



Department of
**Economic &
Community Development**

BEAD INITIAL PROPOSAL

Volume 2 Draft

Overview of the Broadband Equity, Access, and Deployment (BEAD) Program

The Broadband Equity, Access, and Deployment (BEAD) Program was authorized by the Infrastructure Investment and Jobs Act of 2021 ('Infrastructure Act'), also known as the Bipartisan Infrastructure Law. The BEAD Program provides new federal funding to the National Telecommunications and Information Administration (NTIA) to grant to all fifty states, the District of Columbia, Puerto Rico, and the United States Territories for broadband planning, deployment, mapping, equity, and adoption activities.

The Infrastructure Act included \$42.45 billion to create the BEAD Program, and Tennessee was allocated \$813.3M. To learn more about the BEAD Program, read the Notice of Public Funding [here](#).

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Volume Two Initial Proposal Requirements Overview

The State of Tennessee has drafted the following to meet the requirements for Volume One of the BEAD Initial Proposal:

- Requirement 1 – Objectives
- Requirement 2 – Planning Coordination
- Requirement 4 – Stakeholder Coordination
- Requirement 8 – Subgrantee Selection
- Requirement 9 – Non-Deployment Subgrantee Selection
- Requirement 10 – Eligible Entity Implementation Activities
- Requirement 11 – Labor Standards and Protections
- Requirement 12 – Workforce Readiness
- Requirement 13 – MBE/WBE/Labor Surplus Firms Inclusion
- Requirement 14 – Cost and Barrier Reduction
- Requirement 15 – Climate Readiness
- Requirement 16 – Low-Cost Service Option
- Requirement 17 – Initial Proposal Funding Request
- Requirement 18 – Regulatory Approach
- Requirement 19 – Certification of Compliance
- Middle Class Affordability Plan

For the purposes of this proposal, “Eligible Entity” refers to the Tennessee Department of Economic and Community Development (TNECD), which is the department that houses the State Broadband Office. “The State” also refers to the Eligible Entity, TNECD.

Objectives (Requirement 1)

Tennessee’s vision for broadband deployment is to develop an ecosystem that fosters complete broadband availability and digital opportunity across all communities. We are not only working to ensure that all Tennessee households and businesses have access to broadband infrastructure but also that they have the resources to adopt the internet and a broadband connected device successfully and sustainably. This requires successful implementation of two vision areas: broadband access and digital opportunity.

Broadband Access:

‘Broadband Access’ means that all Tennessee households and businesses have access to a fixed terrestrial connection. Our vision for this type of ubiquitous connectivity includes:

- All Tennesseans are served at speeds of at least 100/20mbps, with scalability to meet their future speed needs.
- All Tennesseans have access to an interim solution while they are awaiting broadband infrastructure buildout at their home and/or business. This can include, but is not limited to, a community connectivity hub, a Wi-Fi hotspot, or access at a community anchor institution (CAI) like a school or library.

- All Tennesseans have options to subscribe to a broadband plan that meets both their speed and affordability needs.
- All Tennessee internet service providers have an open and equal opportunity to apply for state administered grant funding to serve areas lacking a 100/20mbps connection in Tennessee.

Digital Opportunity:

'Digital Opportunity' means that all individuals in Tennessee have access to the resources they need to access, adopt, and utilize broadband connected technology. Our vision for digital opportunity in Tennessee includes:

- All Tennesseans have access to resources to learn and/or improve digital skills so that they feel comfortable using a broadband connected device.
 - Resources may include, but are not limited to, digital skills training courses at no-cost or reasonable rates in the community, training resources at schools and/or libraries, and digital focused training opportunities from community anchor institutions and/or nonprofit organizations.
 - Digital skills may include, but are not limited, to internet safety, basic and/or advance computer skills, how to connect to an internet connection, and how to use basic software and computer search engines.
- All Tennesseans have access to an affordable device. These options may include, but are not limited to, a low-cost or refurbished device, a community connectivity hub device rental, or a computer lab at a local library or other community anchor institution.
- All Tennesseans interested in technology jobs have the skills needed to access, apply, and succeed in a tech or digital focused position, including teleworking or telecommuting. This may include but is not limited to, tech and IT focused short- term credentialling programs, advanced skilled courses like coding and software development, and training resources for individuals working from home.
- Individuals in Tennessee are prepared to fill the broadband infrastructure workforce pipeline to deploy high speed internet to all Tennesseans. This may include, but is not limited to, more telecommunications-focused workforce development training opportunities, community and technical courses and programs focused on broadband infrastructure, as well as increasing knowledge and marketing of these programs across secondary education, adult education, and reentry programs.

The State of Tennessee recognizes the importance of high-speed internet and digital opportunity in every community. We know that these vision areas impact access to healthcare, education, increased quality of life, workforce development opportunities, and community development. We are excited to close the digital divide in Tennessee and have outlined measurable goals to achieve this vision.

Broadband Access:

Tennessee's State Broadband Accessibility Map estimates that nearly 609,293 Tennesseans across 243,717 locations still lack internet at speeds of 100/20mbps. To serve these Tennesseans we will:

- Deploy broadband to all unserved and underserved locations through broadband infrastructure programs. These programs will include competitive infrastructure grants that take a location-based approach, making sure to not exclude or miss any household or business that lacks a 100/20mbps connection.
- We will prioritize the nearly 186,394 locations that lack broadband of speeds of at least 25/3mbps. This includes investing in broadband infrastructure deployments that incentivize going to the highest cost, most remote areas first.
- While working to address infrastructure deficiencies, we will also work to deploy interim solutions to individuals and communities who still lack a fixed, terrestrial connection due to affordability and digital skills training gaps. This will include investing in broadband programs in public places like libraries, community connectivity hubs, and community anchor institutions in all 95 counties in Tennessee.

Digital Opportunity:

Digital Opportunity for all Tennesseans remains at the forefront of our 5-Year Action Plan. As we work to ensure that all communities have what they need to successfully connect and adopt to broadband connected technology, we will:

- Invest in community anchor institutions and nonprofits focused on broadband adoption, digital skills training, and affordability programs in all 95 counties in Tennessee.
- Generate partnership among digital opportunity stakeholders across the state by assisting in the coordination of their outreach plans.
- Work with community anchor institutions and digital opportunity stakeholders to promote the Affordable connectivity program and increase participation by 35%.
- Create digital opportunity ecosystems by working with localities to identify where broadband adoption gaps are prevalent and respond focused local coordination, as well as technical assistance for planning and implementation of local digital opportunity plans.

Local, Tribal, and Regional Broadband Planning Processes (Requirement 2)

The Tennessee Broadband Office has engaged with 905 individual stakeholders, including those in unserved and underserved communities, through over 59 meetings during the BEAD planning process. These groups have spanned from all 3 regions in Tennessee, cover rural, urban, and suburban areas, and provide perspective from all 8 covered populations. Please note that Tennessee does not have any federal recognized tribes. Refer to section 2.4.8 to learn more about TNECDs tribal engagement.

We plan to continue to engage and coordinate with broadband and digital opportunity stakeholders throughout the BEAD process, especially during our public comment periods. This allows us to gain valuable perspective as we build a strategy for getting all Tennessee households and businesses served with high-speed internet. The Tennessee Broadband Office also plans to do a variety of other engagement activities. These include listening sessions, grant program outreach, and a state-run challenge process.

In addition, we also plan to continue engaging with our Digital Opportunity Task Force who meets monthly to discuss and inform our state's Digital Opportunity Plan and address issues around broadband affordability, devices, digital skills, and workforce development.

The table below outlines our engagement strategy:

Engagement	Stakeholder Audience	Purpose	Activities
Listening Sessions	Internet Service Providers	Gain feedback on Volume 1 and Volume 2 of the BEAD Initial Proposal	Listening sessions will take place through in- person, virtual and hybrid meetings. We will also allow entities to share written feedback on the Initial Proposal and document the information we receive for planning and implementation.
Public Comment Processes	Internet Service Providers Units of Government Non-Profits and Community Anchor Institutions Community Leaders & Citizens	Gain feedback from communities, future applications, and stakeholder organizations on our broadband strategy for serving all TN households and businesses with high-speed internet.	TNECD will reach out directly to stakeholder groups, including our library systems, to promote the process and encourage participation. We will also post information on our website (www.tn.gov/broadband).
Grant Program Outreach	Internet Service Providers Units of Government	Promote application process and provide technical assistance. Provide overview of grant process and technical assistance regarding broadband gaps in their community. Promote partnerships with ISP applicants for new and or improved connections across internet gaps and	Outreach will include promotional emails from our Broadband Office (ECD.Broadband@tn.gov). We will also conduct pre- application webinars for each of these stakeholder groups that cover the relevant content needed for their participation in the grant program. We will also conduct application workshops for providers and provide virtual office hours for technical assistance.

