Broadband Infrastructure PLAYBOOK

Implementing BEAD and other
Broadband Deployment Programs

FOREWORD

America's future depends on universal connectivity to essential, reliable, robust infrastructure – whether it is electric, water, or broadband. And, with enactment of the $1.2 trillion Infrastructure Investment and Jobs Act (IIJA), we finally have the resources and direction to enable us to achieve this goal. Yet, success is not assured. We now need to turn our attention to execution, making sure we invest these enormous resources in infrastructure that will connect communities for decades to come.

The IIJA makes the largest one-time federal broadband investment in history with $65B in funding, covering 4 key areas: (1) deployment of *future-proof* connectivity to all Americans; (2) broadband subsidies for low-income users; (3) funding to accelerate the country's progress toward addressing both broadband access and adoption challenges; and (4) funding to address digital training and literacy. All these initiatives are highly dependent on decisions that each state will make when funding its critical infrastructure – the existence of a network that communities and individual users can rely upon for decades to come is foundational to promoting greater adoption and more effective use of broadband services. As a result, this Playbook is largely focused on the $42.45B Broadband Equity, Access, and Deployment program as it funds the foundation upon which everything is built for the future.

With this opportunity comes a tremendous responsibility for each state and territory broadband office to make sure this infrastructure investment yields its maximum benefit, now and into the future, so that no person or community is again left behind. As a result, the Fiber Broadband Association and NTCA–The Rural Broadband Association commissioned industry-leading consulting firm Cartesian to develop this Broadband Infrastructure Playbook.

Our goal with this Playbook is to provide a valuable resource to the states and territories to help them accelerate the availability of funding, provide best practices from state broadband programs that work well, and help provide some consistency in the process nationwide. This once-in-a-generation funding opportunity warrants an effective and efficient approach that will deliver networks and services providing value for generations to come. We hope you find the information in this Playbook useful and that you reach out to our Associations for our expertise in fiber broadband, the rural broadband market and what it takes to serve consumers – today and into the future.

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A $65 billion opportunity to close the digital divide

In the 2021 Infrastructure Investment and Jobs Act (IIJA), President Biden signed bipartisan legislation providing a groundbreaking $65 billion federal investment in broadband equity and access. The scale of funding presents a once-in-a-generation opportunity to invest in broadband infrastructure that will connect millions of unserved and z Americans and overcome barriers that have kept millions more from adopting broadband even where available.

The IIJA makes clear – and the pandemic has confirmed – that access to affordable, reliable, high-speed broadband is critically important for individuals, families, and communities to be able to work, learn, and access vital services.

Those on the wrong side of the digital divide include communities of color, lower-income areas, and areas where broadband is more expensive to deploy. Rural communities are often affected, due to their relative remoteness and low population density.

The IIJA further considers digital equity as a matter of social and economic justice. It recognizes that digital exclusion materially harms the opportunities of individuals with respect to health, wealth, education, and inclusion.

Ultimately, the IIJA makes it a national priority to ensure that every American will have access to robust and affordable high-speed internet.

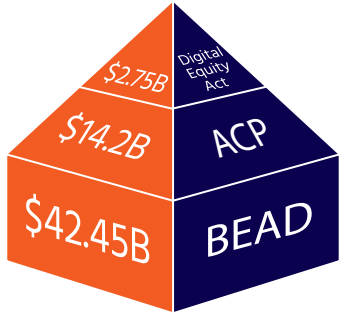
The Broadband Equity, Access, and Deployment Program

The cornerstone of the IIJA's vision for broadband equity is the $42.45 billion Broadband Equity, Access, and Deployment (BEAD) program.

"The persistent 'digital divide' in the United States is a barrier to the economic competitiveness of the United States and equitable distribution of essential public services, including health care and education." – IIJA

The BEAD program will primarily fund broadband infrastructure projects that increase access and improve affordability.

Physical infrastructure of the type that will be funded by the BEAD program is the *foundation* on which other broadband provisions of the IIJA will sit, including the Affordable Connectivity Program and Digital Equity Act – together comprising a further $16.95 billion investment.



Responsibility for awarding BEAD funding to new infrastructure projects is entrusted to the state governments and relevant entities representing US territories and the District of Columbia. (For readability, States, US Territories, and the District of Columbia will hereafter be referred to as "states.")

The National Telecommunications and Information Administration (NTIA) will provide guidance and requirements on program implementation, and state governments will decide where and how the money is spent.

State officials have the advantage of being close to the communities in need of critical broadband infrastructure, providing a unique understanding of both what is needed and the importance of making effective choices in awards. But the size, scale, and statutory requirements of the BEAD program brings new challenges, expectations, and demands even for those states that have administered broadband grant programs of their own in the past.

The need for reliable, high-speed broadband

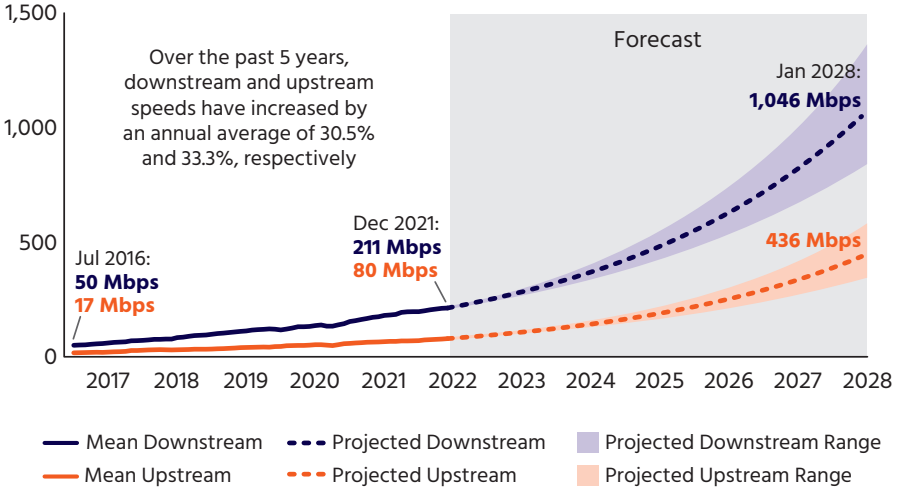
Few now doubt that access to reliable and affordable high-speed broadband is a requirement for full participation in society. The COVID-19 pandemic made this clearer than ever. During the last two years, hundreds of millions of Americans have depended upon high-speed connections for their work, education, and access to vital services.

Over the next 10 years, our reliance on broadband will become even greater. Emerging applications use progressively larger amounts of data. More and more services will be delivered online.

This is not a new trend as the following chart shows. Consumer demands for higher internet speeds have been increasing steadily for years and are projected to do so into the future. The average US download speed in December 2021 was 3.7 times higher than in December 2016, an annualized growth rate of 30.5%. Over the same period, upload speeds increased even faster, growing by a factor of 4.2, or an annualized growth rate of 33.3%.

Higher upload speeds will improve remote work, distance learning, telehealth, real-time interactive applications such as videoconferencing, and next generation technologies like precision agriculture, in which uploading and viewing data sets from automated vehicles or drones will be highly data intense.[1]

Historical and Projected Average US Internet Speeds (Mbps)



Note: forecast is based on full period CAGR with a 15% margin of error. Source: Ookla (2016-2021)

From the same chart, one can see that the average US broadband connection already delivers 211/80 Mbps as of December 2021. Five years from now, given evolving applications and the kinds of network investments being seen in urban and suburban areas today, this undoubtedly will be even greater. Indeed, many providers offer symmetric gigabit speeds today and already have the capability to extend this to 10 Gbps symmetric and beyond. Consumers are also increasingly adopting these higher speeds as they seek to make use of new applications as more daily commerce, education, and entertainment move online.

In parallel with faster speeds, low latency is becoming increasingly important to support a new generation of interactive applications and industry use cases. Emerging technologies such as self-driving vehicles, precision agriculture, and virtual reality will all demand predictable low latency connections.

Data from today's networks reveals average latency on US broadband networks to be around 25 ms.[2] Virtual reality (VR) applications will require less than 20 ms and augmented reality (AR) as low as 5 ms.[3]

Finding a lasting solution to the digital divide

The BEAD program is a once-in-a-generation opportunity to help close the digital divide. If executed effectively, it promises to transform the lives of unserved and underserved households and businesses by investing in broadband infrastructure that will have a lasting effect.

The need for action is clear. In 2021, the Federal Communications Commission (FCC) found that 17.3% of rural Americans lacked fixed terrestrial access to speeds of 25/3 Mbps, compared to 1.2% of urban Americans.[4]

With BEAD program funding, states can fund networks that close these performance gaps. But execution is key – it is critical that states plan not just for today's needs by patching gaps but rather build networks that will meet anticipated demands for generations.

The pandemic taught people that simply having broadband was not enough; it was the type of broadband that mattered.

This foresight is key to achieving the IIJA's promise of decades of progress in broadband infrastructure. No one expects that the federal government will invest further billions for a network refresh in 5- or 10-years' time. It would be a tremendous loss of opportunity for any given state – and put that state at a competitive disadvantage in a national and global marketplace – if the networks funded today fail to keep pace with the demands of their citizens and community needs.

Preparing for the BEAD Program

The BEAD program is by far the largest single federal investment in broadband infrastructure. It places states at the heart of the program, presenting them with both a golden opportunity and a significant responsibility. Fortunately, many states have already administered their own broadband deployment programs and have experience that will be invaluable in the delivery of BEAD program funding. However, even these states will need to consider how new BEAD requirements and guidance forthcoming from NTIA translate and necessitate changes to existing state efforts.

State officials will soon be applying for funding through the NTIA and then preparing to award subgrants for various projects. Yet many details are unknown. The NTIA is scheduled to release key guidance in May 2022 on implementing BEAD, and the FCC broadband availability maps (which must be used for final awards of subgrants) should be released afterward. But states must start preparing now – in advance of full details being available – to ensure that they are ready to act when the time comes.

Within this context, the Fiber Broadband Association and NTCA commissioned industry-leading research firm Cartesian to develop the Broadband Infrastructure Playbook. This Playbook will assist state governments in ensuring that this historic investment in broadband infrastructure delivers immediate local impact and benefits generations to come. The Playbook outlines the statutory requirements states need to fulfill to receive federal funds, provides recommendations on successful broadband grant program elements, and illustrates best practices from prior programs as examples. The Playbook is intended to serve as both a resource and a reference for state governments to assist through all stages of implementing the BEAD program.

