



Initial Proposal **Volume 1**

Broadband, Equity, Access and
Deployment Grant Program



September 7, 2023



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Introduction

The Colorado Broadband Office (CBO) has drafted the following document to meet the requirements for Volume 1 of the Broadband Equity, Access and Deployment (BEAD) Initial Proposal. Requirements for the Initial Proposal are outlined in the BEAD Notice of Funding Opportunity (NOFO) in Appendix 1. Volume 1 of the Initial Proposal includes the following requirements:

- Identification of existing broadband efforts (Requirement 3).
- Identification of existing unserved and underserved locations (Requirement 5).
- Identification and application of community anchor institutions (CAI) (Requirement 6), wherein the CBO has added “Correctional facility” category to the definition of a CAI.
- Detailed challenge process plan that includes the following modifications and challenge modules: (Requirement 7)
 - Modification 1: Digital Subscriber Line (DSL) - The purpose of this modification is to facilitate the phase-out of legacy copper infrastructure that no longer meets today’s definition of a served location.
 - Modification 2: Speed Test Modifications - The purpose of this modification is to consider actual speed of locations using evidence to determine if a location is served and is eligible for funding.
 - Modification 3: Area Modification - The purpose of this modification is to use evidence based analysis to determine if reported data is representative of actual service provided in an area.
 - Modification 4: MDU Modification - The purpose of this modification is to ensure unserved units within MDUs are accounted for in the list of unserved locations.
 - Challenge Module 1: Area and MDU Challenge - The purpose of this module is to reverse the burden of proof in cases of multiple challenges to a specific area or MDU.
 - Challenge Module 2: Speed Test Requirements - The purpose of this module is to consider actual speed of locations using evidence to determine if a location is served and is eligible for funding.

The CBO commenced a 30-day period for public comments on Volume 1 of the Initial Proposal. Since the majority of the Initial Proposal is model language from the NTIA, incorporating feedback was limited. However, the CBO made the following changes:

- Included language about training webinar and technical assistance.
- Included a 6-month time limit for collecting speed test evidence data.
- Clarification on preponderance of the evidence.
- Clarification that the burden of proof is on challengers.
- Clarification on language in requirement 5 and challenge process timeline section.
- Changed to 1 unit or 10% in MDU section.
- Included E-ACAM language to the deduplication spreadsheet, with caveat that it will be effective upon establishing an enforceable commitment.



- Post application verification process is outlined in Volume Two of the Initial Proposal.

Following the assessment and deliberation of received comments, and under the advice of the National Telecommunications and Information Administration (NTIA), the CBO will fulfill the requirement of submitting Volume 1 to NTIA. Subsequently, a comparable procedure will be undertaken for Volume 2. Once Volume 1 secures approval from NTIA and Volume 2 is submitted, the CBO will proceed with the Challenge Process.

Pending NTIA Approval



1 Existing Broadband Funding (Requirement 3)

The purpose of this section is to recognize ongoing broadband initiatives supported by the federal government or a qualified organization within the eligible region, with the intent of reducing duplication in financial support. Documenting the present status of broadband initiatives is a significant step in understanding available resources and associations, potential shortcomings and obstacles, and informs forthcoming strategies and actions for broadband expansion, thus bridging the digital divide.

In the BEAD Five-Year Action Plan¹ submitted on August 14, 2023, the CBO pinpointed ongoing initiatives backed by the federal and state government in Colorado. This information can be found in Appendix 2. The findings include funding sources, a concise outline of broadband deployment along with other associated activities, the overall total funding commitments, the portion of funds already used and the remaining available funds.

2 Unserved and Underserved Locations (Requirement 5)

Colorado is required to identify each unserved and underserved location under its jurisdiction, including locations applicable to Tribal Lands. The CBO refers to the Federal Communication Commission (FCC) National Broadband Map to determine the list of unserved and underserved locations.

The attached CSV files contain the location IDs of all unserved and underserved Broadband Serviceable Locations (BSLs) in Colorado, including unserved and underserved BSLs in applicable Tribal Lands using data current as of Dec. 31, 2022 from the National Broadband Map, last updated on Aug. 9, 2023.

- [Colorado_unserved_20230809.csv](#)
- [Colorado_underserved_20230809.csv](#)

Since more than 60 calendar days will elapse between submission of the Initial Proposal Volume 1 and the beginning of the challenge process, the CBO will use the most recent version of the National Broadband Map available prior to the challenge process.

According to the BEAD NOFO, unserved locations are described as broadband serviceable locations that lack access to Reliable Broadband Service at speeds of at least 25 Mbps downstream and 3 Mbps upstream and latency levels low enough to support real-time, interactive applications. Underserved refers to locations that have similar broadband

¹ [Colorado Five-Year Action Plan](#)



limitations, but lacking access to Reliable Broadband Service at speeds of at least 100 Mbps downstream and 20 Mbps upstream.

3 Community Anchor Institutions (Requirement 6)

Colorado has been diligent in identifying Community Anchor Institutions (CAIs) since the CBO inception in 2014, and will continue to identify CAIs with broadband speeds less than 1 Gbps symmetrical. Identification of CAIs provides important information for the CBO and many other state agencies.

Colorado has an existing statutory definition of a “community anchor institution” as set forth in [C.R.S. 40-9.8-103](#) (Definitions). A “[community anchor institution](#)” is also defined in the Definitions section of the BEAD NOFO.