	Non-profits and Community Anchor Institutions	opportunities to support broadband applications.	
Targeted Outreach and Engagement	Historically Unserved & Underserved Communities	To better understand gaps in coverage and need for high-speed access in historically unserved and underserved areas. Ensure broadband is built out in a reliable, affordable, and timely manner.	Stakeholder meetings, sessions, and surveys will be conducted in partnership with trusted community partners.
State Challenge Process	Internet Service Providers Units of Government Non-profits	Allow entities to challenge areas/locations deemed as eligible for the BEAD funded broadband infrastructure grant programs.	Pre-Challenge Process webinar with eligible entities to explain what the process is, how it will work, and answer any questions they may have. Technical Assistance will be provided via email (ECD.Broadband@tn.gov) and through set virtual office hours with the Broadband Office.
Area Selection Public Comment Process	Internet Service Providers	Allow Internet Service Providers to provide feedback on grant application area boundaries	Following the challenge process, TNECD will post the grant application areas on the TNECD website (tn.gov/broadband) for public comment and feedback to ensure necessary considerations are taken into account such as geographic barriers and service areas

Stakeholder Coordination (Requirement 4)

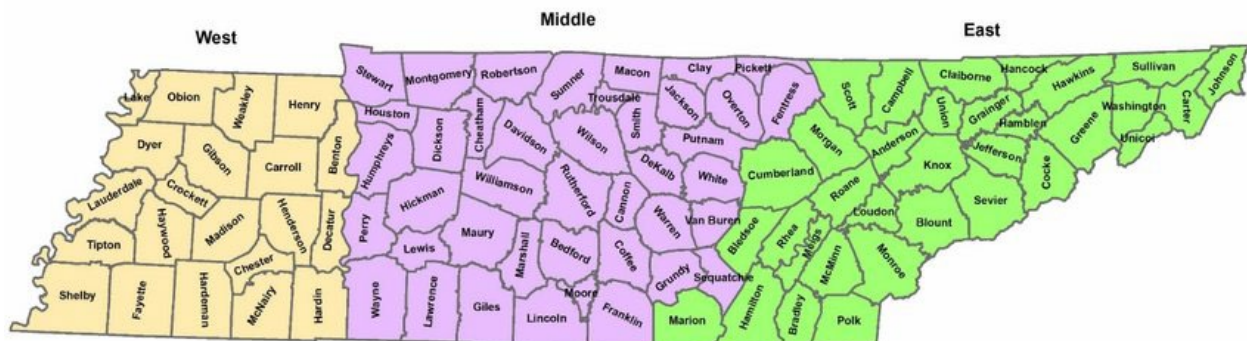
TNECD has long fostered the importance of stakeholder relationships and has continued to develop and engage those relationships throughout all broadband projects. Since the initial announcement of BEAD, TNECD has leveraged these as a foundation for all steps along the way – continuing to coordinate with diverse stakeholder groups across the state. During the initial BEAD planning stages, during development of TNECD’s Five Year Action Plan, Digital Equity Plan, and IP Volume 1, these stakeholder groups, as well as the public, have provided critical insights and opinions for developing these documents through webinars, in-person listening sessions, and public comment opportunities. TNECD remains vigilant in its efforts to remain engaged with stakeholders through further development and implementation.

This section will detail the efforts through the lens of the 5 criteria outlined in the BEAD NOFO regarding local coordination efforts. Each subsection contains specific examples of how TNECD met these criteria represented in the figure below:



3.1 Geographic Coverage

TNECD was able to reach full geographic coverage of the State during its coordination efforts by virtue of regional planning and listening sessions. TNECD traveled to each of our three regions (West, Middle, East) and held local engagement sessions in each region for the relevant stakeholder groups. Throughout the life of BEAD, TNECD has engaged and coordinated with its stakeholders for the Five-Year Action Plan, Volume 1, Volume 2, Digital Equity, and beyond.

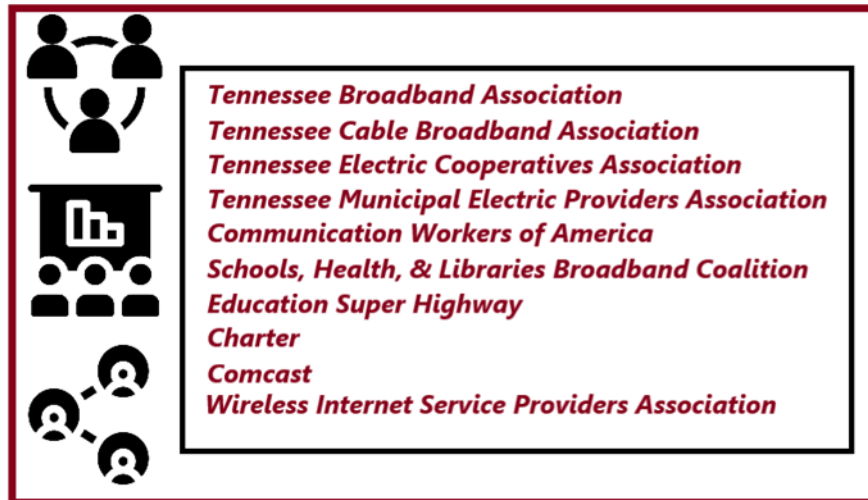


The above figure (via ResearchGate) represents the delineation between Tennessee regions. When planning listening sessions, TNECD reached out to stakeholder groups, who collectively represent these regions, for feedback on dates and locations – often the associations offered to host the session at their main or central location in the region. TNECD also offered virtual options for those who were unable to join in person - and accepts and responds to public inquiry via email - leading to even more participation geographically. Attached later in this section is a complete table of local coordination efforts conducted by TNECD and its members throughout the BEAD planning process.

3.2 Diverse Stakeholder Groups

TNECD is proud to work with and include input from various Broadband Associations throughout the process, including, but not limited to, the TN Cable Broadband Association (TNCBA), TN Electric Cooperatives Association (TECA), Tennessee Broadband Association (TNBA), and the TN Municipal Electric Provider Association (TMEPA). In addition to the mentioned associations, TNECD further involved representatives of public, private, and

nonprofit organizations and the public through Public Comment in addition to listening sessions. Additionally, TNECD has been, and will continue, working closely with the University of Tennessee Center for Industrial Services (UT CIS) to ensure a more research-based methodology is present, coherent, and representative of best-interests in the State. This also includes assistance with outreach, where applicable, to local, regional, federal, and national organizations that directly or indirectly serve covered populations, and those organizations with industry concerns regarding Workforce, Fair Labor Practices, etc. The below figure includes the organizations who provided valuable feedback during Volume One and Two listening sessions, Workshops, Focus Groups, or public comment periods:



In addition to collecting feedback from this diverse group of stakeholders via in-person or virtual listening sessions, TNECD also hosted online meetings and webinars to cover key topics and solicit feedback during BEAD planning and has kept the TNECD Broadband Grants page up to date with key dates, information, and materials, if applicable. A few examples of such activities are outlined below:

- TNECD shared concerns and sought guidance and input for Volume 1 of the Initial Proposal during events such as the April TNBA conference and the October TNBA/Kentucky Rural Broadband Association Joint Conference.
- TNECD conducted in-person regional workshops/listening sessions for stakeholders in August for Volume 1.
- TNECD conducted virtual workshops/listening sessions for stakeholders in October/Nov for Volume 2.
- TNECD held a low-cost/middle class affordability Focus Group in October.
- TNECD regularly updates their website to include all information and materials as they are made available.
- TNECD provides weekly progress reports to the Governor’s Office to ensure proper alignment.
- TNECD makes available upon request materials that are not otherwise available from the above methods to ISPs, government leaders, local organizations, and/or residents.
- TNECD updates its’ interactive State Broadband Accessibility Map at minimum, twice annually, to reflect the current landscape of broadband in the State and allows both interested stakeholders as well as the public access to a robust dataset that includes all state/federal/local commitments, CAIs by location, estimated access AND a provider locator tool.

Stakeholder engagement activities from TNECD will extend until deployment awards – historically, Tennessee

has encouraged post-award communication from subgrantees, and will continue to do so for the life of the BEAD program.

3.3 Multiple Awareness and Participation Mechanisms

TNECD has and will continue to utilize multiple communication channels to promote awareness and participation from various stakeholder and association groups. For example, the ECD.Broadband@tn.gov email address serves as a newsletter and information kiosk to all subscribed stakeholders, and the tn.gov/broadband website serves as a landing page for all current and upcoming infrastructure and broadband programs. Both tools steer stakeholders to relevant materials and the means to participate feedback opportunities for BEAD and DE programs. The website also offers navigation to relevant information such as ACP enrollment and statistics, listening sessions, webinar links and materials, active surveys, planning toolkits, grant information, and a link to the Tennessee Broadband Accessibility Map (TNBAM). TNECD continues to keep these resources up to date and has included links to a downloadable draft version of Volume 1 of the Initial Proposal and Digital Equity Plan for public comment and all other relevant information. Tennesseans can rely on this website, email address, and available resources to receive the latest BEAD updates and information on other broadband projects.

For public comment periods, TNECD promotes awareness by making announcements in similar fashions as mentioned above, as well as in newsletters, social media posts, by relaying information to partners to push through their networks. All interested parties can lodge public comments via multiple avenues as well. These avenues include an online form, during webinars, during in-person listening sessions, and via email. This creates an environment in which residents and stakeholders alike are encouraged to review the program developed by TNECD and provide as much or as little feedback on any or all sections. TNECD leans on the Digital Opportunity Task Force where necessary for any additional assistance with ensuring a broad reach of relevant information.

3.4 Transparency

TNECD remains committed to transparency, concise communication, and continuous engagement on planned, in progress, or concluded broadband projects. The Broadband Office regularly encourages concerns and questions to be presented so that all interested parties with similar inquiries can receive the same information and thank those who take the opportunity for clarity. In addition to the diverse stakeholder group engagement and awareness/participation mechanisms, TNECD publishes comprehensive reports to stakeholders on public comments received and their impact on planning and the final Initial Proposal.

3.5 Underrepresented Engagement

TNECD continues to engage with and collect relevant information from representatives of unserved and underserved communities, including historically underrepresented groups. These findings on connectivity and needs will complement those of the BEAD listening sessions and collected public comment. TNECD will continue to plan broadband deployment and digital equity initiatives together, incorporating similar promotional mechanisms and seeking input from the Digital Opportunity Task Force, interagency partners, and local and community organizations.