Using the Playbook

The Playbook is organized into 4 sections that cover key topics state broadband offices will need to address.

1 The State Broadband Office	2 The BEAD Application	3 Grant Program Design	4 Grant Program Administration
Best practices for organizing and running a state broadband office well prepared for administering BEAD	Stages of the BEAD application to the NTIA including statutory requirements and pointers in preparing to unlock funding	Key steps in designing the state broadband grant program to achieve state and federal goals	Process steps involved in running a successful state grant program
For states that have yet to establish their Broadband Office, or that are seeking to augment their existing office to meet the scale of BEAD	***Start here to unlock your $5 million in planning funds***	*How to ensure BEAD delivers the strongest foundation for digital access & equity in your state*	*Recommendations and case studies from best practice state programs*

At a high-level, the Playbook is organized chronologically. The state broadband office must be established and organized, then funding must be secured from the NTIA, after which states will offer grants and monitor subgrantee projects. However, every state will need to pick and choose its own priorities from this general structure. Each state must consider the current capacity of its state broadband office, the level of preparedness of its state grant program, and its experience administering and overseeing subgrantees.

More granularly, states will want to pay close attention to the BEAD program timeline. This edition of the Playbook was published before the NTIA released the Notice of Funding Opportunity (NOFO) for the BEAD program, scheduled for May 15, 2022.

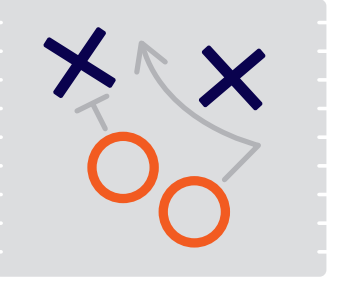
The NOFO will provide further detail on the BEAD program requirements and will invite states to apply for their allocated funds. The first opportunity for states to secure federal funds is the $5 million in Planning Funds.

Recognizing that states will want to start preparing their Planning Fund application ahead of the NOFO publication, the Playbook provides guidance and recommendations for applicants. To aid with this stage of preparation specifically, interested states should review:

- **Section 2.2:** Drafting contents for the Letter of Intent, including details of past state broadband initiatives, general details about the state broadband office, and requested use for Planning Funds.
- **Section 2.3:** Planning for the state 5-Year Action plan, including outlining key state objectives, beginning communication with local governments and Internet Service Providers (ISPs), and assessing data/mapping needs.

Once the NTIA releases the NOFO and outlines the exact contents of the Letter of Intent, well-prepared states will be on a fast track to receiving their Planning Fund allocations.

The Playbook will be revised once the NTIA releases its guidance for the BEAD program and establishes specific application processes and subgrant criteria, which will inform future state priorities.



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THE STATE BROADBAND OFFICE

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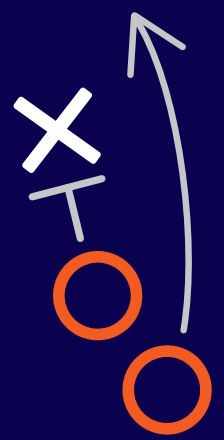


The IIJA places state broadband offices at the tip of the spear for the BEAD program ("state broadband office" will hereby refer to the state or territory entity that is securing and distributing BEAD program funding from the NTIA). Broadband offices will set state broadband goals, apply for BEAD program funding, and administer the state broadband grant program. States, regardless of whether they already have well-established broadband offices or whether they are developing one, will need to understand and then implement the entirely new BEAD program regime.

To date, each state has taken its own approach in establishing a broadband administrative function. Some broadband offices are housed in the governor's office, while others reside in state departments, agencies, or commissions. Given these differences, the following section is not one-size fits all, but instead covers best practices relevant to any state broadband office. It can be treated as a checklist of priorities, which state broadband offices can use to ensure that they are fully prepared to implement the BEAD program.

1.1 Objectives & Mission

State broadband programs require clear objectives to establish accountability, support effective governance, and build stakeholder trust.

The state broadband office is responsible for setting broadband objectives and defining the state's mission to close the digital divide. In addition to coverage goals, state objectives should consider affordability, adoption, and inclusion.

The foundation of digital access and equity is the physical infrastructure that underpins these policy goals. To secure lasting change, states must invest in infrastructure that will scale to meet future demand and keep pace with ever evolving needs. Future-proof fiber optic technology provides such a solution, and clearly meets the IIJA's expressed preference for scalability in network design.

EXAMPLE STATE BROADBAND OBJECTIVES

Performance & Scalability	"Make high performance broadband more accessible, resilient, competitive, and affordable" – *Wisconsin* "No later than 2026, all businesses and homes have access to at least one provider of broadband with download speeds of at least 100 megabits per second and upload speeds of at least 20 megabits per second" – *Minnesota*
Digital Equity & Economic Development	"Promote digital literacy, adoption, and inclusion while leveraging investment in new broadband infrastructure to spur advances in such areas as economic development, education, precision agriculture, and telehealth" – *Illinois*
Stakeholder Buy-In	"Convene state and federal agencies and advise the Governor, state agencies and the Congressional Delegation on broadband" – *Oregon*

Recommendations:

1. Define specific state broadband objectives that are:
   a. measurable
   b. realistically achievable
   c. capture the unique broadband challenges facing the state
   d. and propose enduring solutions to solve long-term connectivity issues
2. When setting goals, focus on solving connectivity issues now and for future decades by prioritizing high-speed, low-latency future proof networks where possible.
3. Leverage stakeholder input to develop the state's broadband vision and recognize the importance of both public and private resources to BEAD's success.

1.2 Resourcing & Funding

States must rapidly identify and resolve internal capacity gaps in preparation for administering BEAD.

To deliver BEAD, the state broadband office must act as a grant administrator, regulatory expert, and an informed leader on broadband gaps, technology options, and required investment. The office should also be a cheerleader by engaging in a robust outreach campaign to drive applicant participation. With grants in the hundreds of millions of dollars, states will require significantly more headcount than previous broadband programs. Understanding resource needs for these roles – and how they need to scale for BEAD – is essential to determine the full resourcing and funding needs of the office.

States should consider leveraging part of their $5 million in Planning Funds to augment staff capacities. In addition, Congress allows states to spend up to 2% of their allocated BEAD funding, a sum of at least $2 million per state, on "expenses relating … to administration of the grant." Access to this funding will follow the FCC publication of the updated Broadband DATA Maps, while the Planning Funds will be available after the state's Letter of Intent is accepted.

Recommendations:

1. Map out all the activities required to deliver BEAD program funding, from pre-award engagement through to post-award monitoring and reporting. For each activity, detail the skills/capabilities required.
2. Estimate the expected volume of work by activity, e.g., the scale of outreach, the quantity of applications, the number of successful projects to report upon. Consider the phasing of activities and how the volume will ramp over time.
3. Combining the above, build a profile of the expected resource needs over time. Identify activities in different phases that require similar skills.
4. Explore potential resourcing options for each activity, either building capacity in the broadband office, upscaling other state agencies, or outsourcing to external parties – but ensure critical decision-making roles related specifically to broadband grant administration are retained in the broadband office.
5. For states that have run previous funding rounds, consider whether existing interfaces and resourcing assumptions are still valid given the scale and requirements of the BEAD program. Investigate alternative options where these make sense.

Rationale: Broadband offices have typically operated with fewer than 10 full-time staff in previous state funding rounds (with some existing offices having as few as 2 staff). The scale of the BEAD program will require a full re-think of staffing levels. States can expect to receive far more grant applications, see greater demand for stakeholder engagement, and experience significant federal reporting requirements.

With grant administration requiring financial, legal, policy, technical, and general administrative capacities, maintaining an open mind is key when it comes to resourcing options. Adding incremental capacity to existing functions within other state agencies may be more efficient

than hiring into the broadband office. Contracted support can provide scarce technical expertise and help deal with short-term peaks in demand, such as assessment of applications and periodic post-grant compliance reviews.

1.3 Department & Agency Interfaces

The scale of the BEAD program requires broadband offices to establish strong interdepartmental and interagency connections for joined-up planning and support during deployment.

State Broadband Offices reside in a variety of government departments and commissions. The location is often a product of local circumstance which in turn determines the primary resources available to the office: an office housed in the department of economic development will have a focus on promoting commerce and business activity; in a public service commission, there is greater need for public comment and policy analysis; collocation within a governor's office provides direct access to key state decisionmakers but may hinder access to the resources in other arms of state government.

Wherever the office is placed, effective communications with other state functions will be essential to successfully deliver a program with the scale of the BEAD program. Relevant state agencies and departments will include state finance, administration, labor, transportation, education, rail, workforce development, and economic development organizations, among others. The following table highlights typical interactions.

AGENCY	PLANNING SUPPORT	DEPLOYMENT SUPPORT
Finance & Administration	• Securing BEAD program funds • Establishing reporting requirements	• Subgrantee contracting • Subgrant payments • Federal reporting
Labor & Human Services	• Contract compliance with state and local labor laws	• Subgrantee compliance with state and local labor laws
Transportation & Rail	• Permitting requirements • Prime agencies for incoming requests	• Construction permitting and highway and railroad crossing requests
Education & Health	• Assess telehealth and remote learning needs	• Address educational barriers to adoption
Workforce & Economic Development	• Develop broadband technician training incentives	• Quantify subgrantee impact on economic development
Agriculture & Natural Resource	• Permitting requirements • Understand farming demands including precision agriculture	• Permitting for projects to pass through protected areas

Recommendations:

1. If not already in place, create a matrix to identify the roles of state and federal agencies in each phase of the BEAD program.

2. Pay particular attention to potential communication blind spots resulting from the state broadband office's location within government.
3. Engage with relevant state departments and agencies to understand needs relating to the BEAD program and how the broadband office can support them to ensure smooth delivery of the program.
4. Explore whether other departments and agencies hold data or other resources that could be useful in BEAD program planning or deployment.
5. Establish a regular forum to communicate with key state departments or agencies, where issues with BEAD program administration can be raised.
6. Proactively notify state departments and agencies of the location and timing of upcoming broadband projects to allow adequate preparation and minimize delays.

Rationale: Straightforward communication can resolve inter-government communication issues. Personal relationships and trust count for a lot, as does having a regular forum to raise issues as they arise. Each state will face its own unique challenges in administering the BEAD program, and open communication is one of the best ways to overcome them.

Giving state departments and agencies plenty of advance warning of broadband construction activity is also important, especially at key steps in the grant process. For example, advising the department in charge of state railroads about eligible grant areas that intersect with rail lines. This heads-up will give the department time to prepare for issuing permits for crossing tracks, a notoriously time-consuming process.

