

California's BEAD Technical Requirements

January 14, 2025



California Public
Utilities Commission

Welcome

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BEAD Program

Agenda

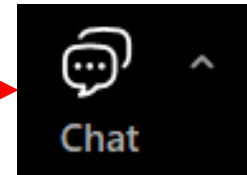
1. Background
2. Project-specific certifications
3. Project plan
4. Certification from a Professional Engineer
5. Next steps



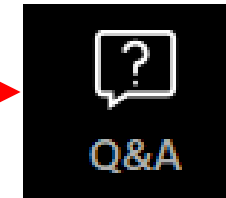
Housekeeping

Tips for getting the most out of this webinar

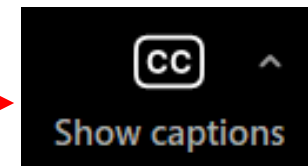
Chat: Keep an eye on the chat because we will use it to share useful links



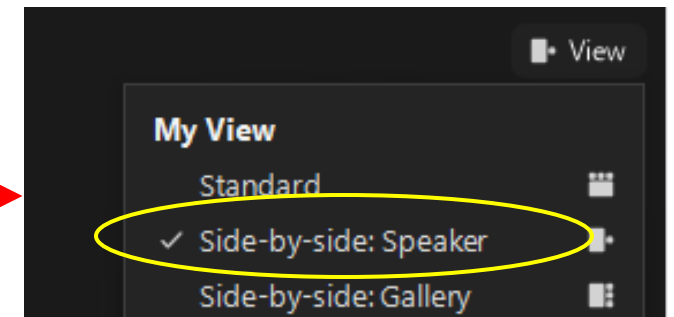
Q&A: Type your questions in the Q&A



Closed Captions: English closed captions are available. Select "Show captions" on your toolbar. (Click the small arrow on the 'Show captions' button for more settings or to see a full transcript)



Select Side-by-Side: Speaker Mode for the best viewing experience when slides are shared.



Background

BEAD program background

The Notice of Funding Opportunity (NOFO) issued by the National Telecommunications and Information Administration (NTIA) outlines the **requirements for the CPUC's implementation** of the BEAD program.

The NOFO contains **specific technical requirements** with respect to applicants' qualifications, applications, and proposed project designs.

The CPUC has incorporated those requirements into the Commission's Decision, the **BEAD Initial Proposal Volume II (IPv2)**, and the BEAD grant application.

BEAD application requirements

1

Applicants must **submit a network design, diagram, project costs, build-out timeline, and milestones for project implementation, as well as a capital investment schedule.**

2

These items must be **certified by a Professional Engineer**, stating that the proposed network can deliver broadband service that meets the requisite performance requirements to all locations served by the project.

3

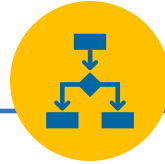
The CPUC will not approve a grant unless it determines that the materials submitted **demonstrate the applicant's technical capability** with respect to the proposed project.

Project-specific certifications

Project-specific certifications



Applicants will be asked to **upload certifications, licenses, or other qualifications** unique and specific to the proposed project. They can also update materials and certifications submitted in prequalification regarding technical qualifications.



Applicants will be asked to describe their **processes to track and maintain certifications, training programs, and licenses** throughout the construction and post-construction process.



Applicants must list **employment categories, job titles, and job descriptions** necessary to complete the proposed project.¹

¹ The list of job categories and titles should be based on the North American Industry Classification Systems (NAICS).

Additional technical certifications

The applicant must also certify that the organization will **comply with the following program requirements:**

- At time of project closeout, all proposed broadband serviceable locations (BSL) shall be capable of receiving **Reliable Broadband Service with speeds of not less than 100 Mbps for downloads and 20 Mbps for uploads** with 95 percent of latency measurements during testing windows falling **at or below 100 milliseconds** round-trip time.
- At time of project closeout, grant-funded connections to proposed eligible **Community Anchor Institutions (CAI) shall be capable of delivering service at speeds not less than 1 gigabit symmetrical**. Additionally, the applicant must certify that these grant-funded connections can be used to provide business data services, which refers to the dedicated point-to-point transmission of data at certain guaranteed speeds and service levels using high-capacity connections.
- The applicant will obtain all necessary **federal, state, and local governmental permits and required approvals** necessary for the proposed work to be completed.
- The applicant must certify that any deployment project that involves laying fiber-optic cables or conduit underground or along a roadway will include **interspersed conduit access points at regular and short intervals for interconnection** by unaffiliated entities.

Project plan

Project plan and technical requirements

Applicants must submit a **project plan** to demonstrate their technical capability including:

- Technical narrative
- Network design
- Logical network design drawing
- Project costs
- Project timeline with milestones
- Capital investment schedule (pro forma business case analysis)
- Fixed wireless or satellite design parameters (*if applicable*)
- Descriptions of geographic location of project
- Professional Engineer certification

Regarding the required **capital investment schedule** and **Professional Engineer certification**:

- NTIA has issued a Conditional Limited Programmatic Waiver and Clarification of Professional Engineer Certification.
- California's IPv2 states: "Applicants will also submit templates to present a pro forma business case analysis to present their financial projections to demonstrate sustainability."