Subgrantee Selection (Requirement 8)

2.4.1 Plan to Competitively Award Subgrants

TNECD will conduct a fair, open, and competitive selection process for deployment activities that is extensively discussed throughout this section. TNECD will fully implement all Subgrantee Accountability Procedures mandated by NTIA, such as rules for disbursement, claw-back mechanisms, reporting, and monitoring. These topics are described in further detail in section 2.16.

TNECD will further develop the details of each section of the subgrantee selection process, but the structure of the overall process is described below.

- TNECD will publish a list of targeted areas and publish a finalized list of unserved and underserved locations, including community anchor institutions, that can be reviewed and accessed by all provider types.
- After the locations and/or areas are published, TNECD will accept letters of intent over a 60 calendar-day period. Letters of intent will include high level information about the applicant and their qualifications to construct broadband networks. Applicants must submit a letter of intent to be eligible to apply.
- Applicants will have to commit to serve 100% of locations in identified target areas. This will help ensure all eligible locations are reached through BEAD.
- As part of the application process, TNECD will collect basic information about each potential subgrantee to filter out unqualified applicants and confirm their financial capability.
- TNECD will post all applications and corresponding materials on the webpage as expeditiously as possible.
- The application review process will begin with an extensive team of objective, qualified personnel. TNECD will utilize two primary scoring teams: technical review and community support review. The technical review team will consist of a third-party contractor with technical and engineering experience. The community support review team will consist of economic development professionals with an abundance of experience with rural communities in Tennessee.
- Once a list of awards is finalized, the results will be publicly announced and posted on the webpage. Lastly, TNECD's internal grant committee will approve the list of awardees twice before contracting can begin.

Throughout this document, TNECD has established a fair, open, equitable, and competitive subgrantee selection process and will ensure that adequate safeguards are in place to prevent collusion, bias, conflicts of interest, arbitrary decisions, and other factors that could undermine the integrity of the process described above. Additionally, TNECD has existing mechanisms and resources in place to address issues related to fraud, waste, and abuse; internal controls; risk management; financial accounting and controls; and conflict of interests.

2.4.2 Prioritization and Scoring Process

Consistent with the BEAD NOFO requirements, TNECD will have two rubrics for scoring: Priority Broadband Projects, or those meeting symmetrical speeds, and Other Last-Mile Broadband Deployment Projects which are those that do not meet symmetrical speeds. This section will explain each of these rubrics, when they will be used, and the explanation behind each of the scoring criteria.

The Rubric for Priority Broadband Projects will be used when at least one fiber broadband project is submitted for an application area.

Priority Broadband Projects

The BEAD NOFO requires three primary criteria that must account for 75% of possible points in the scoring rubric. These required criteria are Minimal BEAD Program Outlay, Affordability, and Fair Labor Practices. Below outlines the questions that will make up each of these scoring criteria.

Minimal BEAD Program Outlay – 35 Possible Points

- **What is the proposed cost per passing?**

Points Possible: 7

Explanation: TNECD will request the total number of proposed passings in the grant area and calculate the cost per passing by dividing the project total, including match amount and grant request, by the number of proposed passings to calculate cost per passing.

TNECD will compare proposed cost per passing across all Priority Broadband Project applications in the designated application area (i.e., County Area 1). TNECD will award points based on the lowest cost per passing as follows, with the proposal with the lowest cost per passing (LCPP) receiving the maximum points for this criterion.

Scoring Criteria:

0 - More than 96% above LCPP

2 - 81-95% above LCPP

3 - 61-80% above LCPP

4 - 41-60% above LCPP

5 - 21-40% above LCPP

6 - 1-20% above LCPP

7 - Lowest Cost Per Passing (LCPP)

- **Is the business model reasonable for meeting all project milestones within the proposed budget?**

Points Possible: 7

Explanation: TNECD will request information from the applicant about their history in the broadband business and business model. TNECD will review the information to conclude whether the applicant's business model is reasonable to meet all project milestones within the proposed budget.

A "not supported" scoring application is one that has significant gaps in the entity's relevant experience and/or financial history and capabilities. Not enough information is provided by the applicant to decide on if their proposal is supported or major gaps exist in the business model and/or proposal. Projects not supported may also be those not in good standing with current state or federal grant projects.

A "supported but needs more development" scoring application would be one that has a business model that appears that it could meet requirements within budget and on time. However, more information would be helpful to decide on the applicant's history and experience compared to other applications. This could include more information needed on the entity's structure and business model, additional explanation for past grant experience, and more development needed for how the entity will meet the project milestones on time and

within the proposed budget.

An “average” scoring business model would be one who may have access in the broadband business and demonstrate that they can financially build out the proposed project, but there are some that their application could have been improved, including additional experience as an ISP, additional supplemental history, or documentation that demonstrates how the applicant will meet the goals on time and within budget. The applicant could have also included additional detail on their experience with broadband projects or grants should this apply.

A “clearly supported and accurate” scoring applicant is one that has experience in the broadband space and goes above and beyond the requested information and documentation to show their business model, experience in the business, and that they are in good standing with other state and/or federal broadband projects. Their application shows that they can meet all requirements within the budget that was proposed, without need for additional funding or time.

Scoring Criteria:

- 0 - Not supported
- 2 - Supported but needs more development
- 5 - Average - Supported but minor questions
- 7 - Clearly supported and accurate

- **How does the provider propose to serve eligible CAIs in the grant area?**

Points Possible: 7

Explanation: TNECD will request information from the applicant on whether they propose to serve eligible Community Anchor Institutions (CAIs) in the grant area. In accordance with the BEAD NOFO, the state must prioritize eligible broadband serviceable locations (BSLs), households and businesses, first. Although, this allows TNECD to assign additional points to applications that plan to pick up eligible CAIs along the way should funding be available. The scoring will allow for three scenarios:

The applicant does not propose to serve any eligible CAIs, meaning the applicant elects to not serve an CAIs in the grant area as a part of their application regardless of whether funding is available to serve these locations.

The applicant proposes to serve eligible CAIs if funding is available, meaning the applicant proposes to serve the CAIs in the grant area as a part of their application only if grant funding is available.

The applicant proposes to serve eligible CAIs regardless, meaning that if funding is not available, the applicant proposes to serve eligible CAIs with funding above the required match.

Scoring Criteria:

- 0 - No proposed CAIs
- 3 - CAIs will be connected if grant funding is available
- 7 - CAIs will be connected regardless (used with private funding if additional BEAD funding is not available)

- **Does the proposed budget capture all expenses necessary for the proposed network to meet all scope requirements?**

Points Possible: 7

Explanation: TNECD will request a budget and budget narrative from each applicant that outlines any necessary expenses. This criterion allows TNECD to review the budget and ensure that it does not have significant gaps or unnecessary expenses associated with the project. This adds an additional level of review to ensure that the proposed BEAD outlay and cost per passing for the project are justified and accurate.

An application scoring “does not outline all necessary expenses/significant questions” may lack necessary budget line items or justifiable explanations in the budget narrative. Estimates in the budget may appear significantly high or low compared to other applications without reasonable justification. In addition, significant gaps may be present that do not clearly support the cost estimates in the budget or the ability for the applicant to meet the project scope requirements.

An application scoring “minimal questions” would include no significant gaps in the budget or justification but may require minimal development on one or more budget line item to demonstrate a more accurate cost estimate. In addition, more detailed explanations may be needed for one or more budget line items.

An application scoring “outlines all necessary expenses with no questions” clearly demonstrates that the budget and justification accurately detail all major expenses and project categories with no significant gaps or information missing. All budget line items are provided with detailed justification and demonstrate why they are necessary to completing the project on time and within budget. These justify an accurate cost per passing estimate.

Scoring Criteria:

- 0 - Does not Outline All Necessary Expenses/ Significant Questions
- 5 - Minimal Questions
- 7 - Outlines all Necessary Expenses with No questions

- **Is the proposed match rate above the required 25%?**

Points Possible: 7

Explanation: TNECD will request information from the applicant on their proposed match rate as well as proof of funding for that proposed match rate.

TNECD will award additional points based on the percentage above the required match proposed for the application area.

Scoring Criteria:

- 0 - Meets Match Requirement of 25%
- 2 - 26-35% total Match
- 3 - 36-45% total Match
- 5 - 46-55% total Match
- 7 - More than 55% total Match

Affordability – 30 Possible Points

- **What is the customer cost per megabit as proposed in the application?**

Points Possible: 10

Explanation: TNECD will request information from the applicant on proposed pricing tiers. TNECD will review the 1G symmetrical package available to all subscribers (not just ACP eligible subscribers) and calculate price per megabit. TNECD will award points based on the cost per megabit proposed by the applicant.

Criteria:

- 0 - >\$1.25/mb
- 2 - \$.99 - \$1.24/mb
- 4 - \$.75 - \$.98/mb
- 6 - \$.50 - \$.74/mb
- 8 - \$.25 - \$.49/mb
- 10 - < \$.25/mb

- **What are the additional costs to consumers outside of the monthly subscription fee?**

Points Possible: 10

Explanation: TNECD will request information from the applicant about additional fees outside of the monthly subscription. This will include all fees associated with the internet package, including equipment rentals and fees associated with installation. Points will be awarded to the applicant based on the existence of fees requested by the applicant to consumers, with priority given to proposals that include no additional fees.

Criteria:

- 0 - Additional Fees along with Installation Costs and Equipment Costs
- 5 - Installation Cost OR Equipment Costs
- 10- No Additional Costs

- **Does the applicant propose to adopt any of the middle-class affordability strategies?**

Points Possible: 5

Explanation: TNECD will request information from the applicant on which, if any, of TNECD's proposed Middle-Class affordability strategies they will adopt or propose. These strategies are outlined within the Middle-Class Affordability Requirement. Points will be awarded for the number of strategies adopted.