1.4 Interfaces with Other Stakeholders

Engage closely with local governments, community stakeholders, and experienced service providers. Collaboration between these groups will be critical to the success of the BEAD program.

The BEAD program application process requires each state to coordinate with local political subdivisions when preparing its Initial and Final Proposals for use of the funds. At a minimum, states are expected to consider plans from subdivisions – such as local government – and provide an opportunity for these bodies to comment on the state proposal prior to submission.

Beyond these statutory requirements, state broadband offices will want close engagement with local governments, communities, and providers. Collaboration between these groups is critical for the success of the BEAD program. Effective communication is therefore essential.

Recommendations:

1. Locate and educate broadband champions: local governments or communities that act as strong advocates for broadband infrastructure projects in their territories. Broadband champions leverage community resources to assist projects in permitting, support incumbent service providers, and accelerate service adoption.
2. Engage all experienced service providers, including large and small companies, rural ILECs, rural electric cooperatives, municipal network providers, etc. Small providers often operate in the hardest-to-reach areas across the nation and are well positioned to serve unserved rural households. Proven track records in construction and ongoing service delivery can help ensure near-term deployment goals and long-term project success.
3. Leverage local expertise from providers and state provider associations to inform grant program design and decision making.

4. Establish regular communications with stakeholders. This includes recurring meetings, periodic communications such as newsletters, and having a standard process to notify all stakeholders of critical information.

BEST-PRACTICES IN STAKEHOLDER COMMUNICATION	STATE EXAMPLE
Establish regular communication channels with core stakeholder groups within both local governments and industry, such as providers, cooperatives, municipals, and local governments.	*Tennessee*
Create state broadband champions through planning and deployment initiatives. Issue community Broadband Ready Certifications to signal interest in infrastructure deployment.	*Tennessee*
Leverage existing organizations to communicate with local communities and providers in the state. Third party stakeholders with extensive knowledge in areas such as rural engagement and access and equity solutions can help communities develop broadband initiatives.	*Minnesota*
Develop communications channels such as a blog, newsletter, or social media presence to connect with existing providers, governments, and community stakeholders.	*Louisiana*

1.5 Information Needs & Mapping Program

Reliable information sources are essential to design and manage state broadband programs and inform the BEAD program grant application.

The FCC Broadband DATA Map will determine both the BEAD program's allocation of funding to states and state distribution of funding on deployment projects. The Broadband DATA Map will provide location-level serviceability data across the country for the first time, replacing the current FCC maps which are based on census block level data. States may wish to supplement the FCC maps to aid in project prioritization (although the IIJA is clear that ultimately decisions must be made by reference to the FCC maps). The states can use a share of their allocated $5 million in Planning Funds to fund data collection initiatives, based on guidance to be provided by NTIA regarding how such funds may be used.

Although the FCC maps will be the final word in the BEAD program allocation and administration, alternative mapping sources can prepare the state to develop the 5-Year Action Plan and aid the state in challenging FCC map service claims.

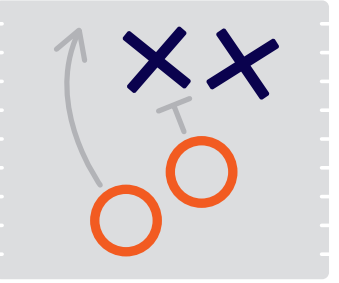
Recommendations:

1. Determine information needs for the entire program and identify potential sources. Explore existing data sets held by the state that could be used to support the BEAD program. Identify options to address any gaps.
2. Leverage relationships with state departments, agencies, and universities to source market and economic research data specific to the state. Consider obtaining additional data from third party stakeholders, such as policy research groups.
3. Determine whether state investment in mapping data is worthwhile for state planning or FCC map challenges. Mapping data can be obtained directly from state ISPs, by contracting with a mapping expert, and/or from commercial third-party services.

4. Seek to create broadband models informed by state data that quantify the impact of localized broadband deployment and develop a timeline for reaching universal broadband access within the state.

POTENTIAL INFORMATION AND DATA NEEDS	
Data	Purpose
Broadband Availability & Mapping	☐ Identify possible unserved and underserved locations, and community anchors lacking 1 Gbps symmetrical ☐ Understand the footprints of existing providers ☐ Identify railroads and protected territories that require specific permits ☐ Determine other topographical factors that will affect deployment
Market & Economic Research	☐ Quantify existing and future demand ☐ Understand barriers to broadband adoption ☐ Model the impact of the low-cost option ☐ Ensure the BEAD program's digital equity goals are met ☐ Quantify time to universal broadband service given state specific deployment and adoption research ☐ Clarify forward-thinking broadband goals by assessing consumer demand trends and forecasts
Network Costs	☐ Understand provider lifetime cost-to-deploy to inform realistic objectives for subgrant funding ☐ Sense-check budgets in subgrantee applications to assure they are financially sustainable

BEST-PRACTICES IN INFORMATION AND DATA COLLECTION	STATE EXAMPLE
Partner with a local university to source state economic and statistical studies.	*Louisiana*
Identify relevant data collected by other state agencies and departments, such as K-12 home internet availability data from the department of education.	*Wisconsin*
Create a state broadband availability mesh based on collected state provider footprints to aid in state planning initiatives and grant program development. Mapping can be done in-house, using an outside partner, or through purchase on the private market.	*Minnesota*



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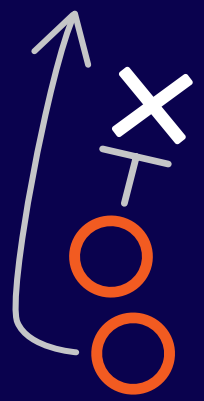
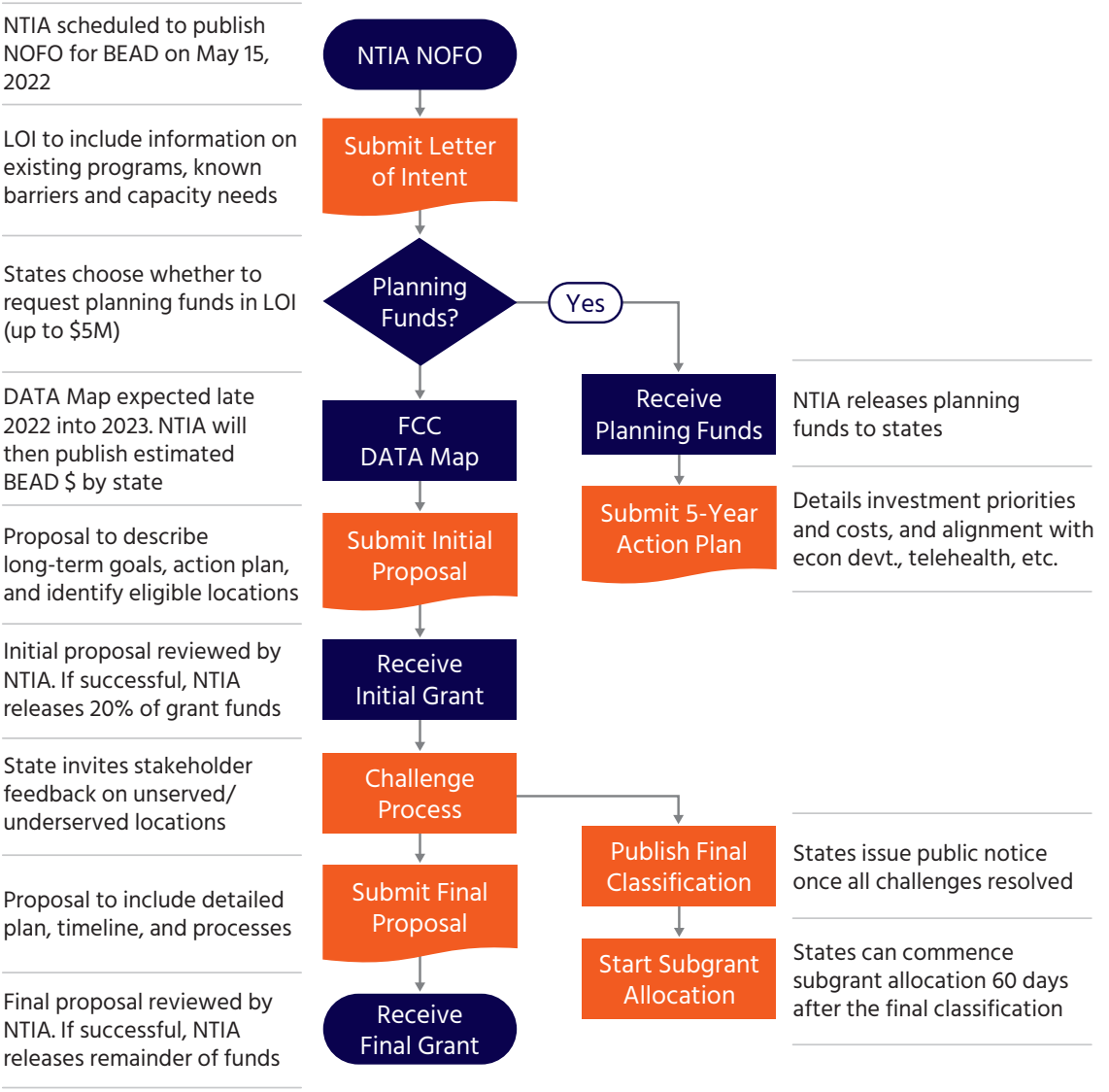


This section describes how states will apply for BEAD program funding from the NTIA to unlock their allocated funding. The application process presents an opportunity for states to assess their programs and resources, guiding the planning, decision making, and implementation of the BEAD program.

BEAD allocates a minimum allowance of $100 million to each state. The remainder of the $42.45 billion will be distributed between states based on each state's share of unserved locations in high-cost areas (out of $4.25 billion), and any unserved locations in the state (out of the remaining funding). The inputs to the high-cost and unserved calculations will be sourced from the FCC Broadband DATA maps.

2.1 Application Timeline

The application timeline is shown in the following figure. The process commences when the NTIA releases the Notice of Funding Opportunity (NOFO) for the BEAD program which is scheduled for May 15, 2022.



2.2 Letter of Intent

The Letter of Intent is the first step in the BEAD program application and requires states to describe their current status and how they plan to use the BEAD program funds.