3.1 Definition of Community Anchor Institution

The CBO proposes to use the definition of a CAI as defined in the [BEAD NOFO Section I. C \(f\)](#), with a one additional CAI category for “Correctional facility” as noted below:

- (a) School
- (b) Library
- (c) Hospital, health clinic, health center or other health-care facility or medical provider
- (d) Law enforcement, emergency medical service provider or other public safety agency
- (e) *Correctional facility (added, see Note 1)*
- (f) Institution of higher education
- (h) Public housing organization (including any public housing agency, HUD-assisted housing organization or Tribal housing organization), or
- (g) Community support organization or community organization facility that facilitates greater use of broadband service by vulnerable populations, including, but not limited to, low-income individuals, unemployed individuals, children, the incarcerated, unhoused persons and aged individuals.

Note 1. “Correctional facility” is being added to the definition of a CAI because of a historical lack of broadband at these facilities. Correctional facilities house large numbers of incarcerated people that the BEAD NOFO define as part of the “vulnerable population” (see [BEAD NOFO Definition of CAI](#)). So, providing broadband to correctional facilities will facilitate greater use of broadband by a vulnerable population. The BEAD NOFO also references non-deployment activities including prisoner education to support job skills (see BEAD NOFO Section IV.B.7.a for additional details); however, a broadband connection to correctional facilities is needed for such online prisoner education.

A report by the Colorado Attorney General’s Office (see [Promoting Reentry](#))



[Employment to Reduce Recidivism and Strengthen Our Communities](#)) found that increasing access to pre-release technical training improved the prison-to-employment pathway and reduced recidivism. Colorado’s WORK AND GAIN EDUCATION & EMPLOYMENT SKILLS ([WAGEE](#)) program also promotes education for the incarcerated prior to reentry. The Colorado Department of Corrections has also noted that providing broadband in correctional facilities is essential for workforce training, telehealth, counseling, communication with family and many other uses. Broadband access in correctional facilities is essential to make these training opportunities and other services for the incarcerated a reality.

The Colorado Department of Corrections has made several attempts to obtain federal and state broadband deployment grants; but, to date, either did not qualify for such grants (e.g., under State and ARPA/Capital Projects Fund) or was otherwise not awarded. If funding is available, the CBO plans to prioritize correctional facilities to receive BEAD funding.

The CBO did not decline any proposed CAI categories to date, but will entertain suggestions for additional CAI categories during the Initial Proposal public comment period. The CBO added one category—Correctional facilities—as noted above. The CBO will use the Initial Proposal public comment process to add (or deny) additional categories of CAIs to ensure that all relevant institutions meeting the CAI criteria are included.

The CBO will use the following data sources to compile CAI data:

- **Schools:** K-12 schools include all K-12 schools participating in the FCC E-Rate program or that have an National Center for Education Statistics (NCES) identification (ID) in the categories “public schools” or “private schools,” as well as public schools identified by the Colorado Department of Education (CDE).²
- **Libraries:** Include all libraries participating in the FCC E-Rate program, member libraries (and their branches) of the American Library Association (ALA) and libraries identified in the IMLS Public Libraries Survey.³ Include all libraries identified by the Colorado Department of Education and Office of eHealth Innovation in the Colorado Library Connectivity Landscape Map.⁴
- **Health clinic, health center, hospital or other medical providers:** The list of health clinics, health centers, hospitals and other medical providers includes all institutions that have Centers for Medicare and Medicaid Services (CMS) identifiers, as well as hospitals and medical facilities listed in the Department of Homeland Security (DHS) Homeland Infrastructure Foundation-Level Data (HIFLD).⁵ During the Initial Proposal

² [Colorado Department of Education](#)

³ [IMLS Public Libraries Survey](#)

⁴ [Colorado Library Connectivity Landscape Map](#)

⁵ [Homeland Infrastructure Foundation-Level Data \(HIFLD\)](#)



comment period, the CBO will consider comments on the threshold for what constitutes a medical provider, e.g., individual physicians' offices, optometrists, etc.

- **Public safety entity:** The list includes entities such as fire houses, emergency medical service stations, police stations sourced from the DHS HIFLD ⁴ and public safety answering points (PSAP) sourced from the FCC 911 Master Public Safety Answering Points (PSAPs) Registry.⁶
- **Institutions of higher education:** Institutions of higher education include all organizations that have an NCES ID in the category “college,” including junior colleges, community colleges, minority serving institutions, historically black colleges and universities, other universities or other educational institutions sourced from the DHS HIFLD.⁵
- **Public housing organizations:** Public housing organizations are identified by contacting the Public Housing Agencies (PHAs) for the state or territory enumerated by the U.S. Department of Housing and Urban Development.⁷ The CBO will also contact the nonprofit organizations Public and Affordable Housing Research Corporation (PAHRC) and National Low-Income Housing Coalition, who maintain a database of nationwide public housing units at the National Housing Preservation Database⁸ (NHPD).
- **Community support organizations:** The CBO included any organizations that facilitate greater use of broadband service by vulnerable populations, including low-income individuals, unemployed individuals and aged individuals. This includes senior centers⁹, job training centers,¹⁰ workforce centers¹¹ and correctional facilities.¹²

The CBO also drew on state, community, county/municipal, ISPs and other stakeholders, and tribal resources to identify additional eligible community anchor institutions that were not contained in the data sources listed above. For example, the CBO conducted official Tribal consultations on August 10 with the Southern Ute Indian Tribe and August 11 with the Ute Mountain Ute Tribe to identify CAIs on tribal lands. A full list of the community outreach sessions is documented in the Colorado BEAD Five-Year Action Plan submitted on August 14, 2023.