Criteria:

- 0 - No strategies adopted or proposed
- 1 - 1 strategy adopted or proposed
- 2 - 2 strategies adopted or proposed
- 3 - 3 strategies adopted or proposed

5 - 4 or more Strategies adopted or proposed

- **How does the applicant propose to promote affordability to low-income households outside of offering ACP?**

Points Possible: 5

Explanation: TNECD will request information from applicants on a plan for how they promote affordability to low-income households outside of offering ACP. Points will be awarded based on the number of strategies proposed by the applicant.

Criteria:

0 - Plan covers no strategies for reaching low income

Plan Covers minimal strategies for reaching low income (1)

4 - Plan Covers moderate strategies for reaching low income (at least 2)

5 - Plan covers significant strategies (3-5) for reaching low income

3-

Fair Labor Practices – 10 Possible Points

- **Does the applicant certify that they will meet all Fair Labor Requirements included in the BEAD NOFO?**

Points Possible: 5

Explanation: TNECD will provide a statement of assurances with the application which will outline the BEAD NOFO requirements associated with Fair Labor. TNECD will award points for applicants that submit a signed copy of the Statement of Assurances document certifying their commitment to ensuring all fair labor requirements will be met.

Criteria:

0 -No

5 - Yes

- **Does the applicant have experience with Federal Fair Labor Requirements or commit to working with a professional grant administrator who has experience with federal fair labor requirements?**

Points Possible: 5

Explanation: TNECD will request information from the applicant on their history and experience with federal fair labor requirements and/or their commitment to working with a professional grant administrator who has experience with federal fair labor requirements. If the applicant is working with a professional grant administrator with this experience, they must include documentation outlining the individual or entity's history with federal fair labor requirements.

Criteria:

0 - No experience from provider or a professional grant administrator

5 - Experience with fair labor requirements and/or working with a professional grant administrator with

experience with federal labor requirements

Secondary Criteria (25 Points)

The BEAD NOFO also allows the state to develop secondary criteria, with one secondary criteria (Speed to Deployment) being required. Secondary criteria must total no more than 25% of the total scoring criteria, and no single secondary scoring criteria may be weighted of equal or greater value than any single primary scoring criteria. The secondary criteria are Speed to Deployment, Economic and Community Impact, Broadband Adoption in Low-Income and Middle-Class Households, and Community Support.

Speed to Deployment - 9 Possible Points

- **Does the applicant propose to complete the project prior to the required deployment timeline?**

Points Possible: 9

Explanation: TNECD will request information from the provider on their proposed deployment timeline and award points to applicants who propose to build out on a quicker timeline than required.

Criteria:

- 0 - On Time
- 2 - More than 3 Months Early
- 4 - More than 6 months Early
- 7 - More than 12 Months Early
- 9 - More than 18 Months Early

Economic and Community Impact - 6 Possible Points

- **Does the applicant include a local match from a unit of government?**

Points Possible: 3

Explanation: TNECD will request information from the applicant on if they will be including a local match from a unit of government. Documentation, including but not limited to a resolution or commitment letter, must be included. (The match can be a part of the required 25% or additional funding beyond the required 25%.)

Criteria:

- 0 - No
- 3 - Yes

- **Does the applicant demonstrate the ability to provide the workforce needed to complete the project during the proposed timeline and within the proposed budget?**

Points Possible: 3

Explanation: TNECD will request information from the provider about how they will source their workforce to complete the project on time and within budget.

A “No Demonstration” scoring application has significant gaps in planning for obtaining the labor and workforce to complete the project on time and within budget. Barriers or challenges have no identified strategies or

proposed solutions.

A “Minimal Demonstration” scoring application is one that provides an explanation for how the workforce will be sourced but lacks developed plans for how they will overcome any workforce barriers or challenges. Some gaps are present in the proposed workforce planning information.

A “Clearly Demonstrated” scoring application is one that provides an explanation for how the workforce will be sourced, identifies how the applicant will overcome any barriers or challenges in obtaining labor, and demonstrates a plan with no clear gaps.

Criteria:

- 0 - No Demonstration
- 2 - Minimal Demonstration (some questions)
- 3 - Clearly Demonstrated (thorough workforce plan)

Broadband Adoption in Low-Income and Middle-Class Households – 6 Possible Points

- **How does the applicant plan to promote the ACP Program and their low-cost affordability plan(s) for ACP eligible households?**

Points Possible: 3

Explanation: TNECD will request information from the applicant on strategies to promote ACP and low-cost affordability plan(s) for ACP eligibility households. Applicants may propose strategies that increase ACP adoption or broadband adoption for ACP eligible households. Points will be awarded based on the content of their proposed strategies in their broadband adoption plan and the number of proposed strategies.

Criteria:

- 0 - Plan covers no strategies for ACP households
- 1- Plan Covers minimal strategies for reaching ACP Households (1)
- 2 - Plan Covers moderate strategies for reaching ACP Households (at least 2)
- 3 - Plan covers significant strategies (3-5) for reaching ACP Households

- **How does the applicant propose to promote broadband adoption in the application area to low- and middle-income households?**

Points Possible: 3

Explanation: TNECD will request information from applicants about proposed strategies to promote broadband adoption to low- and middle-income households. Points will be awarded based on the number of strategies proposed.

Criteria:

- 0 - Minimal to no strategies (0-1 strategies proposed)
- 2 - Moderate Strategies (2 strategies proposed)
- 3 - Significant Strategies (3-5 strategies proposed)

Community Support – 4 Possible Points

- **Does the applicant include supplemental support from the community?**

Points Possible: 4

Explanation: TNECD will request community support letters as a part of an applicant’s proposal. These can include letters from members of the community, units of government, community organizations, or community anchor institutions. Points will be awarded for the volume of community support included with the application.

Criteria:

- 0 - No Support
- 2 - Minimal Support (2-3 partners or community members)
- 3 - Moderate Support (3-6 partners or community members)
- 4 - Significant Support (More than 6 partners or community members)

Other Last-Mile Broadband Projects

If there is not a fiber application submitted for a broadband project, no applications that meet the minimum eligibility requirements, or no project submitted that is under the state’s calculated extremely high-cost threshold (EHCT), the Other Last-Mile Broadband Deployment Projects rubric will be used to score the remaining applications.

The BEAD NOFO requires three primary criteria that must account for 75% of possible points in the scoring rubric. These required criteria are Minimal BEAD Program Outlay, Affordability, and Fair Labor Practices. Below outlines the questions that will make up each of these scoring criteria.

Minimal BEAD Program Outlay – 39 Possible Points

- **What is the proposed cost per passing?**

Points Possible: 9

Explanation: TNECD will request the total number of proposed passings in the grant area and calculate the cost per passing by dividing the project total, including match amount and grant request, by the number of proposed passings to calculate cost per passing.

TNECD will compare proposed cost per passing across all Priority Broadband Project applications in the designated application area (i.e., County Area 1). TNECD will award points based on the lowest cost per passing as follows, with the proposal with the lowest cost per passing (LCPP) receiving the maximum points for this criterion.

Scoring Criteria:

- 0 - More than 96% above LCPP
- 1 - 81-95% above LCPP
- 2 - 61-80% above LCPP
- 3 - 41-60% above LCPP
- 5 - 21-40% above LCPP
- 7 - 1-20% above LCPP
- 9 - Lowest Cost Per Passing (LCPP)

- **Is the business model reasonable for meeting all project milestones within the proposed budget?**

Points Possible: 7

Explanation: TNECD will request information from the applicant about their history in the broadband business and business model. TNECD will review the information to conclude whether the applicant's business model is reasonable to meet all project milestones within the proposed budget.

A "Not supported" scoring application is one that has significant gaps in the entity's relevant experience and/or financial history and capabilities. Not enough information is provided by the applicant to decide on if their proposal is supported or major gaps exist in the business model and/or proposal.

A "supported but needs more development" scoring application would be one that has a business model that appears that it could meet requirements within budget and on time. However, more information would be helpful to decide on the applicant's history and experience compared to other applications. This could include more information needed on the entity's structure and business model, additional explanation for past grant experience, and more development needed for how the entity will meet the project milestones on time and within the proposed budget.

An "average" scoring business model would be one who may have access in the broadband business and demonstrate that they can financially build out the proposed project, but there are some that their application could have been improved, including additional experience as an ISP, additional supplemental history or documentation that demonstrates how the applicant will meet the goals on time and within budget. The applicant could have also included additional detail on their experience with broadband projects or grants should this apply.

A "clearly supported and accurate" scoring applicant is one that has experience in the broadband space and goes above and beyond the requested information and documentation to show their business model, experience in the business, and that they are in good standing with other state and/or federal broadband projects. Their application shows that they can meet all requirements within the budget that was proposed, without need for additional funding or time.

Scoring Criteria:

- 0 - Not supported
- 2 - Supported but needs more development
- 5 - Average - Supported but minor questions
- 7 - Clearly supported and accurate

- **How does the provider propose to serve eligible CAIs in the grant area?**

Points Possible: 8

Explanation: TNECD will request information from the applicant on whether they propose to serve eligible Community Anchor Institutions (CAIs) in the grant area. In accordance with the BEAD NOFO, the state must prioritize eligible broadband serviceable locations (BSLs), households and businesses, first. Although, this allows TNECD to assign additional points to applications that plan to pick up eligible CAIs along the way should funding

be available. The scoring will allow for three scenarios:

The applicant does not propose to serve any eligible CAIs, meaning the applicant elects to not serve an CAIs in the grant area as a part of their application regardless of whether funding is available to serve these locations.

The applicant proposes to serve eligible CAIs if funding is available, meaning the applicant proposes to serve the CAIs in the grant area as a part of their application only if grant funding is available.