The NTIA will invite states to submit a Letter of Intent after the NOFO is released. The Letter of Intent is a level-set of the state broadband program's status and the expected challenges it will face in implementing BEAD. The exact requirements for the Letter of Intent will be defined by the NTIA in the NOFO, but advance planning to the extent possible is important.

Letter of Intent – Template

1. Introduction

- ☐ Intent to participate in BEAD
- ☐ Request for planning funds (if applicable)

2. State Broadband Office

- ☐ Details of the existing broadband office and program
- ☐ Number and duties of full and part time employees in the state broadband office
- ☐ Activities that the office or program currently conducts
- ☐ Available broadband funding and sources
- ☐ History, leadership, organization structure, primary activities (optional)

3. State Broadband Plan

- ☐ State plan and goal for availability of broadband (if applicable)
- ☐ Progress on current plan, how plan meets future-looking state objectives (optional)
- ☐ Any relevant state plan deadlines

4. State Broadband Grant History

- ☐ The number of historical rounds of broadband deployment grants awarded by the state
- ☐ Grant outcomes, impact statements (optional)
- ☐ Available funding for broadband deployment or other broadband-related activities
- ☐ Funding sources, identify state funds and those from the CARES or ARPA

5. BEAD Implementation Program

- ☐ State goals for the use of BEAD funds
- ☐ Number of full- and part-time state employees who will administer BEAD funds
  - ☐ Duties assigned to those employees
  - ☐ Relevant contracted support
- ☐ Details of the subgrantee award process
- ☐ Subgrant award timeline
- ☐ Subgrantee oversight and reporting requirements
- ☐ Known barriers or challenges to developing and administering the BEAD program
- ☐ Additional capacity needed to implement BEAD
  - ☐ Technical assistance from Federal entities or other partners
  - ☐ Hiring additional employees
  - ☐ Support from contracted entities
  - ☐ Additional programmatic information or data
- ☐ Explain how these needs were identified
- ☐ Explain how BEAD funds may be used to address those needs
- ☐ Details of any relevant partners
- ☐ Any other information specified by NTIA

Recommendations:

1. Leverage the state's existing grant processes where possible; adapt and scale to the BEAD program as necessary. States without existing processes can refer to Section 3, drawing on experience from established programs.
2. Consider barriers and challenges at each stage of the grant process: pre-application, application, assessment, award and contracting, reporting (deployment), and payment. Refer to Section 4 for potential issues.
3. Include challenges that other state agencies will face because of the BEAD program. For example, there may a high demand for environmental permits or railroad crossings.
4. Also consider the role of the state in workforce development, to ensure there is sufficient skilled labor for network deployment.

2.3 Planning Funds & the 5-Year Action Plan

States may request up to $5 million in planning funds to develop a 5-Year Action Plan.

The BEAD program allows states to request up to $5 million in planning funds in their Letter of Intent. These funds are provided to aid the state broadband office in developing a 5-Year Action Plan. The 5-Year Plan is an opportunity for the state to step back and assess the future of broadband for its citizens, communities, and local businesses.

Planning Funds may be spent on:

- ☐ Research and data collection
- ☐ Developing a preliminary budget for pre-planning activities
- ☐ Publications, outreach, and communications support
- ☐ Technical assistance, through workshops or events
- ☐ Broadband office employee training, related staffing capacity, consulting, or contracted support

5-YEAR ACTION PLAN GUIDELINES & CHECKLIST

Guidelines:

1. Collaborate with local governments, community stakeholders, and existing service providers
2. Detail investment priorities and associated costs
3. Explain how planned spending aligns with economic development, telehealth, and related connectivity efforts
4. Assess the amount of time it would take to build out universal broadband service in the eligible entity

Checklist:

- ☐ Address local broadband service needs
- ☐ Address regional broadband service needs
- ☐ Propose solutions for the deployment of affordable broadband
- ☐ Identify locations that should be prioritized for Federal support
- ☐ Include localized broadband deployment data
- ☐ Ascertain how to best serve unserved locations
- ☐ Identify technical assistance necessary to carry out plan

Recommendations:

1. Gather support from state leadership, including the governor, state senators, and state agencies. Explicit support for the 5-Year Action Plan provides credibility and emphasizes the wider, long-term benefits of the program.
2. Engage broadly with internal and external stakeholders. Solicit input on the needs of residents and businesses, investment priorities, perceived challenges, and potential solutions.
3. Leverage local knowledge of territories such as quantification of

the unserved and underserved population, deployment challenges, and permitting disputes.

4. Consider how needs will evolve beyond the 5-year horizon of the plan. What physical infrastructure will be required to meet longer-term demand? How can the state ensure networks easily scale for speed and capacity?
5. Look ahead to the needs of the Initial Proposal. Ideally, the 5-Year Action Plan will provide much of the required detail.

2.4 Initial Proposal

The Initial Proposal covers the steps to achieve BEAD program deployment goals in greater detail and unlocks the first tranche of federal funds.

Once NTIA announces the estimated BEAD program funding allocation, states will be invited to submit their Initial Proposal using an online application form developed by NTIA. Upon NTIA approval of the state's Initial Proposal, the state will receive at least 20% of its estimated funding allocation.

Recommendations:

1. Use the state's Letter of Intent and 5-Year Action Plan as the foundation for the Initial Proposal, building on expected challenges and forward-thinking deployment planning.
2. Include not only the grant program processes but design decisions. Explain how the processes satisfy BEAD program requirements and achieve state goals.

Initial Proposal – Template

1. Introduction

- ☐ State progress since Letter of Intent, including on 5-Year Action Plan and Grant Program Design (optional)
- ☐ Any updates in historical state initiatives or funding sources (optional)

2. State Broadband Objectives

- ☐ Goals for deploying broadband
- ☐ Goals for closing the digital divide
- ☐ Goals for enhancing economic growth and creating jobs
- ☐ Any applicable information developed by the state as part of their 5-Year Action plan, or from any comparable strategic plan developed by the state
- ☐ How infrastructure deployed will ensure digital equity is met through service quality and scalability (optional)

3. Supporting Activity

- ☐ Identify and outline steps to support local and regional broadband planning processes or ongoing broadband deployment and digital divide efforts
- ☐ Describe coordination with local governments
- ☐ Coordination with state agencies and departments (optional)
- ☐ Identify existing efforts funded by the Federal Government or state to deploy broadband and close the digital divide

4. Grant Program Plan

- ☐ Design decisions, plan for grant administration
- ☐ Certify that the state intends to comply with all application and reporting requirements of the bill

5. Eligible Grant Areas

- ☐ Identify each unserved or underserved location, along with each community anchor institution in the state using the updated FCC Broadband DATA Maps

2.5 Challenge Process

Before the state can award any of the allocated funding received from the Initial Proposal, it is required to complete a challenge process on the locations it has identified as unserved or underserved.

The BEAD program mandates that states complete a challenge process to accurately identify unserved and underserved locations at least 60 days before awarding grants. Congress is specific that the state's challenge process must be "transparent, evidence based, and expeditious" allowing any "unit of local government, nonprofit organization, or other broadband service provider" to submit a challenge. A challenge may dispute any eligibility determination by the state in the Initial Proposal, including whether an area is considered served, unserved, or underserved.

Challenge Process Case Study

Illinois

Many states with mapping initiatives have already conducted similar challenge processes to the one outlined in BEAD. Illinois provides an opportunity to challenge the accuracy of the grant eligibility map before the state makes awards. A challenger must provide the office with shapefiles or specific location addresses where it can demonstrate service at or above the program speed thresholds defined by the state.

This challenge begins a dialogue between the stakeholder and the Office of Broadband, where no award is given until stakeholders are offered an opportunity to comment on the mapping and service level. The office has welcomed a variety of evidence, ensuring the result will be fair and not a result of a technicality.

Illinois's challenge process is transparent with few restrictions. It satisfies applicants while being a fair process that ensures the grant eligibility map will help select the best broadband projects.

Recommendations:

1. Conduct the challenge process immediately upon submission of the Initial Proposal to move seamlessly into grant administration and award.
2. Advertise the challenge process to all BEAD program stakeholders – including providers and local communities – to promote engagement.
3. Set clear benchmarks for proof of service. Collect all provider, locality, and resident information as record. A technical evaluation can be a helpful addition to information that is submitted and provide objective reason for disputed territories.
4. Publish challenges lodged in the process on the state website to ensure transparency. Include challenger information, details of the disputed area, and evidence used in the final decision.

2.6 Final Proposal

A state's final proposal contains the most up-to-date information on state broadband initiatives and unlocks the state's remaining BEAD program allocation.

After NTIA approves a state's Initial Proposal, the state is invited to submit a Final Proposal to unlock the remaining allocation of BEAD program funds. The Final Proposal will be submitted using the online application form developed by NTIA.

Recommendations:

1. Build on the foundation set by the Initial Proposal, including updates to design considerations, progress towards grant award, and examples of enacting processes to comply with BEAD requirements.
2. Work on the Final Proposal concurrently with the Challenge Process to limit delays in receiving and allocating funding.

Final Proposal – Template

1. Introduction (optional)

- ☐ Update on progress since Initial Proposal, how 20% funding has been spent, progress on 5-Year Action Plan
- ☐ Outcome of the Challenge Process
- ☐ Recap state broadband objectives and update as necessary

2. Broadband Deployment Plan

- ☐ Allocation of grant funds for both unserved and underserved project deployment
- ☐ Alignment of grant fund allocation with the use of other funds the state receives from either the Federal government, the state, or a private entity
- ☐ Implementation timeline
- ☐ Describe coordination with local governments
- ☐ Oversight and accountability processes

3. Known Barriers & Challenges

- ☐ Identification of all known barriers & challenges
- ☐ Additional capacity needed to implement the NTIA's requirements including additional hiring or support, and acquiring additional data
- ☐ How the needs above were identified
- ☐ How the funds will be used to address them

4. Relevant Partners

- ☐ State agencies, organizations, communities, universities, providers (optional)

3
DESIGNING A BROADBAND GRANT PROGRAM

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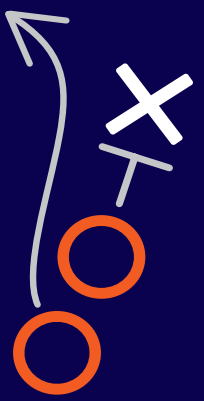


A well-designed broadband grant program will not only comply with BEAD requirements but will efficiently deliver impactful broadband projects to communities throughout the state.

Failure to design an effective grant program risks leaving unserved communities stranded for years to come.