3.2 Connectivity Needs of Defined Community Anchor Institutions

To assess the network connectivity needs of the types of eligible community anchor institutions listed above, the CBO engaged with local communities, state, municipal, and Tribal territories, as well as relevant umbrella organizations and nonprofits:

⁶ [FCC 911 Master Public Safety Answering Points \(PSAP\) Registry](#)

⁷ [PHA Contact Information - HUD | HUD.gov / U.S. Department of Housing and Urban Development \(HUD\)](#)

⁸ [National Housing Preservation Database](#)

⁹ CBO is working with [Area Agencies on Aging](#) to identify senior centers

¹⁰ [American Job Center Finder](#)

¹¹ [Colorado Workforce Centers](#)

¹² Colorado Department of Corrections



- The CBO has engaged with local communities, state, municipal, Tribal territories, and umbrella and nonprofit organizations that work with community anchor institutions, as noted above, to understand what records they have available regarding identification of community anchor institutions, and whether they have access to 1 Gbps broadband service.
- The CBO will coordinate with CDE and consult E-rate data to determine which schools and libraries do not currently have access to 1 Gbps symmetrical broadband service or the minimum recommended by the State Educational Technology Directors Association (SETDA) in their Broadband Imperative III document.¹³
- The CBO will use data from the Colorado Hospital Association and the Colorado Department of Public Health and Environment (CDPHE) to determine which health care facilities lack access to 1 Gbps symmetrical broadband service.
- The CBO will work with the Department of Regulatory Agencies (DORA) to determine PSAP locations that lack access to 1 Gbps broadband service.
- The CBO will reach out to the relevant state agencies and offices to obtain availability and network connectivity needs based on existing records of procured broadband service for Colorado community anchor institutions.
- The CBO will reach out to ISPs and other stakeholders operating in Colorado to identify and obtain availability and network connectivity needs of community anchor institutions.

3.3 CAI List

The attached CSV file shows CAIs identified by the CBO as of October 13, 2023:

- [Colorado_cai_20231013.csv](#)

The CBO notes that the current .csv list of CAIs is a draft, and may not include many CAIs that meet the criteria established above. The CBO will use the Initial Proposal public comment process, and challenge process below, to ensure that all relevant institutions that meet the criteria above are accounted for in the final CAI list.

4 Challenge Process (Requirement 7)

4.1 NTIA BEAD Model Challenge Process Adoption

Yes, Colorado plans to adopt the NTIA BEAD Model Challenge process for Requirement 7 (NTIA BEAD Model Challenge Process Adoption requirement 1.4.1); but plans to:

¹³ [Broadband Imperative III: Driving Connectivity, Access and Student Success](#) p. 12 “Small Districts – At least 2.8 Mbps per user with a minimum of 300 Mbps per district; Medium Districts – At least 2 Mbps per user; Large Districts – At least 1.4 Mbps per user



- Include the following modifications to reflect data not present in the National Broadband Map:
 - DSL Modification - The purpose of this modification is to facilitate the phase-out of legacy copper infrastructure that no longer meets today’s definition of a served location.
 - Speed Test Modifications - The purpose of this modification is to consider actual speed of locations using evidence to determine if a location is served and is eligible for funding.
 - Area Modification - The purpose of this modification is to use evidence based analysis to determine if reported data is representative of actual service provided in an area.
 - MDU Modification - The purpose of this modification is to ensure unserved units within MDUs are accounted for in the list of unserved locations.
- Include the following challenge modules:
 - Area and MDU Challenge.
 - Speed Test Requirements.

4.2 Modifications to Reflect Data Not Present in the National Broadband Map

DSL Modifications

The CBO will treat locations that the National Broadband Map shows to have available qualifying broadband service (i.e., a location that is “served”) delivered via DSL as “underserved.” This modification will better reflect the locations eligible for BEAD funding because it will facilitate the phase-out of legacy copper facilities and ensure the delivery of “future-proof” broadband service.

Speed Test Modifications

The CBO will treat as “underserved” locations that the National Broadband Map shows to be “served” if rigorous speed test methodologies (as outlined under “Speed Test Requirements” in Section 4.4 below) demonstrate that the “served” locations actually receive service that is materially below 100 Mbps downstream and 20 Mbps upstream. This modification will better reflect the locations eligible for BEAD funding because it will consider the actual speeds of locations.

Area Modifications

Inclusion of this modification is contingent on approval by NTIA. Details may be substantially revised prior to publication.

Prior to the start of the challenge process, CBO will conduct a speed-test and consumer feedback based analysis of service availability (“CBO Service Analysis”) across broadband serviceable locations in Colorado utilizing the methodology outlined below.



Areas will be analyzed by comparing an advertised service (a single technology by a single provider) with supporting data sources (listed below) for a location. All available evidence for the location will be examined to determine if sufficient evidence exists to prove that the advertised services are not able to be delivered to the location. Sufficient evidence may consist of details of a request for service or install (including provider's response), screenshots or documents showing no availability, speed tests accompanied by subscription information, or communication with the provider. Anonymized speed test data may be used to support the analysis of a location that has other supporting evidence. The CBO Service Analysis will also consider countervailing evidence showing the delivery of the advertised service in question. The following data sources will be used in the CBO Service Analysis:

- Statewide Ookla speed test dataset, using dates consistent with the age of the National Broadband Map data (i.e. if National Broadband Map data is current as of 12/31/2022, then Ookla data from 1/1/2023 through current date will be used for analysis).
- CBO Speed Test & Survey data.
- FCC availability challenge results.
- National Broadband Map data.
- Consumer complaints supported by evidence to the CBO regarding service availability, speed, latency or technology.
- Data from providers and provider websites.

The CBO will treat as “underserved” some or all locations that the National Broadband Map shows to be “served” within any census block group where at least six broadband serviceable locations using a particular technology and a single provider are demonstrated to receive service materially below 100 Mbps download and 20 Mbps upload according the CBO Service Analysis.