The applicant proposes to serve eligible CAIs regardless, meaning that if funding is not available, the applicant proposes to serve eligible CAIs with funding above the match.

Scoring Criteria:

0 - No proposed CAIs

5- CAIs will be connected if grant funding is available

8- CAIs will be connected regardless (used with private funding above the match if additional BEAD funding is not available)

- **Does the proposed budget capture all expenses necessary for the proposed network to meet all scope requirements?**

Points Possible: 6

Explanation: TNECD will request a budget and budget narrative from each applicant that outlines any necessary expenses. This criterion allows TNECD to review the budget and ensure that it does not have significant gaps or unnecessary expenses associated with the project. This adds an additional level of review to ensure that the proposed BEAD outlay and cost per passing for the project are justified and accurate.

An application scoring “does not outline all necessary expenses/significant questions” may lack necessary budget line items or justifiable explanations in the budget narrative. Estimates in the budget may appear significantly high or low compared to other applications without reasonable justification. In addition, significant gaps may be present that do not clearly support the cost estimates in the budget or the ability for the applicant to meet the project scope requirements.

An application scoring “minimal questions” would include no significant gaps in the budget or justification but may require minimal development on one or more budget line item to demonstrate a more accurate cost estimate. In addition, more detailed explanations may be needed for one or more budget line items.

An application scoring “outlines all necessary expenses with no questions” clearly demonstrates that the budget and justification accurately detail all major expenses and project categories with no significant gaps or information missing. All budget line items are provided detailed justification and demonstrate why they are necessary to completing the project on time and within budget. These justify an accurate cost per passing estimate.

Scoring Criteria:

0 - Does not Outline All Necessary Expenses/ Significant Questions

5 - Minimal Questions

6 - Outlines all Necessary Expenses with No questions

- **Is the proposed match rate above the required 25%?**

Points Possible: 9

Explanation: TNECD will request information from the applicant on their proposed match rate as well as proof of funding for that proposed match rate.

TNECD will award additional points based on the percentage above the required match proposed for the application area.

Scoring Criteria:

- 0 - Meets Match Requirement of 25%
- 2 - 26-35% total Match
- 3 - 36-45% total Match
- 5 - 46-55% total Match
- 7 - More than 55% total Match

Affordability – 26 Possible Points

- **What is the customer cost per megabit as proposed in the application?**

Points Possible: 7

Explanation: TNECD will request information from the applicant on proposed pricing tiers. TNECD will review the 1G symmetrical package available to all subscribers (not just ACP eligible subscribers) and calculate price per megabit. TNECD will award points based on the cost per megabit proposed by the applicant.

Criteria:

- 0 - >\$1.25/mb
- 1 - \$.99 - \$1.24/mb
- 2 - \$.75 - \$.98/mb
- 3 - \$.50 - \$.74/mb
- 5 - \$.25 - \$.49/mb
- 7 - < \$.25/mb

- **What are the additional costs to consumers outside of the monthly subscription fee?**

Points Possible: 7

Explanation: TNECD will request information from the applicant about additional fees outside of the monthly subscription. This will include all fees associated with the internet package, including equipment rentals and fees associated with installation. Points will be awarded to the applicant based on the existence of fees requested by the applicant to consumers, with priority given to proposals that include no additional fees.

Criteria:

- 0 - Additional Fees along with Installation Costs and Equipment Costs
- 4 - Installation Cost OR Equipment Costs
- 7 - No Additional Costs

- **Does the applicant propose to adopt any of the middle-class affordability strategies?**

Points Possible: 6

Explanation: TNECD will request information from the applicant on which, if any, of TNECD's proposed Middle-Class affordability strategies they will adopt or propose. These strategies are outlined within the Middle-Class Affordability Requirement. Points will be awarded for the number of strategies adopted.

Criteria:

- 0 - No strategies adopted or proposed
- 1 - 1 strategy adopted or proposed
- 2 - 2 strategies adopted or proposed
- 3 - 3 strategies adopted or proposed
- 6 - 4 or more Strategies adopted or proposed

- **How does the applicant propose to promote affordability to low-income households outside of offering ACP?**

Points Possible: 6

Explanation: TNECD will request information from applicants on a plan for how they promote affordability to low-income households outside of offering ACP. Points will be awarded based on the number of strategies proposed by the applicant.

Criteria:

- 0 - Plan covers no strategies for reaching low income
- 3 - Plan Covers minimal strategies for reaching low income (1)
- 5 - Plan Covers moderate strategies for reaching low income (at least 2)
- 6 - Plan covers significant strategies (3-5) for reaching low income

Fair Labor Practices – 10 Possible Points

- **Does the applicant certify that they will meet all Fair Labor Requirements included in the BEAD NOFO?**

Points Possible: 5

Explanation: TNECD will provide a statement of assurances with the application which will outline the BEAD NOFO requirements associated with Fair Labor. TNECD will award points for applicants that submit a signed copy of the Statement of Assurances document certifying their commitment to ensuring all fair labor requirements will be met.

Criteria:

- 0 - No
- 5 - Yes

- **Does the applicant have experience with Federal Fair Labor Requirements or commit to working with a professional grant administrator who has experience with federal fair labor requirements?**

Points Possible: 5

Explanation: TNECD will request information from the applicant on their history and experience with federal fair labor requirements and/or their commitment to working with a professional grant administrator who has experience with federal fair labor requirements. If the applicant is working with a professional grant administrator with this experience, they must include documentation outlining the individual or entity's history with federal fair labor requirements.

Criteria:

0 - No experience from provider or a professional grant administrator

5 - Experience with fair labor requirements and/or working with a professional grant administrator with experience with federal labor requirements

Secondary Criteria (25 Points)

The BEAD NOFO also allows the state to develop secondary criteria, with two secondary criteria (Speed to Deployment and Technical Capabilities) being required. Secondary criteria must total no more than 25% of the total scoring criteria, and no single secondary scoring criteria may be weighted of equal or greater value than any single primary scoring criteria. The secondary criteria are Speed to Deployment, Economic and Community Impact, Broadband Adoption in Low-Income, Middle-Class Households, Community Support, and Technical Capabilities.

Speed to Deployment – 9 Possible Points

- **Does the applicant propose to complete the project prior to the required deployment timeline?**

Points Possible: 4

Explanation: TNECD will request information from the provider on their proposed deployment timeline and award points to applicants who propose to build out on a quicker timeline than required.

Criteria:

0- On Time

1 - More than 3 Months Early

2 - More than 6 months Early

3 - More than 12 Months Early

4 - More than 18 Months Early

Economic and Community Impact – 5 Possible Points

- **Does the applicant include a local match from a unit of government?**

Points Possible: 2

Explanation: TNECD will request information from the applicant on if they will be including a local match from a

unit of government. Documentation, including but not limited to a resolution or commitment letter, must be included. Additional points will be awarded to proposals that include a match from a local government.

Criteria:

- 0 - No
- 2 - Yes

- **Does the applicant demonstrate the ability to provide the workforce needed to complete the project during the proposed timeline and within the proposed budget?**

Points Possible: 3

Explanation: TNECD will request information from the provider about how they will source their workforce to complete the project on time and within budget.

A “No Demonstration” scoring application has significant gaps in planning for obtaining the labor and workforce to complete the project on time and within budget. Barriers or challenges have no identified strategies or proposed solutions.

A “Minimal Demonstration” scoring application is one that provides an explanation for how the workforce will be sourced but lacks developed plans for how they will overcome any workforce barriers or challenges. Some gaps are present in the proposed workforce planning information.

A “Clearly Demonstrated” scoring application is one that provides an explanation for how the workforce will be sourced, identifies how the applicant will overcome any barriers or challenges in obtaining labor, and demonstrates a plan with no clear gaps.

Criteria:

- 0 - No Demonstration
- 2 - Minimal Demonstration (some questions)
- 3 - Clearly Demonstrated (thorough workforce plan)

Broadband Adoption in Low-Income and Middle-Class Households – 6 Possible Points

- **How does the applicant plan to promote the ACP Program and their low-cost affordability plan(s) for ACP eligible households?**

Points Possible: 3

Explanation: TNECD will request information from the applicant on strategies to promote ACP and low-cost affordability plan(s) for ACP eligibility households. Applicants may propose strategies that increase ACP adoption or broadband adoption for ACP eligible households. Points will be awarded based on the content of their proposed strategies in their broadband adoption plan and the number of proposed strategies.

Criteria:

- 0 - Plan covers no strategies for ACP households
- 1 - Plan Covers minimal strategies for reaching ACP Households (1)
- 2 - Plan Covers moderate strategies for reaching ACP Households (at least 2)

3 - Plan covers significant strategies (3-5) for reaching ACP Households

- **How does the applicant propose to promote broadband adoption in the application area to low- and middle-income households?**

Points Possible: 3

Explanation: TNECD will request information from applicants about proposed strategies to promote broadband adoption to low- and middle-income households. Points will be awarded based on the number of strategies proposed.

Criteria:

- 0-Minimal to no strategies (0-1 strategies proposed)
- 2-Moderate Strategies (2 strategies proposed)
- 3-Significant Strategies (3-5 strategies proposed)

Community Support - 2 Possible Points

- **Does the applicant include supplemental support from the community?**

Points Possible: 2

Explanation: TNECD will request community support letters as a part of an applicant's proposal. These can include letters from members of the community, units of government, community organizations, or community anchor institutions. Points will be awarded for the volume of community support included with the application.

Criteria:

- 0 - No Support
- 2 - Minimal Support (2-3 partners or community members)

Technical Capabilities - 8 Possible Points

- **Is the proposed speed scalable to meet the community's future speed and technology needs with minimal latency?**

Points Possible: 4

Explanation: TNECD will request information from the applicant on the proposed technology for the application area. Applications must provide a justification for why the proposed technology meets the future speed needs of the community in which it proposes to serve and why this technology is the most cost effective. Points will be awarded to applications that propose higher speeds and low latency.