In this section we focus on design decisions that will need to be made prior to launching a grant program. However, many state officials also expressed the importance of continuous improvement: the ongoing planning and design of the programs as they run them. These officials were always looking for ways to improve their programs, and they began planning their next grant round even before funds were available.

The NTIA will issue additional rules *on implementing BEAD in the Notice of Funding Opportunity, scheduled to be released May 15, 2022, which will include standards for how states assess capabilities and capacities of prospective subgrantees.*

In the following sections, we set out recommendations that align with the requirements of the BEAD program statute. Additional guidance from the NTIA will establish the guardrails within which each state will implement the BEAD program. We will revise our content accordingly once NTIA releases the NOFO.

3.1 Scope, Eligibility & Standards

The BEAD program statute sets out qualifying criteria for BEAD program infrastructure projects, including minimum service requirements.

The BEAD program provides for last-mile broadband infrastructure deployment as well as general planning and data collection projects. In building to locations, BEAD also allows infrastructure projects to include necessary transport infrastructure for those last-mile connections.

Qualifying broadband infrastructure projects may, in order of priority: cover areas with 80% unserved households; cover areas with 80% unserved or underserved households; or connect anchor institutions lacking 1 Gbps symmetrical.

Broadband infrastructure projects must meet the BEAD program deployment and service requirements, which NTIA is expected to elaborate upon in the NOFO.

DEPLOYMENT AND SERVICE REQUIREMENT CHECKLIST

- ☐ Broadband speeds of at least 100/20 Mbps
- ☐ Latency low enough for "reasonably foreseeable, real-time, interactive applications"
- ☐ No more than 48 hours of outage a year
- ☐ Regular conduit access points for fiber projects
- ☐ Begin providing service within 4 years of grant date, unless extended by the state
- ☐ Offer at least one low-cost broadband option
- ☐ Provide broadband service to each customer served by the project that desires it
- ☐ Provide public notice of service and carry out a public awareness campaign
- ☐ Provide wholesale access if provider is no longer able to provide broadband service

The BEAD program requires states to run grant award programs that are open and provider neutral. Pursuant to the statute, states may not exclude private companies, public-private partnerships, public or private utilities, cooperatives, public utility districts, local governments, and non-profit organizations from being eligible for subgrants. In placing all providers on equal footing in terms of eligibility, the statute does not express a congressional preference or priority for any given kind of provider.

Beyond our guidance, it will be important for states to consult the text of the statute and the NOFO itself to ensure that they capture all relevant requirements related to awards of funding, including any applicable "Buy America" obligations and restrictions on the use of supplies manufactured in certain countries.

Recommendations:

1. Assess how the minimum requirements defined by Congress and elaborated upon by NTIA can enable your state broadband policy goals.
2. Specifically, meld minimum performance criteria with longer-term requirements of local communities and businesses; for example:
   a. What upload speed will be sufficient for future residential and business applications?
   b. What is a reasonably foreseeable standard for network latency? What will be the experience for users on slower networks?
   c. What is acceptable downtime for anticipated health, education, and work use cases?
3. Consistent with NTIA guidance in the NOFO, consider whether raising the bar on other requirements may lead to better outcomes.
4. Understand how BEAD program requirements will potentially conflict with and override current state law.

Rationale: As discussed further below, the BEAD program provides a floor for broadband infrastructure performance and gives states the ability to prioritize and grant preferences to deployment projects based upon considerations such as scalability. The NOFO will give further guidance on the ability of states to implement these priorities and preferences, and we will update this section accordingly.

Each state will want to consider whether 100/20 Mbps broadband is going to be sufficient for the needs of its residents and local businesses over the course of the next 10 years and beyond. As discussed in the introduction, providers already offer symmetrical gigabit services in many urban and suburban areas. In effect, this level of performance is set to become the industry standard, setting a baseline for consumer expectations and market demand. Moreover, these robust networks will give rise to more high-bandwidth applications. The latency demands of emerging applications in the same timeframe must also be understood.

States can look to broadband funding rounds that predate the BEAD program for guidance. Maine's recent grant program required speeds of 100/100 Mbps, building on earlier, slower specifications.

Case Study

Maine

Maine has a long history of state grant awards for broadband. Over time the state broadband office has increased the service requirements in funding rounds to ensure residents and businesses receive high-quality broadband.

In 2020, projects were only required to provide a service of 10/10 Mbps. The highest tier projects were those which offered service at 100/10 Mbps or above. In the most recent round of funding, Maine requires providers to deploy broadband infrastructure that delivers service of at least 100/100 Mbps. This reflects the rapidly increasing demand for faster and symmetrical speeds.

By increasing the service requirement above the minimum, Maine is ensuring that the infrastructure can meet a broader range of needs today and for the future.

3.2 Project Prioritization

The BEAD program defines a multi-layered project prioritization framework and calls on the NTIA to provide additional technical guidance.

Congress has established a prioritization framework for how states award BEAD program projects through competitive grant programs. The framework places substantial emphasis on scalable projects that provide future-proof access to unserved communities with high customer uptake and serves as an efficient method for comparing grant applications.

The framework includes three prioritization structures. The first dictates that states award BEAD funds to infrastructure project Location Classifications in the following order, only funding the next category after certifying with NTIA that all projects in the prior category have been prioritized:

I. Projects connecting unserved areas (less than 25/3 Mbps)

II. Projects connecting underserved areas (less than 100/20 Mbps)

III. Projects connecting eligible community anchor institutions (less than gigabit-level broadband service)

The second states that, within each Location Classification, priority must be given to Priority Broadband Projects as defined in the statute. The Priority Broadband Project:

1. Provides broadband service that meets speed, latency, reliability, consistency in quality of service, and related criteria (all to be defined by the NTIA); and
2. Ensures that the network built by the project can easily scale speeds over time to:
   - Meet the evolving connectivity needs of households and businesses; and
   - Support the deployment of 5G, successor wireless technologies, and other advanced services.

And finally, states must prioritize projects – priority projects first, non-priority projects second – based on the following preferences:

- ☐ Deployment to persistent poverty counties or high-poverty areas
- ☐ The speeds of the proposed broadband service
- ☐ The expediency with which a project can be completed
- ☐ Demonstrated record of, and plans to be compliant with, Federal labor and employment laws

Recommendations:

1. Design a grant program that remains efficient while complying with the prioritization of the three target Location Classifications (unserved, underserved, and community anchors).
2. Ensure Priority Broadband Projects can easily scale speeds over time to meet consumer needs.
3. Understand the future connectivity needs of households and businesses through outreach and consideration of historical demands, published forecasts, and emerging trends.
4. Seek expert technical advice on the evolving requirements of backhaul connections for 5G, successor wireless technologies, and other advanced services.
5. Evaluate how best to weight the final prioritization criteria (areas of poverty, broadband speeds, expediency, and labor law compliance) to achieve state policy goals – consistent with NTIA direction.

Rationale: The strict priority order applied to projects for the unserved, underserved, and community anchors creates a new layer of complexity for state broadband offices.

In terms of compliance with the Priority Broadband Project definition, we expect NTIA to provide parameters that are specific and quantified.

In addition, we expect NTIA will provide guidance on the statutory requirement that priority projects "can easily scale speeds over time."

This ease of scalability will enable households and businesses to retain the benefits of connectivity as application requirements change over time. It is also necessary to support the backhaul needs of 5G and successor mobile technologies. Broadband offices should be clear that this is one of the most critical decisions for the long-term future of communications infrastructure in their state.

The physical infrastructure funded by the BEAD program is the foundation on which the other broadband provisions of the IIJA will be built, including the Affordable Connectivity Fund and Digital Equity Act.

In the absence of a directive on ease of scaling, states will need to make their own determination on which technologies are sufficient for the long term. States should ensure that upgrades are operationally straightforward and do not require significant new investment or network reconfiguration to achieve required bandwidth, overall performance, and reliability.

State officials will also need to certify to NTIA that all the areas in the higher priority unserved tiers are addressed before awarding funds to projects in the next tier of priority. This could be solved by simply organizing a state's BEAD programs into distinct phases, inviting applications for each priority tier in turn. However, applications will inevitably span multiple tiers and grants awarded in the first round will take precedent over later projects.

An alternative may be for states to open the program for applications for all tiers at the same time. This approach would allow a more holistic assessment of applications against the overall program objectives. Compliance with statute would be achieved by awarding funds to projects in the sequence dictated by BEAD, but the assessment of which projects to fund in each tier would be informed by the full set of applications. Clearly, this approach is likely to result in a large influx of applications at the same time, so states will need to weigh the greater staffing demands and needs arising out of this approach against the benefits.

Last, in the final prioritization criteria, there are clear trade-offs between expediency and the other priority considerations. If no clear guidance is provided in the NOFO, state broadband offices should expect to hear from stakeholders seeking to favor expedited projects: in considering such advocacy, states must recognize that doing so may sacrifice network performance (i.e., speed, latency, and reliability) or keep projects from reaching harder-to-serve or higher-poverty areas. Clearly setting out the hierarchy of these competing priorities will help states deliver what is in the best interest of their current residents and those of future generations.

Case Study

Project Prioritization

For ARPA funds, the US Treasury gave flexibility for recipients to identify areas in need of additional infrastructure investment but suggested prioritizing areas that lacked reliable or affordable internet service. Projects were required to deliver symmetrical 100 Mbps speeds (unless impractical) to accommodate use of interactive applications such as virtual learning and video conferencing. In the final rule, the Treasury encouraged recipients "to prioritize investments in fiber-optic infrastructure wherever feasible, as such advanced technology enables the next generation of application solutions for all communities and is capable of delivering superior, reliable performance and is generally most efficiently scalable to meet future needs."[5]

State compliance with the final Treasury rule required prioritizing projects based on detailed project criteria. The BEAD program includes a similar framework – the Priority Broadband Project – although it lies within the broader set of Location Classification priorities.

3.3 Low-Cost Option

Affordability is critical to achieve wide-spread broadband adoption in low-income areas.

The BEAD program requires that every subgrantee offers a low-cost broadband service option. States are required to consult with NTIA and prospective subgrantees on the proposed definition of the low-cost option before submitting the proposal to NTIA for approval. Some aspects are spelled out in the statute, such as a prohibition on rate regulation. Beyond this, states will need to comply with any direction provided in the NOFO.

