Aid Advisor - Higher Education	Virtual	63 attendees	September, 23 2022
DPS Community	Facebook live - Spanish Interview	Multiple	October, 5th 2022
Department of Public Safety - Community Corrections Division	Virtual	12 attendees	October, 6th 2022
KNRV 1150 AM - 96.1 FM	Radio - Spanish Interview	The signal reaches Wyoming, Colorado Springs, Limon, Frisco and most of the Denver metro area.	October, 12, 2022
Colorado Department of Higher Education	Virtual	48+ attendees	October, 19th 2022

Community Roundtable - ACP Grant	Virtual	52+ Attendees	November, 16th 2022
Eagle County - Introduction Meeting	Virtual	2 attendees	November, 16th 2022
City of Pueblo	In Person -	42 attendees	November, 17th 2022
OATS - Senior Planet Elder Community	In person	6 attendees	December, 9th 2022
Webinar - ACP Act Now	Virtual- English/Spanish	78 attendees	February, 1st 2023
Press Conference - Lt Governor Primavera	Multiple	10 in Person attendees	February 22nd, 2023
Eagle County Government	Virtual	4 attendees	March, 8th 2023
DHS Open Mic	Virtual	25 attendees	March, 16th 2023
Valley Settlement - Eagle	Virtual	2 attendees	March, 22 2023
Colorado State College	Virtual	3 attendees	March, 23 2023

Appendix 7: Affordable Connectivity Social Media Promotion

Organization	Social Media
Department of Education	Flyers English/Spanish
Division of Disability Rights	Newsletter
Northwest Council of Governments	Website and social Media
Department of Education	The Dish Newsletter
Office of Economic security	Social Media
Parks and Recreation Center	Social Media and Flyers English/Spanish
Pagosa Springs Chambers of Commerce	Flyers and Social Media English/Spanish
Greeley Government	Flyers English/Spanish
Buena Vista Public Library	Flyers English/Spanish
Larimer County Government	Social Media - Flyers English/Spanish
Colorado Department of Local Affairs	Flyers English/Spanish
Valley Settlement - Eagle	Flyers English/Spanish
Care on Location	Flyers English/Spanish
ACP Colorado Branded Tool	https://getacp.org/colorado
Partnership with 81 CO Organizations	ACP Colorado Social Media

Appendix 8: Legislation Passed in Colorado to Accelerate Broadband Deployment

2021 Legislation	Description
SB21-060 Expand Broadband Service	Requires the CBO to create a program to make access to broadband service more affordable by reimbursing Colorado subscribers for costs incurred in accessing broadband service by January 1, 2022.
SB21-072 Public Utilities Commission Modernize Electric Transmission Infrastructure	Modified definition of electric utility has the meaning set forth in section 40-42-102 (8); except that the term does not include an investor-owned utility, a municipally owned utility, or a municipally owned power authority.
SB21-103 Sunset Office of Consumer Counsel	Gives the Office of Consumer Council the authority to intervene in matters before the PUC that relate to telecommunication service, including rule making.
HB21-1109 Broadband Board Changes to Expand Broadband Service	Broadband Deployment Board moves from Department of Regulatory Affairs to OIT, previous statute 40-15-509.5 becomes 24-37.5-118 effective upon signing of the bill.
HB21-1114 School District Provision Of Internet Service	Exempts school districts from the requirement to obtain voter approval and meet other requirements before providing internet access (advanced service) to the public.
HB21-1289 Funding for Broadband Development	Codifies the CBO in the office of information technology; creates the digital inclusion grant program, the broadband stimulus grant program, and the interconnectivity grant program.
2022 Legislation	Description
SB22-083 Broadband Provider's Use of Public Rights-of-way	Requires the Department of Transportation to facilitate non-government access to public rights-of-way for the deployment of broadband.
SB22-130 State Entity Authority For Public-private Partnerships	Requires the Department of Personnel and Administration to develop and oversee a process by which certain state entities may enter into public-private partnerships, including projects for the deployment of broadband.
SB22-140 Expansion Of Experiential Learning Opportunities	Creates programs to support work-based experiential learning opportunities with businesses and colleges in Colorado. Also, requires the CBO to collaborate with the Office of Future Work to identify and support diverse partners and employers in regards to the program.
SB22-200 Rural Provider	Creates the Rural Provider Access and Affordability

Stimulus Grant Program	Stimulus Grant Program in the Department of Health Care Policy and Financing (HCPF) to provide grants to qualified rural health care providers to improve health care services in rural communities through projects that modernize the information technology infrastructure and expand access to health care, including broadband.
SB22-215 Infrastructure Investment and Jobs Act Cash Fund	Creates the Infrastructure Investment and Jobs Act (IIJA) cash fund (fund). Allocates an estimated 25% of the fund to power, grid, and broadband programs to be used as non-federal matching funds for infrastructure projects as set forth in the IIJA.
HB22-1172 Department of Governor, Lt Governor, & OSPB Supplemental	Extends the time for the CBO to use an FY20-21 appropriation of $35 million to implement the Digital Inclusion Grant Program. Extends the time for the CBO to use an FY 20-21 appropriation of $35 million to implement the Broadband Stimulus Grant Program.
HB22-1249 Electric Grid Resilience and Reliability Roadmap	Requires the Colorado Energy Office, the Department of Local Affairs and Colorado Resiliency Office, to develop a grid resilience and reliability roadmap that includes guidance on how microgrids may be used to harden the grid and improve resilience and reliability. Includes broadband in the bill's definition of critical facilities and infrastructure.
HB22-1306 Broadband Deployment Board Grant Processes	Updates the requirements for awarding grant money pursuant to the federal act to require that applications comply with finalized federal regulations regarding use of money under the federal act.
HB22-1342 State Emergency Reserve Cash Fund	Transfers interest earned on ARPA Funds within the Broadband Administrative Fund, among other funds, to the State Emergency Reserve Cash Fund.
2023 Legislation	**Description**
SB23-183 Local Government Provision Of Communications Services	Eliminates the requirement that a local government obtain voter approval to provide certain communications services.
HB23-1051 Support for Rural Telecommunication Providers	Aligns the repeal date of high cost support mechanism funding with the sunset repeal date.
SB23-245 Transfer To Revenue Loss Restoration Cash Fund	Requires the state treasurer to transfer $8 million from the digital inclusion grant program fund to the revenue loss restoration cash fund on June 1, 2023.