Area modifications made by the CBO will be indicated in the publication of eligible locations prior to the challenge process. The CBO will accept challenges to locations reclassified by the Area Modifications by eligible challengers during the Challenge window. The CBO will share Area modifications with the affected broadband service provider, and the provider may rebut the reclassification of some or all locations within the area by providing evidence specified in the permissible rebuttals.

MDU Bulk Modification

Inclusion of this modification is contingent on approval by NTIA. Details may be substantially revised prior to publication.



Based on the criteria outlined in the BEAD NOFO,¹⁴ the CBO has compiled a list of multi-dwelling units (MDUs) that are unserved and underserved and therefore eligible for BEAD funding. The CBO has elected to go beyond the National Broadband Map¹⁵ and publish a more comprehensive list of BEAD-eligible Broadband Serviceable Locations (BSLs), including MDUs that are eligible for the deployment of Wi-Fi infrastructure as an eligible use of funding in connection with last-mile broadband deployment projects as detailed in the BEAD NOFO, as well as running wireline to individual units as another potential option. To ensure that every resident in Colorado has access to a reliable, affordable, high-speed broadband connection, the state will only consider last-mile broadband deployment projects that will provide access to every unit within a BEAD-eligible MDU, and will not consider last-mile broadband deployment projects that only provide access to the BSL.

As shown in Table 1 below, the CBO has identified 10,520 MDUs in high poverty and highly-unconnected census tracts, representing an estimated 349,201 households (587,586 Colorado residents). The CBO will treat MDU locations that the National Broadband Map shows to have qualifying broadband service (i.e., a location that is “served”) as “underserved” if review of evidence (including speed tests, denials of service, inability to order service, or other evidence as outlined in Section 4.4) demonstrates that at least 1 unit or 10% of the unit count listed in the Fabric within the same broadband serviceable location, whichever is larger, are unserved or underserved. A summary of the MDU data is in Table 1 below, and a complete list of MDU locations and supporting evidence are attached to this submission as Appendix 3.

Table 1: Evidence for Bulk Modification of Specified MDUs to Unserved

	FCC National Broadband Map Fabric			Actual BEAD Criteria
	Unserved	Underserved	Served	Unserved
Buildings with 50+ units	67	61	1,201	1,329
Buildings with 10+ units	1,225	404	8,891	10,520

As the table suggests, the National Broadband Map provides only a starting point for our list of BEAD-eligible locations including MDUs. Since the National Broadband Map identifies multi-

¹⁴ [BEAD NOFO](#) p. 33, “4. Installing internet and Wi-Fi infrastructure or providing reduced-cost broadband within a multi-family residential building, with priority given to a residential building that has **substantial share of unserved households** or is in a location in which the percentage of individuals with a household income that is at or below 150 percent of the poverty line applicable to a family of the size involved is higher than the national percentage of such individuals.” (emphasis added)

¹⁵ National Broadband Map version November 2022.



family housing developments as one Broadband Serviceable Location (BSL), it does not represent broadband availability of the individual units or households. Without accurate unit-by-unit data, the National Broadband Map significantly undercounts the number of unserved and underserved MDUs and households living in multi-family housing (see Appendix 3 for list of locations). For example, if an apartment building contains 100 households (i.e. units), the National Broadband Map only identifies this building as a single BSL. There are several scenarios where availability of broadband service at an MDU BSL does not equate to the same availability of broadband to all units within that location. This results in an overstatement of the availability of broadband service at multi-family housing locations and thus undercounts the true total of Colorado residents who are unserved or underserved. Examples of these scenarios are summarized below:

- Internet Service Provider (ISP) offers a much more substantial service to the building manager's office or commercial space (e.g.: AT&T Fiber) than their inside wiring is capable of delivering to the residential units (e.g.: AT&T DSL).
- ISP has fiber-to-the-curb or building, but has no inside wiring infrastructure to the unit.
- ISP is able to deliver fiber to the building (FTTB) within 10 days, but only offers business-class internet services and does not actually provide residential service.
- Technology at the MDU is not capable of delivering 25/3 or 100/20 across all households simultaneously. Example: provider offers 100/20 DSL service, but needs to use pair-bonding to achieve that speed. In a 100 unit MDU, 100 DSL lines would be bonded into 50 connections, leaving 50 households served and 50 unserved.
- Inside wiring infrastructure is in a state of disrepair and cannot support speeds of 100/20 Mbps. Many public housing and affordable housing MDUs are 30-40+ years old and wiring has not been adequately maintained.
- ISP's equipment is located in a Main Distribution Frame (MDF), Intermediate Distribution Frame (IDF), cabinet, pedestal, node or potentially the central office, and is not capable of delivering 25/3 or 100/20 across all households simultaneously without overbuilding the entire MDU.¹⁶
- Non-cellular, licensed Fixed Wireless Access (FWA) providers without existing equipment/service in the MDU could not meet the 10 day installation window. The individual household of an MDU does not have the ability to authorize a Licensed FWA provider to access rooftops, telco rooms, and run new wiring all the way to their unit. This would require an agreement with the building owner and possibly a permit.

The additional MDUs on our list of unserved locations are based on the *property's location in census tracts with very high levels of poverty and very low levels of connectivity*, as called out in the BEAD NOFO. The source data used to identify the MDUs on the list come from the American Community Survey, coupled with data from the Department of Housing and Urban

¹⁶ MDF and IDF are industry standard designations for racks of networking equipment, or switches, that help distribute the network throughout the property. If outdated they will not handle a high enough capacity to distribute the required bandwidth to each unit regardless of how large the backhaul signal coming into the property.



Development (HUD) and commercially-available real estate databases. This data was analyzed and compiled by research and engineering teams at EducationSuperHighway (ESH) and provided to the state at no cost. ESH sourced third-party real estate data and combined them with HUD location datasets. The ESH used a “desktop assessment,” a physical assessment, and performed actual calls to determine if the MDU is unserved or underserved.