Recommendations:

1. Where states have latitude under the NOFO, avoid complexity in the definition of the low-cost broadband service option. Wherever possible, reflect what is already in the market or required by government and keep it simple to administer and deploy. For example, allowing providers to satisfy this requirement through participation in the FCC's Affordable Connectivity Program may present an effective option.
2. Engage with state agencies, universities, and other relevant institutions for data on broadband adoption and poverty, and other insight that can be used in the low-cost option design.
3. Engage early with potential subgrantees to solicit ideas and understand any potential concerns.
4. Investigate potential tradeoffs, such as the price at which providers may be discouraged from participation, especially in high-poverty unserved areas.
5. Learn about the economics of the providers. ISPs will each have their own installation, maintenance, and upgrade costs, typically driven by the underlying network technology.
6. Ensure that the low-cost option is scalable and will remain viable as bandwidth demands increase over time.

Rationale: The low-cost option needs to both be affordable for low-income households to achieve its objective and economically viable for the providers for it to work.

The primary concern of the providers we spoke to was that they wanted the low-cost option to reflect what they are already providing in the market or what government is already supporting. A service option that is easy to deploy will secure greater support from the subgrantees, and one that is economically scalable will grow with demand over time.

Case Study

Wisconsin

One of the objectives of the Wisconsin Broadband Office is to make high-speed broadband affordable. The goal of the office is for 75% of households with income below 200% of the federal poverty level to have access to a fixed, home internet service costing less than $25 per month by 2025.

Wisconsin uses two FCC programs to help achieve its affordability goal. First, the Lifeline program allows eligible telecommunications carriers to offer telephone and broadband services for a discounted lifeline base rate such as service packages for $25. Second, the ACP – part of the IIJA – offers discounts for internet service and a one-time discount for a computer or tablet. The benefits from these programs can be combined for those who are eligible.

Digital equity programs such as this are mutually beneficial for providers and customers. They allow low-income individuals to access good broadband service and increase the take-up rate for providers.

3.4 Match Funding

Match funding rules that properly consider the economics of infrastructure deployment in grant areas will achieve greater participation and better outcomes.

BEAD mandates a state or subgrantee minimum contribution of 25% towards each project's total cost, except in high-cost areas. Eligible sources of match include any combination of funds from:

- ☐ Private companies
- ☐ States and local governments
- ☐ Nonprofits, cooperatives, utility companies
- ☐ Regional planning or governmental organizations
- ☐ Federal regional commissions or authorities

High-cost projects are exempt from this 25% match requirement, and NTIA may waive the match requirement for individual projects upon request. (Note: "high-cost" is yet to be defined.)

The BEAD program permits selected federal funding to be used as matching funds. Specifically, funds allocated to states or local governments through Coronavirus Aid, Relief, and Economic Security Act (CARES), the Consolidated Appropriations Act of 2021, and the American Rescue Plan Act (ARPA) are all eligible.

Recommendations:

1. Assess the likely costs of deploying infrastructure to hard-to-serve communities and premises within the state to inform the match funding strategy.
2. Engage with potential subgrantees to understand the point at which prospective deployment projects become viable.
3. Identify available sources of match funding at the state and local level (including federal coronavirus relief funds) that can be directed towards the BEAD program.
4. Avoid imposing artificially high match requirements on BEAD program projects as this may discourage subgrant applications.
5. Remember that the federal 25% match requirement does not have to be fully met by the subgrantee. States can be creative and flexible in part-funding the match to overcome barriers to subgrantee participation.
6. When the definition for "high-cost" projects becomes available, determine whether it exempts all hard-to-serve projects in the state from the 25% match. If not, identify individual projects that may require an NTIA waiver or need further support from the state to become viable.

Rationale: Historically, state broadband programs have required a relatively high share of project costs to be met through match funds. At the time, states were operating with limited funds and there were many low-hanging project opportunities that were on the cusp of commercial viability.

For the BEAD program, neither of these conditions necessarily hold true. State officials have expressed concern that:

i. Many of the easiest-to-solve broadband projects have already been funded

ii. The remaining unserved and underserved areas have a more challenging business case

iii. Projects targeting these hardest-to-reach areas are not viable when providers must front a substantial percent of the project cost

Funding the remaining areas may require states to take a different view on expectations for match funding. Already states have begun to lower the minimum match requirement from a high of 95% down to 25% or eliminating it altogether.

With a better understanding of deployment costs and the subgrantee business case, states can make informed choices about how low to set the minimum match to achieve their coverage goals. This may

be another reason for states to undertake their own mapping efforts even though FCC maps must ultimately be used in making awards. Some states will likely transpose the federal 25% requirement directly into the subgrantee requirements, but there are alternatives.

States can accept applications with below-25% match if they direct financial resources from other sources (e.g., Federal coronavirus relief funds) to bridge the gap. This will open the BEAD program to a wider range of projects, covering more challenging locations.

The exemption for high-cost projects is expected to address many such cases – by allowing projects with a private match below 25% – however, there is a risk that the high-cost definition as implemented in NTIA's NOFO could be too narrow to capture the full range of situations in every state. Elsewhere, states will have to navigate the NTIA waiver process or intervene themselves by partially funding the match.

Ultimately, states will need to develop a strategy that maximizes the reach and benefits delivered by BEAD by attracting external investment. Careful design of the match requirements will lead to more projects being funded, incentivize providers to maximize their contribution, and ensure that projects are financially sustainable.

3.5 Reporting

States should prepare for a step-change in the amount of reporting that will be required.

The BEAD program requires states to submit semiannual reports to the NTIA that describe the status of the program, grant-funded coverage, and uptake. An initial report and final report are also required at the start and end of the BEAD program respectively.

The BEAD program also specifies detailed reporting requirements for the subgrantees. In the case of infrastructure projects, this includes lists of serviceable locations, a description of the facilities, and detail on the services offered.

Recommendations:

1. Start planning for reporting requirements early on. Many important aspects can be progressed such as how data will be collected, where it will be stored, and team responsibilities for collation, analysis, and quality assurance.
2. If not defined in the NOFO, develop a template for the subgrantee reports to facilitate data collection and, potentially, enable some automation of the analysis.
3. Understand the NTIA reporting timeline and plan this into the monthly activities of the team.
4. Consider how best to combine federal and state-level reporting needs to avoid duplication and increase efficiency.
5. Assess how much additional resource will be required to manage the expected volume of work.

Rationale: Until now, states have been largely free to design their own broadband office reporting regime, providing it complied with general accounting practice and audit requirements. With the BEAD program, the federal government is being more prescriptive. Not only are states handling high-value grants, but the federal agencies will want to ensure a level of consistency across the program.

STATE REPORTING CHECKLIST

A. Initial Report (submitted no later than 90 days after receiving funds)

- ☐ Describe the planned and actual use of funds
- ☐ Describe the planned and actual process of disbursing grants
- ☐ Identifies the establishment of appropriate mechanisms to ensure all grantees comply with eligible uses
- ☐ Any information required by NTIA (yet to be announced)

B. Semiannual Report (not later than 1 year after receiving funds, and every 6 months after until funds are expended)

- ☐ Describe how the state expended the grant funds
- ☐ Describe each service provided with the grant funds
- ☐ Describe the number of locations at which broadband service was made available
- ☐ The number of locations where broadband service was utilized
- ☐ Certify that the state complied with requirements from the IIJA
- ☐ Certify that the state complied with any additional reporting requirements prescribed by NTIA

C. Final Report (not later than 1 year after all funds are expended)

- ☐ Describe how the state expended the funds
- ☐ Describe each service provided with the grant funds
- ☐ Describe the number of locations at which broadband service was made available
- ☐ The number of locations where broadband service was utilized
- ☐ Include each report that the state received from a grantee (see next table)
- ☐ Certify that the state complied with requirements from the IIJA
- ☐ Certify that the state complied with any additional reporting requirements prescribed by NTIA

SUBGRANTEE SEMIANNUAL REPORT CHECKLIST (FOR DURATION OF THE SUBGRANT)

A. Describe each type of project using the grant and the duration of the grant

B. Details of the broadband infrastructure project

- ☐ List of addresses or locations that constitute the service locations that will be served by the broadband infrastructure
- ☐ Identify whether the above address/location is residential, commercial or community anchor institution
- ☐ Describe the type of facilities that have been constructed and installed
- ☐ Describe the peak and off-peak actual speeds of broadband service being offered
- ☐ Describe the maximum advertised speed of the broadband service being offered
- ☐ Describe the non-promotional prices, including any associated fees, charged for different tier of service being offered
- ☐ Any other data that would be required to comply with the data and mapping collection standards of the FCC
- ☐ Complying with any reasonable reporting requirements determined by the state or NTIA

C. Certify that the information in the report is accurate

3.6 Payments

An efficient payment process helps subgrantee cashflow enabling them to build further faster.

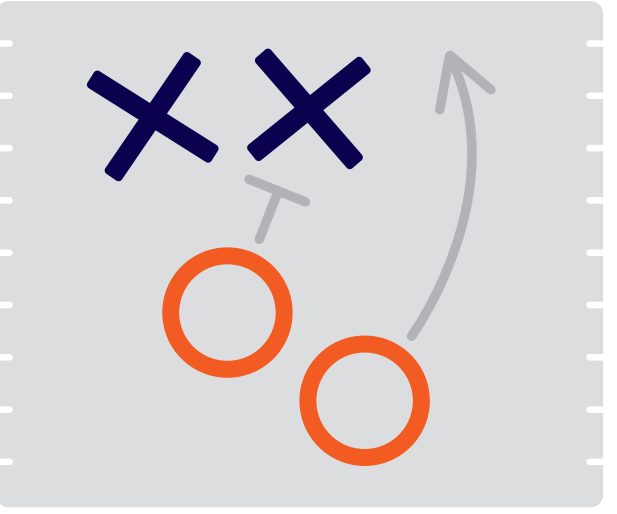
The BEAD program provides no specific guidance on the process that states should adopt for disbursement of funds to subgrantees. Existing state broadband schemes have used a variety of approaches:

- Reimbursement on expenditure, where individual receipts are submitted to the state broadband office and reimbursed thereafter.
- Project milestone payments, where expenses are reimbursed at key project milestones such as the percent of households passed.
- Partial calendar payments, such as every quarter or every half year.
- Total reimbursement on project completion.

Recommendations:

1. Adopt a payment approach that minimizes the lag between subgrantee expense and reimbursement while ensuring adequate oversight.
2. Identify opportunities to streamline existing payment processes, for example using an electronic workflow for payment approval.
3. Ensure that teams responsible for managing payments are adequately staffed for BEAD and primed to handle the expected volume of transactions.
4. Set clear expectations with applicants to avoid reimbursement adversely affecting broadband deployment.