Criteria:

- 0 - Speeds not scalable to 1G where practicable/Experience significant latency issues
- 4 - Scalable to 1G with minimal to no latency issues

- **What is the proposed speed for each served passing?**

Points Possible: 4

Explanation: TNECD will request information from the applicant on the proposed technology, including a signed certification form from a Professional Engineer (PE) licensed in the state of Tennessee certifying that the proposed technology can meet the proposed speed and latency standards outlined in the application. Points will be awarded based on the speed capabilities of the proposed technology.

Criteria:

- 1 - 100/20 max
- 2 - >100 but < 250
- 3 - >250 but < than 1gb -
- 4 - > 1gb

2.4.3 Prioritization of Unserved Service Projects

TNECD will prioritize the following areas to ensure that 100% of Tennesseans are served with high-speed internet:

Areas lacking 25/3mbps

TNECD believes that it will receive enough funding to connect all un- and underserved BSLs and will prioritize connecting them s to ensure that 100% of Tennesseans are served with high-speed internet.

Areas lacking 25/3mbps

TNECD will prioritize BSLs lacking 25/3mbps by accounting for these locations first. This allows TNECD to ensure that the most unserved areas in Tennessee are accounted for and will be the initial focus.

Areas Lacking 100/20mbps

Next, TNECD will prioritize BSLs lacking 100/20 by ensuring these locations, including those in high-cost areas, are accounted for. This prioritization ensures that not only basic broadband access, but also high-speed broadband access is extended to as many areas as possible.

Community Anchor Institutions Lacking 1Gpbs.

Once the needs of businesses and households have been met, TNECD will shift its focus to Community Anchor Institutions (CAIs). Funding will be directed towards improving broadband access for these institutions.

By following this prioritization order, TNECD ensures a strategic and comprehensive approach to broadband expansion, first addressing the most underserved and unserved areas with low-speed internet access and progressively extending broadband coverage to bring higher-speeds to businesses, households, and essential community anchor institutions.

If possible, TNECD plans to account for all three categories in the same round of funding. However, no funding will be allocated to connect CAIs until all BSLs lacking 100/20 and 25/3 are accounted for to ensure 100% state coverage of households and businesses. Once those are accounted for, TNECD will move forward with awarding any remaining funding to connect eligible CAIs that lack 1G. Following CAIs being connected, TNECD will move forward with non-deployment activities to bolster internet adoption statewide.

2.4.4 Prioritization of Non-Deployment Projects

This section is not applicable.

2.4.5 Subgrantee EHP and BABA Requirements

EHP and BABA Requirements

TNECD will communicate requirements related to both Environmental and Historic Preservation (EHP) and the Build America Buy American Act (BABA) to all prospective subgrantees prior to the subgrantee selection process through webinars, in-person meetings, and publication of the requirements in compliance guidance posted to TNECD's website. In addition, TNECD will develop subgrantee compliance materials, which shall include guidance for subgrantees based on the BEAD NOFO and referencing underlying regulations such as the Federal Uniform Guidance for federal awards (2 CFR 200). These compliance materials will be published on TNECD's broadband website for easy reference. TNECD shall also develop a series of questions as part of the application by which it will evaluate an applicant's plan for compliance with applicable environmental laws and the BABA requirements.

Environmental and Historic Preservation (EHP)

TNECD will include in its application portal a request that the applicant describe how it will comply with all applicable federal and state environmental laws. In addition, TNECD will communicate to the applicant that it will be expected to complete an environmental questionnaire during post-award that will be included in the grant agreement materials. Through its administration of other federal grants, TNECD is familiar with environmental review requirements. TNECD plans to utilize as a gating mechanism, this agreement to comply and complete post award materials for all applicants. Should an eligible subgrantee select "no" to either agreement, the application process will end.

In accordance with procedures established by NTIA, TNECD will solicit information from applicants regarding their plan for complying with all applicable requirements of the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). Further, TNECD will communicate to all applicants, in published compliance materials, and emphasize the necessity that subgrantees obtain all applicable Federal, State, and local government permits and approvals needed for the proposed project. Additionally, TNECD will further communicate to all prospective subgrantees the importance that both planned projects and activities in which grant funding is used be designed to minimize adverse environmental impacts.

Additionally, TNECD will require potential subgrantees, as part of the grant agreement, to complete an environmental law applicability checklist with questions regarding the applicability of various environmental laws. These documents are accompanying exhibits to TNECD's grant agreement with each subgrantee. Submission and TNECD approval of the environmental checklist among other items mentioned will be a mandatory precondition to proceeding as part of TNECD's grant administration process.

Within the grant agreement itself, TNECD shall incorporate language regarding Environmental and Historic Preservation, in particular the grant agreement shall specify the obligations of subgrantees to complete and return to TNECD the environmental exhibit prior to TNECD moving forward on any projects. The grant agreement with TNECD will additionally contain provisions detailing compliance including but not limited to the following:

NEPA, NHPA, Clean Water Act, TN Pesticide Regulations, TN 811/Before you Dig, any other applicable State or Federal regulations or compliance materials.

As part of the grant agreement, TNECD shall gate any construction activities until the subgrantee and/or its contractors/subcontractors have submitted all applicable permits and clearances to TNECD, and they have been

reviewed for completeness. TNECD shall also note in its grant agreement with subgrantees that this requirement shall apply to all parties in the development process, including public or non-profit subgrantees and any of their contractors.

TNECD shall further require subgrantees to provide TNECD with all available environmental information about their projects as well as any information that TNECD may request in connection with environmental reviews.

TNECD shall require subgrantees to advise TNECD of any proposed changes in subgrantees project scope or changes in environmental conditions as well as changes in the nature, extent, magnitude, scope, or location of projects, the addition of new activities not anticipated in the original scope of projects; the selection of an alternative not in the original application or environmental review; or new circumstances or environmental conditions which may affect the Project or have bearing on its impact, such as concealed or unexpected conditions discovered during the implementation of the Project or activity.

Regarding NEPA compliance, TNECD will communicate to prospective subgrantees that they must cooperate with any TNECD information requests related to projects which will involve construction and/or ground disturbing activities. TNECD, through materials provided to prospective subgrantees, will inform prospective subgrantees that following the award, they must obtain all necessary federal, state, and local governmental permits and approvals necessary for the proposed work to be conducted.

Build America, Buy America Act (BABA)

TNECD will include in its application portal a request that the applicant describe how it will comply with all applicable BABA requirements during construction and implementation. In addition, TNECD will ensure the applicant is aware that it will be expected to complete a post-award attestation of BABA compliance that will be included in the grant agreement materials. TNECD plans to utilize as a gating mechanism, this agreement to comply and complete post award materials for all applicants. Should an eligible subgrantee select “no” to either agreement, the application process will end.

Regarding BABA compliance, in its outreach efforts and materials provided to prospective subgrantees, TNECD shall emphasize the following requirements:

- **Iron and Steel Products:** All iron and steel products utilized by the subgrantee or any contractors/subcontractors in its proposed project have undergone all manufacturing processes, from smelting to product line, in the United States unless a waiver is issued.
- **Manufactured Products:** All manufactured products, including fiber optic cables used in BEAD funded projects, were (a) manufactured in the United States and that (b) the manufactured products contain U.S. components comprising greater than 55% of the total cost of all components.
- **Construction Materials:** For construction materials, the subgrantee and its contractors must certify that construction materials, including but not limited to, non-ferrous metals; plastic and polymer-based products (including those used in fiber optic cables); glass, lumber; and drywall used by the subgrantee, and any contractors and subcontractors have undergone all manufacturing processes domestically.
- **Regarding Waiver:** While the subgrantee and all contractors and subcontractors of the subgrantee may waive the 55% cost requirement for all electronics equipment used in fiber optic technologies, (as proposed by NTIA and the Dept. of Commerce), the subgrantee will be required to certify that it and any contractors or subcontractors understand and will comply with the BABA 55% cost requirement for the following non-electronic equipment used in fiber optic technologies:
 - Optical Line Terminals (OLTs) and Remote Optical Line Terminals
 - OLT Line Cards
 - Optical Connections/Pluggables

- Optical Network Terminals and Optical Network Units

Further, TNECD shall include language relating to subgrantee requirements relative to BABA in a separate section within the grant agreement. This BABA section shall outline the relevant requirements as applicable to broadband projects and outline the limited scenarios/conditions under which a waiver of BABA requirements may be obtained.

2.4.6 Grant Area Selection

Tennessee is comprised of 95 counties across three grand divisions (West, Middle, East), where 52% of total land mass is forested, roughly 2.2% accounts for bodies of water, and almost 100% of the land mass contains hills or mountainous terrain. TNECD has conducted extensive research to identify the needs and access for all regions and counties, and through numerous listening sessions and stakeholder engagement sessions, have a much more granular understanding of the community-specific needs in each area.

After completion of current infrastructure programs, TNECD will account for 100% availability within the counties of Polk, Hardin, and Wayne, and fund crucial middle-mile infrastructure ahead of BEAD. The remaining 92 counties will be analyzed based on presence of existing infrastructure, existing enforceable commitments at the State and Federal level, the Appalachian Regional Commission County Designation (At Risk, Distressed, Transitional), historical lack of funding, geographical and geopolitical boundaries, and NTIA-defined high-cost areas.