The “desktop assessment” included, for each property with 50+ units, using the ISP’s service address lookup tool to determine if fiber service is available (these are considered served) or only copper or coax is available (these are considered initially underserved, and potentially unserved). Next, the ISP was contacted to see if service could be ordered; if not the address is marked unserved. The results of the desktop assessment are included in Appendix 3.

These additional data sources give ample evidence that the universe of unserved locations as defined in the NOFO span far beyond simply those defined as unserved and underserved in the National Broadband Map. By expanding the universe of unserved locations to include all MDUs in census tracts with both high poverty rates and high numbers of unconnected households, Colorado can prioritize MDUs that have a high probability of meeting the BEAD prioritization requirement of having “a substantial share of unserved households¹⁷” judging by the sheer numbers of those that are estimated not to be served. To determine whether there is a “substantial share of unserved households” in an MDU, unit level availability data is needed. As the current National Broadband Map does not classify households at the unit level, their true classification is unknown.

4.3 Deduplication of Funding

Yes, Colorado plans to use the BEAD Eligible Entity Planning Toolkit to identify existing federal enforceable commitments.

Identifying and Removing Locations Subject to Enforceable Commitments

The CBO will enumerate locations subject to enforceable commitments by using the BEAD Eligible Entity Planning Toolkit, and consult at a minimum, the following data sets:

1. The Broadband Funding Map published by the FCC pursuant to IIJA § 60105.¹⁸
2. Data sets from state broadband deployment programs that rely on funds from the Capital Projects Fund (CPF) and the State and Local Fiscal Recovery Funds (grants issued from the Broadband Deployment Board, and Tribal Digital Equity grants) administered by the U.S. Treasury.
3. State of Colorado and local data collections of existing enforceable commitments, including the High Cost Support Mechanism (HCSM).

¹⁷ BEAD NOFO, p. 41.

¹⁸ The broadband funding map published by FCC pursuant to IIJA § 60105 is referred to as the “FCC Broadband Funding Map.”



The CBO will make a best effort to create a list of BSLs subject to enforceable commitments based on state/territory or local grants or loans. If necessary, the CBO will translate polygons or other geographic designations (e.g., a county or utility district) describing the area to a list of Fabric locations. The CBO will submit this list, in the format specified by the FCC Broadband Funding Map, to NTIA.¹⁹

The CBO will review its repository of existing state and local broadband grant programs to validate the upload and download speeds of existing binding agreements to deploy broadband infrastructure. In situations in which the State of Colorado or local program did not specify broadband speeds, or when there was reason to believe a provider deployed higher broadband speeds than required, the CBO will reach out to the provider to verify the deployment speeds of the binding commitment. The CBO will document this process by requiring providers to sign a binding agreement certifying the actual broadband deployment speeds deployed.

The CBO drew on these provider agreements, along with its existing database on state and local broadband funding programs' binding agreements, to determine the set of State of Colorado and local enforceable commitments.

Programs Analyzed to Remove Enforceable Commitments from Locations Eligible for BEAD

The list of federal, state, or territorial, and local programs that will be analyzed to remove enforceable commitments from the set of locations eligible for BEAD funding is provided in Appendix 4.

4.4 Challenge Process Design

Based on the NTIA BEAD Challenge Process Policy Notice, as well as the CBO's understanding of the goals of the BEAD program, the proposal represents a transparent, fair, expeditious and evidence-based challenge process.

Permissible Challenges

The CBO will only allow challenges on the following grounds:

- The identification of eligible community anchor institutions, as defined above.
- Community anchor institution BEAD eligibility determinations.
- BEAD eligibility determinations for existing broadband serviceable locations (BSLs).
- Enforceable commitments.
- Planned service.

Permissible Challengers

During the BEAD Challenge Process, the CBO will only allow challenges from:

- Nonprofit organizations.
- Units of local and tribal governments.

¹⁹ Guidance on the required format for the locations funded by state or territorial and local programs will be specified at a later date, in coordination with FCC guidance.



- Broadband service providers.

Challenge Process Overview

The challenge process conducted by the CBO will include four phases, spanning approximately 100 days:²⁰

1. **Publication of Eligible Locations:** Prior to beginning the Challenge Phase, the CBO will publish the set of locations eligible for BEAD funding, which consists of the locations resulting from the activities outlined in Sections 5 and 6 of the NTIA BEAD Challenge Process Policy Notice (e.g., administering the deduplication of funding process). The CBO will use the most recent version of the National Broadband Map available prior to processing the data. The CBO will also publish locations considered served, as they may be challenged. The CBO aims to publish this information on January 8, 2024. Prior to the challenge process, the CBO will hold educational webinars and training on how to file a challenge.
2. **Challenge Phase:** During the Challenge Phase, the challenger will submit the challenge through the CBO BEAD challenge portal. This challenge will be visible to the service provider whose service availability and performance is being contested. The portal will notify the provider of the challenge through an automated email, which will include related information about timing for the provider’s response. After this stage, the location will enter the “challenged” state.
 - a. **Minimum Level of Evidence Sufficient to Establish a Challenge:** The challenge portal will verify that the address provided can be found in the Fabric and is a BSL. The challenge portal will confirm that the challenged service is listed in the National Broadband Map and meets the definition of reliable broadband service. The challenge portal will confirm that the email address is reachable by sending a confirmation message to the listed contact email. For scanned images, the challenge portal will determine whether the quality is sufficient to enable optical character recognition (OCR). For availability challenges, the CBO will manually verify that the evidence submitted falls within the categories stated in the NTIA BEAD Challenge Process Policy Notice and the document is unredacted and dated.
 - b. **Timeline:** Challengers will have 30 calendar days to submit a challenge from the time the initial list of unserved and underserved locations, community anchor institutions, and existing enforceable commitments are posted. The CBO aims to run the Challenge Phase from January 10 to February 9, 2024.
3. **Rebuttal Phase:** Only the challenged service provider may rebut the reclassification of a location or area with evidence, causing the location or locations to enter the “disputed” state. If a challenge that meets the minimum level of evidence is not rebutted, the challenge is sustained. A provider may also agree with the challenge and thus transition the location to the “sustained” state. Providers must regularly check