Rationale: Consideration should be given to the impact that delays in reimbursement may have on subgrantee cashflow, particularly for small ISPs. Identifying opportunities to reduce the time to process payments will help avoid this becoming a blocking factor. The goal is to not dissuade experienced, capable providers from applying for BEAD program funding, which is why expectation setting from the very beginning is critical.



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ADMINISTERING THE BROADBAND GRANT PROGRAM

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This section outlines the processes required to successfully run a state grant program, based on the design decisions outlined above. The sections are organized chronologically, from pre-award to post-award.

4.1 Pre-Application Engagement

Effective engagement will result in greater participation, higher-quality applications, and better state outcomes.

Stakeholder engagement receives limited attention outside of the Location Coordination requirements that NTIA will establish for states to follow in developing their BEAD program proposals and consulting with prospective subgrantees on the design of the low-cost option. The depth and breadth of local engagement at this stage of grant program administration is a matter for each state to determine.

Recommendations:

1. Map out relevant stakeholders within the state and identify the information they need to secure full participation in the program. Include prospective subgrantees, local government, community groups, and others that may play a role in delivering on the promise of BEAD.
2. Create a communications grid for the program, showing when information will be communicated, to whom, and through which channels.
3. Identify program areas on which each state should solicit stakeholder feedback. Determine the timing of any consultations, calls-for-input, and written open comments. Add these to the grid.
4. Publish a state grant program NOFO with as much detail as possible. See the suggested checklist that follows.
5. Host a series of Q&A sessions with key stakeholder groups. Publish transcripts or recordings of all sessions on the state website.
6. Allow for a period of written clarifying questions. Publish the (anonymized) answers to ensure a level playing field.

CHECKLIST – RECOMMENDED CONTENTS OF STATE NOTICE OF FUNDING OPPORTUNITY (NOFO)

- ☐ Available funding
- ☐ Required application materials
- ☐ Application timeline
- ☐ Application scoring methodologies
- ☐ Project prioritization criteria
- ☐ State or federal laws pertaining to hiring practices
- ☐ Workforce development incentives
- ☐ State and federal subgrantee reporting and reimbursement requirements
- ☐ Draft subgrant agreement
- ☐ Matching fund requirements

Rationale: Effective stakeholder engagement will result in greater participation in the program. Advertising the funding opportunity can encourage applicants to apply, increasing the state's odds of reaching all unserved territories.

Publication of the NOFO communicates important grant details to the prospective subgrantee community. Providers who are well-informed by the NOFO are likely to submit higher quality applications. They can use explicit priorities and evaluation guidelines to tailor applications to fit exact community need.

Finally, the BEAD program will require the support of a variety of stakeholders, including providers, local governments, communities, and state agencies. The NOFO informs each of these parties about the availability of funds and ensures they have time to prepare in assisting applicants.

Workforce Development Case Study

Louisiana

Louisiana highlighted in its NOFO an incentive to include a workforce plan prioritizing the hiring of local workers in applicant project proposals. At a minimum this includes the commitment to offer the prevailing wage rate or above and include a description of the safety and training standards. The plan will ideally include a signed letter of intent with a post-secondary educational institution to make a 'good-faith' effort to hire recent graduates of broadband related programs. This often involves the company working with local community colleges to develop a curriculum for their labor needs.

Louisiana's approach highlights the value of building relationships with local institutions. It ensures projects will have the necessary workers while also supporting local education institutions.

Broadband offices should note that Workforce Opportunities for Rural Communities (WORC) and the Apprenticeship Readiness grant programs by the Department of Labor can be used for training broadband workers.

4.2 Subgrant Application

States are likely to be inundated with subgrant applications. Templated forms that support objective scoring will reduce processing time.

The BEAD program sets out the criteria by which state broadband offices must prioritize broadband infrastructure projects but does not specify precisely what information should be collected. In addition to answering the check-box eligibility conditions, states will need to collect information to evaluate the quality of the proposed project, and the capabilities of the applicant. We expect NTIA's NOFO will provide guidance on this issue, which will be reflected in revised versions of this Playbook.

Recommendations (Consistent with the NOFO):

1. Use templated forms with multiple choice questions where possible to enforce a consistent format for responses. Design the form such that the metrics used for scoring can be easily accessed or computed.
2. Gather information to enable applicants to be assessed objectively for financial, managerial, technical, and operational capability.
3. Allow applicants to include descriptive narrative, setting out the context, vision, and objectives for their proposed project. This should not form part of the assessment.
4. Hold the application period open for 1 to 2 months to allow all applicants to prepare high-quality submissions.
5. Publish all non-sensitive application materials on the website after all applications have been submitted.

Rationale: Releasing the grant application is a major milestone in the state's grant program. It is important to both state broadband officials and to subgrantees. The office must ensure that all necessary information for scoring, and evaluation of proposed projects is included in the application. For subgrantees, the application will represent tens if not hundreds of hours of work and is the only opportunity they have to represent and advocate for their project vision.

Transparency in the application process, both in providing clear guidelines and publishing submitted applications, will aid subgrantees in completing their application and build trust with the stakeholder community at large.

CHECKLIST – INFORMATION REQUIRED FROM APPLICANTS

Overview

- [ ] **Executive Summary:** Narrates the current problems and the applicant's capacity to solve them. The executive summary can show officials that the applicant has the wherewithal to deliver on meaningful solutions.

Applicant Details

- [ ] **Company Information:** Registered address; details of incorporation; officers; DUNS number; etc.
- [ ] **Financial Information:** Recent financial data; capacity to finance the project (T/F).
- [ ] **Managerial Capability:** Description of previous broadband infrastructure deployment projects; experience working with federal/state broadband grant programs; number of successful project deployments
- [ ] **Operational Capability:** Organization chart; headcount; capacity to deliver the project (T/F).
- [ ] **Technical Capability:** Prior experience of deploying and operating target technology; number of applicant networks operating on target technology.

Mandatory Requirements

- [ ] **BEAD Requirements:** Confirmation that the project meets the BEAD minimum criteria, including compliance with state and federal labor laws.

Project Details

- [ ] **Project Summary:** Project size, scope, technology, and digital equity efforts; proposed service speed, and maximum scaling capacity.
- [ ] **Project Location Information:** In the form of an address level map or shapefiles.
- [ ] **Broadband Service Description:** Product portfolio; service tiers; pricing.
- [ ] **Evidence of Community Support:** Such as letters of support from residents, businesses, or local governments; proposed project partnerships.
- [ ] **Project Readiness Documentation:** Program plan; permits; certifications. Demonstrates the applicant has thoughtfully planned their project.
- [ ] **Customer Strategy:** Plans for customer acquisition and stimulating adoption.
- [ ] **Technical Design:** Detailed engineering plans (including clear statement of assumptions with respect to capacity requirements and performance capability); network architecture; deployment methods.

Financial Details

- [ ] **Proposed Budget:** Including estimated material and labor costs by category.
- [ ] **Match Amount:** Proposed match amount and match sources.
- [ ] **Impact and Sustainability:** Business case quantifying premises served; scalability of technology and financial sustainability; Net Present Value analysis beyond the first upgrade cycle.

4.3 Applicant Challenge Process

Hosting an additional challenge process that opens applications to scrutiny and challenge helps to avoid funding unnecessary projects.

In earlier funding rounds, state broadband offices found mapping data was often unreliable: premises considered served were unserved, and vice versa. States resolved this by inviting providers to challenge applications prior to grant awards. In addition to resolving data quality issues, the challenge process also allowed providers to identify areas that are already planned for commercial deployment.

Recommendations:

1. Conduct a challenge process after applications have been received and published online.
2. Require challengers to bear the burden of proof, for example, in demonstrating current service speeds of a territory, drops in service speeds over time, or evidence of a clear commitment to build and provide service to a territory within 6 months.
3. Assess challenge validity with care leveraging state broadband office expertise and data sources to determine whether reliable service is available or not.
4. Discourage vexatious challenges by imposing penalties on those who lodge unsubstantiated claims or fail to follow through on service commitments.
5. Capture information from successful challenges to refine the broadband availability map.

Rationale: The FCC Broadband DATA map promises to resolve many of the issues that states previously encountered. However, even this updated map will not be perfect. A separate challenge process is essential to catch any progress in deployment since the FCC data collection and allow for future build plans to be considered.

Moreover, the bar for a successful challenge should require the presence of reliable coverage, in line with the BEAD program's core objective of providing access to "affordable, reliable, high-speed broadband." The NTIA NOFO may provide clear guidance on what constitutes reliability. In addition, states can review existing definitions such as the U.S. Treasury guidance on ARPA outlined above in Section 3.2.

4.4 Scoring & Consideration

A well-designed scoring rubric will enable states to assess applications efficiently and fairly.

The BEAD program makes clear the factors states have to consider when assessing project eligibility and priority. Each state's assessment process and scoring rubric must be designed around these requirements.

We expect NTIA will provide detailed guidance on the assessment of subgrants. Our recommendations reflect what is currently known.

Recommendations:

1. Assemble an impartial state evaluation committee with expertise in technology, engineering, geospatial analysis, and financial assessment. Include members with strong knowledge of state and local conditions, such as terrain, technical restrictions, permitting, and labor law.
2. Introduce an initial screening stage to verify applications are complete and comply with basic requirements.
3. Use the expert panel to vet applicants for financial, managerial, technical, and operational capability.
4. Adopt scoring methods for project prioritization that are simple, transparent, quantifiable, and objective – using key inputs taken directly from the application forms.

5. Provide feedback to unsuccessful applicants so that they can improve in subsequent rounds. Also consider publishing scores to improve transparency in the assessment process.

Rationale: Based on the expected volume of applications, an efficient scoring process will be critical. Excel workbooks can be particularly useful for quantitative information, lending themselves to efficient analysis of applicant data.

Assessment of applications needs to be objective, which is why scoring applicants based on quantifiable data is key. Subjective scoring of the project narrative should be avoided as far as possible as it can lead to the assessment missing important application details in favor of "shiny" solutions.

Scoring & Consideration Case Study

Iowa

Iowa has a scoring process that relies heavily on a formula driven approach. Beyond freeing up state resources, Iowa found that applicants appreciated the level of clarity quantitative scoring provided.