TNECD will compile a comprehensive FCC Broadband Serviceable Location (BSL) list on a per-county basis and will divide each county into a maximum of three grant application areas, each requiring a minimum 25% match. These defined application areas will be “all-or-nothing”, in that the competitive applicant commits to serving all BEAD-eligible BSLs within each defined area. Any eligible CAIs will be identified and grouped, as applicable, into these grant areas. TNECD will make this file available prior to applications.

TNECD will define separate, incentivized application areas for NTIA-identified High-Cost areas – these application areas will not require a match.

TNECD plans to run a public comment period that allows potential applicants to share additional information or concern, show their support, or otherwise comment on potential subgrantee application areas and their designed boundaries. This will ensure the finalized grant areas that TNECD selects make sense for internet service providers and should remove the need to de-conflict overlapping applications. This supplemental process also lends to the State’s transparency plan for adjudication and the best practices for inclusion and participation of the local public and/or civilian stakeholders.

Awarding areas and Deconflicting Methodology

In defining all grant areas on an all-or-nothing basis, TNECD has eliminated any traditional overlapping of application areas/need for deconflicting of overlap, since all potential subgrantees will be competitively proposing projects for the same defined areas and BSLs. In areas where multiple applications are lodged, TNECD will award to the applicant who scored the highest for that area. All applications will be reviewed without bias and adjudicated and awarded solely on the prevailing applicant’s overall score.

2.4.7 No Proposal Strategy/Supplemental Funding Rounds

While Tennessee plans to run an open, fair, and competitive grant process, it is possible that some defined grant areas will not receive a service proposal, hindering Tennessee’s ability to reach all un- and underserved BSLs. If this situation occurs, TNECD has devised multiple mechanisms to ensure all target areas receive

service, outlined below, and detailed in section 2.4.10 of this document as they relate to the Extremely High Cost Per Location Threshold.

Publicly Post Grant Application Areas with No Proposals

TNECD will publicly post all grant areas that did not receive a proposal, as well as share them with all key internet service provider stakeholder groups. This will help ensure all providers know about the opportunity to partner with TNECD to build out these areas. TNECD will engage with any provider that shows interest and has the technical capabilities required by the BEAD NOFO to complete the project. (For more details about this engagement, see the next section.)

Engage with Local Provider(s) that meet Technical Capabilities

In addition to posting the grant areas with no proposals, TNECD will review the current landscape of those areas to determine the most viable or series of viable providers to begin more targeted engagement. Through this engagement, TNECD will offer to host a meeting with potential applicants to explore their interest and involvement in a secondary funding round. Alternative considerations will be made in areas where no provider currently has a substantial footprint, to locate and engage with the closest or most relevant providers.

Consider Alternative Technologies

If no proposals are received for an area, or no reliable technology can reasonably be deployed in a defined grant area, TNECD will consider alternative technology applications that meet the BEAD NOFO speed requirements. All technical capabilities will be considered to ensure that 100% of un- and underserved locations receive access to service. Should TNECD choose to award a non-symmetrical technology, any other applications in the defined area will be declines ant notified of the State's decision.

Secondary Funding Round/Lowering the Extremely High-Cost Threshold

In the event any or all the above options are not viable or able to be considered, TNECD will re-evaluate the application areas that did not receive proposals and consider a path forward to a secondary funding round. If a particular area did not receive any viable applications other than those that exceeded the Extremely High Cost per location Threshold, and alternative technologies cannot be considered TNECD will approach lowering the EHCT in these areas before moving into a secondary round of funding. TNECD may further sub-divide application areas to make them more approachable or attainable, in the case where a natural geographic boundary such as a river or mountain can be leveraged in that decision. TNECD will post maps of these application areas on its website and immediately engage with potential applicants by way of email/newsletter, webinar, or phone correspondence to ensure interested parties have ample time to digest the new information on a smaller scale and that strong, viable competitive applications can then be received for the aforementioned areas.

2.4.8 Tribal Government Consent

TNECD does not have any projects proposed on Tribal Lands. However, TNECD engaged in a formal tribal consultation with the Mississippi Band of Choctaw Indians during the planning process regarding the track of Choctaw land in Henning, Tennessee. TNECD confirmed that the tribal community in Henning does have internet access. In the discussion with the tribe, TNECD was made aware of broadband affordability, adoption, digital skills, and speed challenges facing the tribal community in Henning. TNECD plans to continue engaging

with the tribe to ensure that tribal members in Tennessee have the resources they need to both access and adopt to broadband service and technology.

2.4.9 Extremely High Cost per Location Threshold

Tennessee will use a blend of tools and data to determine the Extremely High Cost Per Location Threshold (EHCPLT) once the application process has concluded. The two primary sources will be (1) the Eligible Entity Planning Tool provided by NTIA and (2) the initial round of proposals submitted for Tennessee's BEAD funding. The Eligible Entity Planning Tool provided by NTIA will be a key component of initial threshold determination.

Provider proposals submitted through the TN Broadband Accessibility Grant will feed into a location-based cost analysis. This analysis will examine costs of previous broadband projects and then factor in population density, existing industries, proximity to the closest route, demographic information such as household size, age, and education. Results of this analysis will be compared with the estimates from the NTIA Planning Tool to appropriately set the EHC threshold.

In all cases, the State's primary goal is to optimize funding so that all BEAD eligible locations are connected.

2.4.10 EHCPT Utilization Plan

In accordance with the BEAD NOFO, TNECD will create an Extremely High Cost Per Location Threshold (EHCT) which will help the state make funding decisions to ensure minimal BEAD outlay and cost-effective broadband deployment.

TNECD will establish the EHCT once all applications are submitted to account for the economic factors and cost of labor and infrastructure build out at the time of application.

Proposals Exceeding the EHCT

Should TNECD receive an application that requires a BEAD subsidy that exceeds the EHCT, TNECD will look to see if any viable applications have been proposed for the same grant area that are (1) less costly than the EHCT, (2) considered Priority Broadband Projects by NTIA, and (3) meet symmetrical speeds and all other technical NOFO requirements.

- If more than one application that meets these criteria is available, the highest scoring option, as determined by the TNECD grant rubric, will be selected, and all others will be rejected.
- If only one application that meets these criteria is available, it will be selected as the grant recipient, and the application exceeding the EHCT will be rejected.
- If an application that meets these criteria is not available, TNECD will take one or more of the following steps:
 - **Engage with the Applicant(s) that meet technical capabilities but are over the EHCT:** TNECD plans to engage with applicants who applied but did not come in under the threshold by responding to their application detailing the reasoning behind their application being declined or on hold as we review alternate applications. This will include written feedback on their application regarding the EHCT and next steps in our review process. TNECD will also offer to have a meeting to discuss if the applicant has further questions.

- **Consider Alternative Technologies:** If no reliable technology can be provided in a grant area, an alternative technology application that meets the BEAD NOFO speed requirements and all technical capabilities will be considered to ensure that 100 percent of un- and underserved locations are served. Should TNECD choose to award a non-symmetrical technology, other applications in the application area will be declined and notified of the state’s decision.
- **Return Priority Broadband Projects for Revisions:** If TNECD deems that no proposed Other Last Mile Broadband Deployment Project meets the needs of the community in which it is applying for, due to issues of speed, latency, technical or financial capability, TNECD will go back to the highest scoring Priority Broadband Project applicant and request a revised proposal under the EHCT. Should the applicant wish to decline revision, TNECD will go down the list of applicants in order by score to ask for proposed revisions. Should no applicant wish to apply, TNECD will put the location out for a new application round and lower the EHCT.

Fund the Proposal at a Subsidy that Exceeds the EHCT: TNECD will review and consider other technology types should the proposed priority broadband project(s) exceed the EHCT. However, should there be no other viable proposals from other last mile broadband projects that TNECD deems meet the speed needs of the application area, TNECD may choose to fund the proposal at a subsidy that exceeds the EHCT as long as 100% coverage can be achieved in the state.

2.4.11 Financial Capabilities Qualifications

Available Funds Certification

TNECD will require potential grantees to certify by an authorized officer and be approved by their governing board:

- Is qualified to meet the obligations associated with a Project
- Has funds available for all project costs that exceed the amount of the grant
- Will comply with BEAD Program requirements including service milestones

To submit a grant application, potential subgrantees will be required to submit a minimum of two financial assurance documents to prove a capability to fund the proposed project. Acceptable financial documents include: a letter of credit from a financial institution at which the applicant banks, audited financials dated in the last two years, and/or bank statements. These documents are in addition to the letter of credit requirement, which is discussed further in the next section.

Additionally, TNECD will require applicants to complete a budget feasibility estimation, including operational costs as well as project costs, and a construction timeline estimate. An applicant’s budget estimation must include a budget proposal that requires details of the costs under each budget line item, as well as a budget narrative justifying the estimation of costs.

TNECD will retain qualified personnel to review and score all relevant financial documents to ensure comprehensive review of financial capabilities of all potential subgrantees. Additionally, TNECD only disburses funding to subgrantees who present vendor invoices and proof of payment for completed work. The reimbursement-based invoicing process is communicated to all applicants, which helps ensure each applicant has sufficient funds to cover all eligible costs upfront.

Letter of Credit

Like the model letter of credit established with the Rural Digital Opportunity Fund (RDOF), TNECD will require applicants to submit a letter from an eligible bank (see 47 C.F.R. § 54.804(c)(2)) in which the bank commits to issuing an irrevocable letter of credit to the potential subgrantee. The letter must include the dollar amount of the letter of credit and the issuing bank's agreement to adhere to BEAD's model letter of credit terms and conditions.

Before executing any subgrantee agreements, each applicant must obtain an irrevocable standby letter of credit, which TNECD deems acceptable, and amounts to no less than 25% of the subaward amount. At this point, the potential subgrantee will be required to obtain an official letter of credit. At the point of application, the potential subgrantee will only be required to submit a letter detailing the bank's commitment to issue an official letter of credit.