²⁰ The NTIA BEAD Challenge Process Policy Notice allows *up to* 120 days. Broadband offices may modify the model challenge process to span up to 120 days, as long as the timeframes for each phase meet the requirements outlined in the NTIA BEAD Challenge Process Policy Notice.



the challenge portal notification method (e.g., email) for notifications of submitted challenges.

- a. **Timeline:** Providers will have 30 calendar days from notification of a challenge to provide rebuttal information to the CBO. The CBO aims to run the Rebuttal Phase from February 16 to March 17, 2024, but rebuttals can be made on a rolling basis as soon as the ISP is notified of the challenge.
4. **Final Determination Phase:** During the Final Determination phase, the CBO will make the final determination of the classification of the location, either declaring the challenge “sustained” or “rejected.”
 - a. **Timeline:** Following intake of challenge rebuttals, the CBO will make a final challenge determination within 30 calendar days of the challenge rebuttal. Reviews will occur on a rolling basis, as challenges and rebuttals are received. The CBO will make final determinations on a rolling basis and complete the Final Determination Phase by April 16, 2024.

Evidence & Review Approach

To ensure that each challenge is reviewed and adjudicated based on fairness for all participants and relevant stakeholders, the CBO will review all applicable challenge and rebuttal information in detail without bias, before deciding to sustain or reject a challenge. The challenger shall have the burden of proving, by a preponderance of evidence, that the challenge should be approved by the CBO. In general, evidence used in challenges and rebuttals should be no older than six (6) months. The CBO will document further standards of review to be applied in a Standard Operating Procedure and will require reviewers to document their justification for each determination. The CBO plans to ensure reviewers have sufficient training to apply the standards of review uniformly to all challenges submitted. The CBO will also require that all reviewers submit affidavits to ensure that there is no conflict of interest in making challenge determinations.

Code	Challenge Type	Description	Specific Examples	Permissible Rebuttals
A	Availability	The broadband service identified is not offered at the location, including a unit of a multiple dwelling unit (MDU).	<ul style="list-style-type: none"> • Screenshot of provider webpage. • A service request was refused within the last 180 days (e.g., an email or letter from provider). • Lack of suitable infrastructure (e.g., no fiber on pole). • A letter or email dated within the last 365 days that a provider failed to schedule a service installation or offer an installation date within 	<ul style="list-style-type: none"> • Provider shows that the location subscribes or has subscribed within the last 12 months, e.g., with a copy of a customer bill. • If the evidence was a screenshot and believed to be in error, a screenshot that shows service availability. • The provider submits evidence that service is now available as a standard installation,



			<p>10 business days of a request.²¹</p> <ul style="list-style-type: none"> • A letter or email dated within the last 365 days indicating that a provider requested more than the standard installation fee to connect this location or that a Provider quoted an amount in excess of the provider’s standard installation charge in order to connect service at the location. 	<p>e.g., via a copy of an offer sent to the location.</p>
S	Speed	The actual speed of the service tier falls below the unserved or underserved thresholds. ²²	<ul style="list-style-type: none"> • Speed test by subscriber, showing the insufficient speed and meeting the requirements for speed tests. 	<ul style="list-style-type: none"> • Provider has countervailing speed test evidence showing sufficient speed, e.g., from their own network management system.²³
L	Latency	The round-trip latency of the broadband service exceeds 100 ms. ²⁴	<ul style="list-style-type: none"> • Speed test by subscriber, showing the excessive latency. 	<ul style="list-style-type: none"> • Provider has countervailing speed test evidence showing latency at or below 100 ms, e.g., from their own network management system or the CAF performance measurements.²⁵
D	Data cap	The only service plans marketed to consumers impose an unreasonable capacity allowance	<ul style="list-style-type: none"> • Screenshot of provider webpage. • Service description provided to consumer. 	<ul style="list-style-type: none"> • Provider has terms of service showing that it does not impose an unreasonable data cap or offers another plan at

²¹ A standard broadband installation is defined in the Broadband DATA Act (47 U.S.C. § 641(14)) as “[t]he initiation by a provider of fixed broadband internet access service [within 10 business days of a request] in an area in which the provider has not previously offered that service, with no charges or delays attributable to the extension of the network of the provider.”

²² The challenge portal has to gather information on the subscription tier of the household submitting the challenge. Only locations with a subscribed-to service of 100/20 Mbps or above can challenge locations as underserved, while only locations with a service of 25/3 Mbps or above can challenge locations as unserved. Speed challenges that do not change the status of a location do not need to be considered. For example, a challenge that shows that a location only receives 250 Mbps download speed even though the household has subscribed to gigabit service can be disregarded since it will not change the status of the location to unserved or underserved.

²³ As described in the NOFO, a provider’s countervailing speed test should show that 80 percent of a provider’s download and upload measurements are at or above 80 percent of the required speed. See *Performance Measures Order*, 33 FCC Rcd at 6528, para. 51. See BEAD NOFO at 65, n. 80, Section IV.C.2.a.

²⁴ *Performance Measures Order*, including provisions for providers in non-contiguous areas (§21).