Technical narrative

The technical narrative must provide a description of the proposed project and detail how the proposed infrastructure will deliver service that reliably **meets or exceeds the required speeds and latency for all BSLs and proposed CAIs** included in the project area. The narrative (submitted as a PDF) must include:

- A detailed description of **how the network will be connected to sufficient backhaul** infrastructure to support the program performance requirements;
- An explanation of the **projected subscriber take-rate** and the anticipated level of oversubscription based on the proposed network capacity;
- A discussion of **network scalability**; and
- A detailed description of how the proposed network will be deployed using **industry best practices**.

Network design



The network design must include **all proposed BSLs and CAIs served by the project, all proposed broadband infrastructure routes to be constructed via the project, and project area boundary polygons** encompassing all infrastructure routes, BSLs, and CAIs.

- The official BSL and CAI data will be made available by the CPUC.
- The proposed routes (submitted as shapefiles) shall be provided as a singular line feature representative of all broadband infrastructure (conduit, fiber, etc.) and shall be attributed to convey associated details.
- The project area boundary polygons shall be drawn so that all proposed BSLs, CAIs, and proposed infrastructure routes are encompassed within the boundaries.

Logical network design



The applicant's logical network design drawing should illustrate the **logical connectivity for the proposed network; depict the desired architecture of the network in terms of hardware placement and hardware redundancy; and indicate the types of network platforms/technologies to be utilized** in each layer of the network.

Existing infrastructure present on the diagram should be identified as existing to clearly delineate **new infrastructure proposed** as part of the project.

A sample drawing will be provided as part of the application guide materials.

The design will be submitted as a PDF.

Project costs



The applicant's project costs estimate (or project budget) should offer **sufficient granularity to demonstrate an understanding of the proposed project** and its associated estimated costs.

The cost estimate must include a **detailed itemization of each cost and sufficient description** to verify the eligibility of each proposed cost item.

The project costs must be submitted in spreadsheet format using the template provided by the CPUC with the application materials.

An example Excel spreadsheet with sample costs and supporting details will also be provided by the CPUC.

Project costs template

The project costs template will include instructions on how to fill out the spreadsheet. Applicants shall enter **individual cost items** into the spreadsheet. For each proposed cost item, the applicant must complete the following information fields:

- **Cost description** – A simple description of the cost item
- **Cost category** – A selectable field that assigns the cost to a specific program reporting category
- **Unit type** – The unit of measurement for each cost item quantity (*feet, each, hours, etc.*)
- **Unit quantity** – The quantity of each cost item that the applicant estimates will be required to complete the project
- **Unit cost** – The applicant’s estimated cost per unit for each cost item
- **Cost details and justification** – The applicant’s narrative supporting the estimated unit quantity and cost for each cost item

The spreadsheet will **automatically generate a project cost summary** based on the detailed cost information entered by the applicant.

The template will be published by the CPUC with the application materials. The “Financial requirements” webinar (January 9th) also presented details on the project costs and proposed project budget template.

Project timeline



The applicant's project timeline should articulate the **applicant's ability to complete the project within the program timeline**. The project timeline should include the key milestones for project implementation, including:

- Planning/engineering
- Permitting/make-ready
- Material and equipment procurement
- Network construction
- Subscriber activations
- Project closeout submission

The project timeline must be submitted in Excel format using the template published by the CPUC with the application materials.

Fixed wireless design

For project plans that include a fixed wireless deployment component, applicants must **provide additional design details relating to the fixed wireless portion** of the design. This additional information (submitted as a spreadsheet) will allow the CPUC to properly evaluate the applicant's design.

Applicants must include detailed information for the following design components:

- Site radio frequency (RF) parameters
 - Site location information
 - Sector information
- BSL location information and signal data
- Network radio frequency (RF) parameters
 - Physical equipment information
 - Base station
- Customer premises equipment (CPE) information

The CPUC will publish a fixed wireless design template with the application materials.

Satellite design

For project plans that include a satellite component, applicants must provide additional design details (submitted as a Word or PDF file) relating to the satellite portion of the design. This additional information will allow the CPUC to properly evaluate the applicant's design. The template will be published by the CPUC with the application materials.

Applications must include detailed information for the following components:



Certification from a Professional Engineer

Professional Engineer certification

The Professional Engineer certification (submitted as a PDF) must state that the engineer has **reviewed all necessary elements of the proposed project**, including descriptions and documentation of the network design, build-out timelines, and budgets. The engineer must **certify that the proposed project meets all applicable program requirements** and is designed to be successfully completed and **capable of meeting all performance commitments** and requirements to all locations served by the project within the proposed timeline.

The CPUC will provide a template for this certification that includes fields for the following information:

- Name of the licensed Professional Engineer
- License number
- Licensed state (the certifying engineer must hold a professional license with a “clear” status from any state or other eligible entity)
- License expiration data (*must be a currently licensed PE*)
- Professional Engineer signature

The applicant must upload documentation of the Professional Engineer’s licenses as well as any written reports, letters, or analysis provided by the engineer regarding the proposed project.

Next steps

Upcoming webinars

Webinars are open to all who wish to attend.

Registration links will be posted on the [BEAD events page](#).

Date/Time	Topic
Tuesday, January 21 1:00-2:00 pm PST	BEAD Matching Funds
Thursdays, January 16 to February 27 1:00-2:00 pm PST	Office Hours

Questions?

Please contact us at:

BEADgrant@cpuc.ca.gov



For more information visit:

[California Broadband Equity, Access, and Deployment \(BEAD\) Program](#)





California Public Utilities Commission