The scoring is completed by two teams. The first performs the technical review and quantitative scoring. It is comprised of both Iowa state broadband staff and external technical contractors familiar with the Iowa state broadband grant program. The contractors assess the application's engineering plan, while the Iowa officials check the completeness of the application. If any areas are missing, or if they have any engineering questions, they reach out to the applicant for complete information. For the quantitative scoring section, the team uses formulas laid out in Iowa's grant NOFO. Applications are then ranked based on the score calculated from the formulas.

The second team is the disqualification review team, who evaluate the project for any factors that would disqualify it. This team comprises of only Iowa state broadband staff, as the section requires a subjective review of the application.

Technical vetting is the one area where expert opinion will likely be required. Applicants should clearly demonstrate they have the wherewithal and capability to deliver and operate the proposed project. An impartial engineering panel will be able to assess applicant credibility in this area.

The BEAD program places responsibility on each state broadband office to deliver meaningful and lasting change to the state's communities, so it is imperative that the methods used by the office install confidence in the system and convey program fairness. Having a transparent quantitative scoring system, minimizing the scope of qualitative assessment, and providing clear communication of award considerations, will help to demonstrate that process is fair and open to all providers.

Example BEAD Scoring Framework

1. MANDATORY ELIGIBILITY CRITERIA
Assess that project satisfies all the following to be considered eligible:
Minimum speed of 100/20 Mbps
Sufficiently low latency
Less than 48 hours of outage/year
Expect to complete deployment within 4 years of grant date, or have state exception
Plan to provide wholesale backup option if no longer operating network
Offer at least one low-cost broadband option
Provide broadband service to each customer that desires it
Provide public notice of service and carry out a public awareness campaign

2. LOCATION CLASSIFICATION PRIORITIZATION
Determine project's Location Classification. The state must address and finish funding each Location Classification in the following order:
1. Eligible Unserved Areas (up to 20% served or underserved locations)
2. Eligible Underserved Areas (up to 20% served)
3. Community Anchor Institution Areas

3. PROJECT PRIORITIZATION
Assess whether project is a Priority Broadband Project. States must fund Priority Broadband Projects before other projects. Priority Broadband Projects will be later defined by the NTIA based on the following criteria: • Speed, latency, reliability, and quality of service • Ability to easily scale speeds to meet evolving connectivity needs • Support the deployment of 5G, successor wireless, and other advanced services Once projects are classified as priority or not priority, a quantitative scoring system can be used to rank applications within each category. States should consider awarding points based on the following attributes:
More Unserved Locations (i.e., above the 80% eligibility requirement)
Faster Service Speeds
Lower Latency
More High-Poverty Locations
Faster Build
Higher Match (i.e., above the 25% minimum in areas not considered high cost)
Greater 5G Support

4.5 Selection & Contracting

Application selection and subgrantee contracting cement the legacy of the state broadband grant program.

Having prioritized the eligible projects, states will need to determine which combination of projects will ensure coverage of broadband service in the three Location Classifications (unserved, underserved, and community anchors), starting with unserved locations. At this stage, overlapping applications will also need to be addressed, and low priority applications must be updated.

Recommendations:

1. Systematically analyze the coverage of prioritized applications to determine how to fully serve each Location Classification in turn.
2. Identify and eliminate overlap by pruning back the footprints of lower scoring and lower priority applications. Provisional subgrantees to be notified of any application modifications prior to contracting.
3. Publish details of successful projects on the state broadband office website for full transparency.
4. Organize publicity to celebrate the subgrant awards.
5. Return to scored list of applicants and offer additional awards if any projects fall through.

Rationale: It is likely that states will find overlap between eligible project footprints. Eliminating an entire application due to a partial overlap is inefficient. Instead, the applicant should be given the opportunity (but should not be required) to amend its application to serve the remainder of its footprint.

Following the selection process, publishing the details of successful projects maintains transparency, creates accountability, and builds trust. Publicizing the signing of the subgrant awards celebrates an important milestone and notifies stakeholders that the BEAD program is now moving into the infrastructure deployment phase.

Selection Case Study

Iowa

In Iowa, the program lead and state geospatial staff examine projects that are candidates for grant awards and highlight overlapping areas. Higher ranking applicants are awarded the territories unless a lower scoring applicant proposed a higher speed. A decision is then made whether to award partial or full award to each applicant affected by overlap. Any partial award is dictated by a formula included in the grant NOFO based on area calculated from the map. This approach avoids leaving good applications without any award but requires geospatial capabilities (either from internal staff or contracted help).

4.6 Post-Award

Following the subgrant award, the state must monitor project progress and regularly report on the impact of BEAD program funding.

States will require a monitoring and reporting function for the life of the BEAD program. The final report is due the year after all funds are expended, and eligible projects may still be under construction for years after a subgrant award. This operational team will require technical and financial expertise and must be right sized for the scale of broadband infrastructure construction within the state. Performance testing for service attributes such as speed and latency, either by the FCC or an equivalent, can ensure projects meet promised performance capacities upon completion and beyond.

Recommendations:

1. Build good relations with subgrantees. Communicate after award to assess subgrantee preparation and review guidelines.
2. Conduct a preliminary site visit. Meet with awardees and partners, visit construction sites, and ensure regulatory and programmatic compliance.
3. Maintain effective stakeholder management throughout the program. Communicate regularly with state agencies and local government representatives to identify and overcome barriers to deployment.
4. Publish regular press releases on subgrantee progress and celebrate important milestones to show the public that taxpayer dollars are being put to good use.
5. Conduct a final site visit. Meet with customers, validate project scope adheres with application commitments (e.g., network span, speeds, solutions, pricing, etc.), and celebrate the project completion
6. Perform audits on subgrantees after project completion to ensure financial accountability. Submit any concerns directly to the NTIA.
7. Test service performance at and after project completion to verify provided service meets applicable speed and latency requirements.
8. Publish an assessment quantifying the impact of BEAD funding on state broadband development.

Rationale: After all grant agreements have been signed, the state can shift focus to monitoring and supporting project execution. In a construction program of this scale, it is inevitable that unforeseen issues will occur. With good relationships, the broadband office can play a key role in coordinating the response.

ACKNOWLEDGMENTS

The authors would like to thank everyone that supported the development of the Playbook. We are indebted to the state broadband officers for sharing the insight gained from previous funding rounds, enabling us to impart this to other states as they prepare for BEAD.

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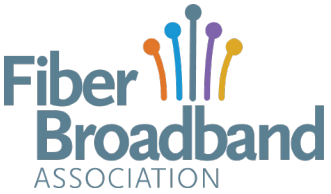
This playbook is meant to provide ideas and suggestions to readers as they consider how best to structure new broadband grant programs and should not be considered legal advice. It is not intended, nor should it be used, as a substitute for specific legal advice that would be provided by legal counsel regarding federal and state requirements with respect to creation and implementation of such programs. By virtue of providing this information, FBA and NTCA are neither providing legal advice nor acting as counsel.



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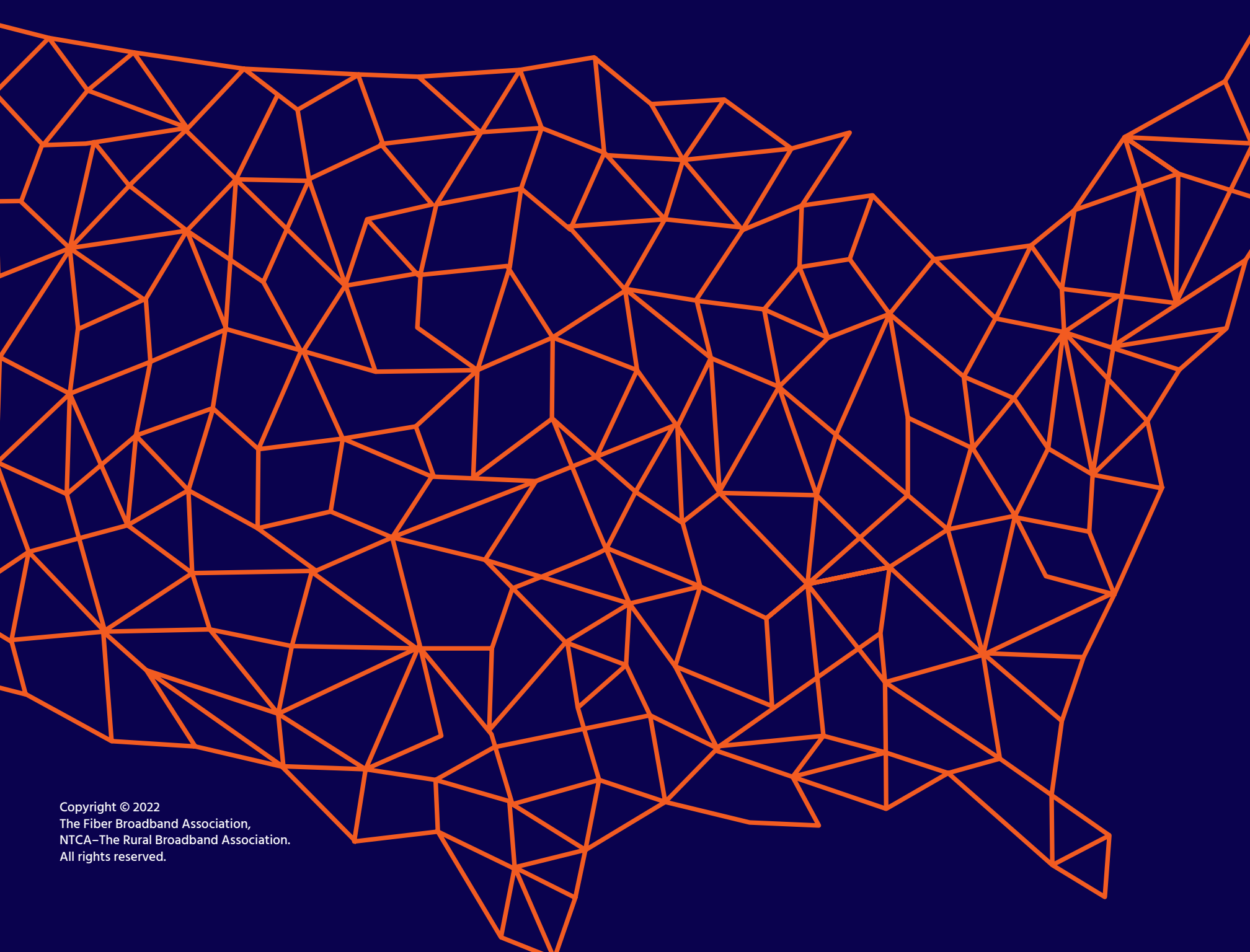

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