²⁵ *Ibid.*



		(“data cap”) on the consumer. ²⁶		the location without an unreasonable cap.
T	Technology	The technology indicated for this location is incorrect.	<ul style="list-style-type: none"> Manufacturer and model number of residential gateway (CPE) that demonstrates the service is delivered via a specific technology. 	<ul style="list-style-type: none"> Provider has countervailing evidence from their network management system showing an appropriate residential gateway that matches the provided service.
B	Business Service Only	The location is residential, but the service offered is marketed or available only to businesses.	<ul style="list-style-type: none"> Screenshot of provider webpage. 	<ul style="list-style-type: none"> Provider documentation that the service listed in the BDC is available at the location and is marketed to consumers.
E	Enforceable Commitment	The challenger has knowledge that broadband will be deployed at this location by the date established in the deployment obligation.	<ul style="list-style-type: none"> Enforceable commitment by service provider (e.g., authorization letter). In the case of Tribal Lands, the challenger must submit the requisite legally binding agreement between the relevant Tribal Government and the service provider for the location(s) at issue (BEAD Challenge Process Policy Notice, Section 6.2).²⁷ 	<ul style="list-style-type: none"> Documentation that the provider has defaulted on the commitment or is otherwise unable to meet the commitment (e.g., is no longer a going concern).
P	Planned Service	The challenger has knowledge that broadband will be deployed at this location by June 30, 2024, without an enforceable commitment or a provider is building out broadband	<ul style="list-style-type: none"> Construction contracts or similar evidence of on-going deployment, along with evidence that all necessary permits have been applied for or obtained. Contracts or a similar binding agreement between the Eligible 	<ul style="list-style-type: none"> Documentation showing that the provider is no longer able to meet the commitment (e.g., is no longer a going concern) or that the planned deployment does not meet the required technology or

²⁶ An unreasonable capacity allowance is defined as a data cap that falls below the monthly capacity allowance of 600 GB listed in the FCC 2023 Urban Rate Survey (FCC Public Notice DA 22-1338, December 16, 2022). Alternative plans without unreasonable data caps cannot be business-oriented plans not commonly sold to residential locations. A successful challenge may not change the status of the location to unserved or underserved if the same provider offers a service plan without an unreasonable capacity allowance or if another provider offers reliable broadband service at that location.

²⁷ [BEAD Challenge Process Policy Notice](#).



		offering performance beyond the requirements of an enforceable commitment.	Entity and the provider committing that planned service will meet the BEAD definition and requirements of reliable and qualifying broadband even if not required by its funding source (i.e., a separate federal grant program), including the expected date deployment will be completed, which must be on or before June 30, 2024.	performance requirements.
N	Not Part of Enforceable Commitment	This location is in an area that is subject to an enforceable commitment to less than 100% of locations and the location is not covered by that commitment. (See BEAD NOFO at 36, n. 52.)	Declaration by service provider subject to the enforceable commitment.	
C	Location is a CAI	The location should be classified as a CAI.	Evidence that the location falls within the definitions of CAIs set by the Eligible Entity. ²⁸	Evidence that the location does not fall within the definitions of CAIs set by the Eligible Entity or is no longer in operation.
R	Location is not a CAI	The location is currently labeled as a CAI but is a residence, a non-CAI business or is no longer in operation.	Evidence that the location does not fall within the definitions of CAIs set by the Eligible Entity or is no longer in operation.	Evidence that the location falls within the definitions of CAIs set by the Eligible Entity or is still operational.

Area and MDU Challenge

The CBO will administer area and MDU challenges for challenge types A, S, L, D and T. An area challenge reverses the burden of proof for availability, speed, latency, data caps and technology if a defined number of challenges for a particular category, across all challengers, have been submitted for a provider. Thus, the provider receiving an area challenge or MDU

²⁸ For example, eligibility for FCC e-Rate or Rural Health Care program funding or registration with an appropriate regulatory agency may constitute such evidence, but the Eligible Entity may rely on other reliable evidence that is verifiable by a third party.



challenge must demonstrate that they are indeed meeting the availability, speed, latency, data cap and technology requirement, respectively, for all (served) locations within the area or all units within an MDU. The provider can use any of the permissible rebuttals listed above.

An area challenge is triggered if 6 or more broadband serviceable locations using a particular technology and a single provider within a census block group are challenged.

An MDU challenge requires challenges by at least 1 unit or 10% of the unit count listed in the Fabric within the same broadband serviceable location, whichever is larger.

Each type of challenge and each technology and provider is considered separately, i.e., an availability challenge (A) does not count towards reaching the area threshold for a speed (S) challenge. If a provider offers multiple technologies, such as DSL and fiber, each is treated separately since they are likely to have different availability and performance.

Area challenges for availability need to be rebutted with evidence that service is available for all BSLs within the census block group, e.g., by network diagrams that show fiber or HFC infrastructure or customer subscribers. For fixed wireless service, the challenge system will offer a representative random sample of the area in contention, but no fewer than 10, where the provider has to demonstrate service availability, subscription level and speed (e.g., with a mobile test unit, and excluding “slow-by-purchase” locations).²⁹

Speed Test Requirements

The CBO will accept speed tests as evidence for substantiating challenges and rebuttals. Each speed test consists of three measurements, taken on different days. Speed tests cannot predate the beginning of the challenge period by more than 60 days.

Speed tests can take four forms:

1. A reading of the physical line speed provided by the residential gateway, (i.e., DSL modem, cable modem (for HFC), ONT (for FTTH), or fixed wireless subscriber module.
2. A reading of the speed test available from within the residential gateway web interface.
3. A reading of the speed test found on the service provider’s web page.
4. A speed test performed on a laptop or desktop computer within immediate proximity of the residential gateway, using a commonly used speed test application, the CBO Speed Test application or a peer-reviewed speed test developed by a research group.

Each speed test measurement must include:

- The time and date the speed test was conducted.

²⁹ A mobile test unit is a testing apparatus that can be easily moved, which simulates the equipment and installation (antenna, antenna mast, subscriber equipment, etc.) that would be used in a typical deployment of fixed wireless access service by the provider.



- The provider-assigned internet protocol (IP) address, either version 4 or version 6, identifying the residential gateway conducting the test.

Each group of three speed tests must include:

- The name and street address of the customer conducting the speed test.
- A certification of the speed tier the customer subscribes to (e.g., a copy of the customer's last invoice).
- An agreement, using an online form provided by the Eligible Entity, that grants access to these information elements to the Eligible Entity, any contractors supporting the challenge process, and the service provider.

The IP address and the subscriber's name and street address are considered personally identifiable information (PII) and thus are not disclosed to the public (e.g., as part of a challenge dashboard or open data portal).

Each location must conduct three speed tests on three different days; the days do not have to be consecutive. The median of the three tests (i.e., the second highest (or lowest) speed) is used to trigger a speed-based (S) challenge, for either upload or download. For example, if a location claims a broadband speed of 100 Mbps/25 Mbps and the three speed tests result in download speed measurements of 105, 102 and 98 Mbps, and three upload speed measurements of 18, 26 and 17 Mbps, the speed tests qualify the location for a challenge, since the measured upload speed marks the location as underserved.

Speed tests may be conducted by subscribers, but speed test challenges must be gathered and submitted by units of local government, nonprofit organizations or a broadband service provider.

Subscribers submitting a speed test must indicate the speed tier they are subscribing to. If the household subscribes to a speed tier of between 25/3 Mbps and 100/20 Mbps and the speed test results in a speed below 25/3 Mbps, this broadband service will not be considered to determine the status of the location. If the household subscribes to a speed tier of 100/20 Mbps or higher and the speed test yields a speed below 100/20 Mbps, this service offering will not count towards the location being considered served. However, even if a particular service offering is not meeting the speed threshold, the eligibility status of the location may not change. For example, if a location is served by 100 Mbps licensed fixed wireless and 500 Mbps fiber, conducting a speed test on the fixed wireless network that shows an effective speed of 70 Mbps does not change the status of the location from served to underserved.

A service provider may rebut an area speed test challenge by providing speed tests, in the manner described above, for at least 10% of the customers in the challenged area. The



customers must be randomly selected. Providers must apply the 80/80 rule,³⁰ i.e., 80% of these locations must experience a speed that equals or exceeds 80% of the speed threshold. For example, 80% of these locations must have a download speed of at least 20 Mbps (that is, 80% of 25 Mbps) and an upload speed of at least 2.4 Mbps to meet the 25/3 Mbps threshold and must have a download speed of at least 80 Mbps and an upload speed of 16 Mbps to meet the 100/20 Mbps speed tier. Only speed tests conducted by the provider between the hours of 7 p.m. and 11 p.m. local time will be considered as evidence for a challenge rebuttal.

Transparency Plan

To ensure that the challenge process is transparent and open to public and stakeholder scrutiny, the CBO will, upon approval from NTIA, publicly post an overview of the challenge process phases, challenge timelines and instructions on how to submit and rebut a challenge. This documentation will be posted publicly for at least a week prior to opening the challenge submission window. The CBO also plans to actively inform all units of local government of its challenge process through existing communication channels and regular meetings, and set up regular touchpoints to address any comments, questions, or concerns from local governments, nonprofit organizations, and internet service providers. Relevant stakeholders can sign up on the CBO website (<https://broadband.colorado.gov/advance-colorado-broadband>) for challenge process updates and newsletters. They can engage with the CBO by a designated email address (Advance_CBO@state.co.us). Providers will be notified of challenges by email.

Beyond actively engaging relevant stakeholders, the CBO will also post all submitted challenges and rebuttals before final challenge determinations are made, including:

- The provider, nonprofit or unit of local government that submitted the challenge.
- The census block group containing the challenged broadband serviceable location.
- The provider being challenged.
- The type of challenge (e.g., availability or speed).
- A summary of the challenge, including whether a provider submitted a rebuttal.

The CBO will not publicly post any personally identifiable information (PII) or proprietary information, including subscriber names, street addresses and customer IP addresses. To ensure all PII is protected, the CBO will review the basis and summary of all challenges and rebuttals to ensure PII is removed prior to posting them on the website. Additionally, guidance will be provided to all challengers as to which information they submit may be posted publicly.

The CBO will treat information submitted by an existing broadband service provider designated as proprietary and confidential consistent with applicable federal law. If any of these responses do contain information or data that the submitter deems to be confidential commercial information that should be exempt from disclosure under state open records laws

³⁰ The 80/80 threshold is drawn from the requirements in the CAF-II and RDOF measurements. See BEAD NOFO at 65, n. 80, Section IV.C.2.a.



or is protected under applicable state privacy laws, that information should be identified as privileged or confidential. Otherwise, the responses will be made publicly available.

The CBO will adhere to the Colorado Privacy Act and related [Rules](#), and the Colorado Open Records Act ([CORA](#)), in the collection, storage or dissemination of information related to the challenge process.

Pending NTIA Approval



Appendices

Appendix 1: [BEAD Notice of Funding Opportunity](#)

Appendix 2: [Colorado BEAD Initial Proposal Volume I Existing Broadband Funding Sources.xlsx](#)

Appendix 3: [MDU Locations for CBO Bulk Modification.xlsx](#)

Appendix 4: [Colorado BEAD Initial Proposal Volume I Deduplication of Funding Programs.xlsx](#)

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