An opinion letter from legal counsel must be included with the letter of credit stating, subject only to customary assumptions, limitations, and qualifications, that in a proceeding under Title 11 of the United States Code, 11 U.S.C. § 101 et seq. (the "Bankruptcy Code"), the bankruptcy court would not treat the letter of credit or proceeds of the letter of credit as property of the winning subgrantee's bankruptcy estate under Section 541 of the Bankruptcy Code.

In response to numerous concerns shared by internet service providers in Tennessee, TNECD is also willing to issue waivers to the BEAD Program letter of credit requirement to potential subgrantees that may be unable to obtain a qualifying letter of credit as described above. Acceptable modifications to this requirement include:

- **Allow Credit Union to Issue LOCs:** The NOFO requires subgrantees to obtain a LOC from a U.S. bank with a safety rating issued by Weiss of B- or better. The waiver permits subgrantees to fulfill this requirement by utilizing any United States credit union that is insured by the National Credit Union Administration and that has a credit union safety rating issued by Weiss of B- or better.
- **Allow use of Performance Bonds:** The waiver permits subgrantees to provide a performance bond equal to 100% of the BEAD subaward amount in lieu of a LOC, provided that the bond issued by a company holding a certificate of authority as an acceptable surety on federal bonds as identified in the Department of Treasury Circular 570.
- **Allow TNECD to Reduce the Obligation Upon Completion of Milestones:** The waiver allows TNECD to reduce the amount of the letter of credit obligation below 25% over time or reduce the amount of the performance bond below 100% over time, upon a subgrantee meeting deployment milestones specified by TNECD.
- **Allow for an Alternative Initial LOC or Performance Bond Percentage:** The waiver allows the initial amount of the LOC or performance bond to be 10% of the subaward amount during the entire period of performance on a reimbursable basis consistent with Section IV.C.1.b of the NOFO and reimbursement is for periods of no more than six months each.

Audited Financial Statements

TNECD will require that each potential subgrantee submit financial statements for the most recent two (2) years that are audited by an independent certified public accountant. If the potential subgrantee has not been audited during the ordinary course of business, in lieu of submitting audited financial statements, it must submit unaudited financial statements from the prior fiscal year and certify that it will provide financial statements from the prior fiscal year that are audited by an independent certified public accountant. For public, tribal, and not-for-profit entities, TNECD will allow the use of an appropriate and requisite financial statement. TNECD will not approve any grant for the deployment or upgrading of network facilities unless it is determined that the documents submitted to it demonstrate the prospective subgrantee's financial capability

with respect to the proposed project.

Each of the aforementioned documents will be uploaded as mandatory attachments by the potential subgrantee using the application portal on the SmartSimple platform. All financial documents submitted to TNECD will be treated as confidential.

Business Plans

TNECD will require potential subgrantees to submit business plans and related analyses that substantiate the sustainability of the proposed project. Application questions include detailed narrative prompts, which include but is not limited to:

- the potential subgrantee's experience relevant to the grant program and the proposed project
- the potential subgrantee's history, structure, and their business model
- how many years they have been in existence, as well as how long they have provided voice, broadband, and/or electric transmission.

Additionally, the submitted network plans and specifications require a stamp from a Professional Engineer (PE) licensed in the State of Tennessee.

Lastly, TNECD will require specific documents to substantiate the financial sustainability of the proposed project. Potential subgrantees will submit documents such as audited financial statements, pro forma statements, balance sheets, income statements, and statement of cash flows for at least three (3) years. Any audits must be conducted on AICPA standards for Generally Accepted Audit Standards (GAAS) or based on General Accounting Office (GAO) standards for Government Auditing Standards for potential government subgrantees.

2.4.12 Managerial Capability Requirements

Potential subgrantees will be required to submit resumes for all key management personnel and an organizational chart detailing all parent, subsidiaries, and affiliates in their applications. As discussed in 2.4.11, the potential applicant must also provide detailed narratives describing their experience constructing and managing a broadband services network, including the completion of projects of similar scope and size. TNECD will retain qualified personnel to review and score all relevant documents to ensure a comprehensive assessment of an applicant's capacity. TNECD will not approve any application unless the applicant clearly demonstrates their managerial capability to deploy or upgrade a telecommunications network and fully comply with all capability requirements outlined in the BEAD NOFO on pages 73-74.

TNECD will require potential subgrantees to respond to several detailed narrative prompts, which include but are not limited to, the potential subgrantee's experience relevant to the grant program and the proposed project; the potential subgrantee's history, structure, and their business model; and how many years they have been in existence, as well as how long they have provided voice, broadband, and/or electric transmission. Application questions also require a project timeline estimation table including milestones of the project. Additionally, a potential subgrantee's readiness will also be assessed through the relevant financial and network specification documents discussed in previous sections.

2.4.13 Technical Capability Requirements

TNECD will request materials verifying that all potential subgrantees meet the minimum qualifications for technical capabilities as outlined in the BEAD NOFO. TNECD will develop specific application questions to

evaluate a potential subgrantees ability to complete and operate any project. Additionally, TNECD will develop application questions to ensure the potential subgrantee will utilize an appropriately skilled workforce to construct the network.

TNECD will require all applicants to submit a network design, diagram, program costs, built-out timeline and milestones for project implementation, and a capital investment schedule evidencing complete build-out and initiation of service within four years of the contract start date. All technical documents must include a certification from a professional engineer who is licensed in the State of Tennessee that confirms the proposed network can deliver broadband service that meets the performance requirements for all locations in the project. Furthermore, TNECD will formulate application questions regarding the potential subgrantees experience, length of existence, capacity, organizational structure, and completion of projects of a similar scope and size.

All technical documentation will be reviewed by qualified personnel. TNECD will not consider any applications that do not meet the minimum requirements outlined on page 74 of the BEAD NOFO. TNECD will also require all potential subgrantees to submit a plan regarding the use of an appropriately skilled and credentialed workforce. At a minimum, the plan should cover the following items:

- The ways in which the applicant will ensure the use of an appropriately skilled workforce, e.g., through Registered Apprenticeships or other joint labor-management training programs that serve all workers.
- The steps that will be taken to ensure that all members of the project workforce will have appropriate credentials, e.g., appropriate, and relevant pre-existing occupational training, certification, and licensure.
- Whether the workforce is unionized.
- Whether the workforce will be directly employed or whether work will be performed by a subcontracted workforce; and
- The entities that the applicant plans to contract and subcontract with in carrying out the proposed work.

In the event a potential subgrantees (applicant's, contractor's, or subcontractor's) workforce is not unionized, TNECD will require the following information regarding their workforce:

- The job titles and size of the workforce (full time equivalent "FTE" positions, including for contractors and subcontractors) required to carry out the proposed work over the course of the project and the entity that will employ each portion of the workforce.
- For each job title required to carry out the proposed work (including contractors and subcontractors), a description of:
 - safety training, certification, and/or licensure requirements (e.g., Occupational Safety and Health Administration "OSHA" 10, OSHA 30, confined space, traffic control, or other training as relevant depending on title and work), including whether there is a robust in-house training program with established requirements tied to certifications, titles; and
 - information on the professional certifications and/or in-house training in place to ensure that deployment is done at a high standard.

TNECD will require all applicants to submit a network design, diagram, program costs, built-out timeline and milestones for project implementation, and a capital investment schedule evidencing complete build-out and initiation of service within four years of the contract start date. All technical documents must include a certification from a professional engineer who is licensed in the State of Tennessee that confirms the proposed

network can deliver broadband service that meets the performance requirements for all locations in the project. Furthermore, TNECD will formulate application questions regarding the potential subgrantees experience, length of existence, capacity, organizational structure, and completion of projects of a similar scope and size.

All technical documentation will be reviewed by qualified personnel. TNECD will not consider any applications that do not meet the minimum requirements outlined on page 74 of the BEAD NOFO.

2.4.14 Compliance with Laws Capability

TNECD will require potential subgrantees to provide a narrative detailing their plan to complete the proposed project in compliance with all applicable Federal, State of Tennessee, territorial, and local laws. The narrative will include, but is not limited to, a description of the applicant's history of compliance with all applicable laws for previous broadband projects funded by federal and state programs and evidence of current compliance policies and procedures. Examples of documents that will be required include written internal procedures, required compliance reports, reports of violations and their corrective action plans, audit reports, etc. Further application questions will be developed by TNECD in accordance with the BEAD NOFO. TNECD will provide extensive information regarding these requirements and other resources through TNECD's website, informational webinars, and within grant and application guidance documents.

TNECD will require both an attestation and written narrative ensuring the potential subgrantee will allow any internal or contracted labor to form worker-led committees and meet with them upon request. This will be further developed and incorporated into other labor standards and protections requirements detailed in the BEAD NOFO. Additionally, this will be further assessed at the time of project monitoring. Updates will be requested during regular quarterly report submissions.

2.4.15 Operational Capability Requirements

TNECD will require potential subgrantees to provide details regarding their operational capability. Required information will include but is not limited to the following:

- Years in existence, specifically years providing broadband service.
 - Including a certification that they have provided a voice, broadband, and/or electric transmission or distribution service at least two (2) consecutive years prior to the application date.
 - If the above is not satisfied, the potential subgrantee must provide certification and substantiating evidence that it is a wholly owned subsidiary of such an entity, with an attestation to the number of years the prospective subgrantee or its parent company has been operating.
 - Additionally, potential subgrantees are required to submit a preliminary payment form, which allows our office to review the account owner title, any discrepancy in the organization legal entity name submitted in the grant application versus the legal entity name on file with the Internal Revenue Service (IRS), and to verify any parent/child relationships the potential grantee may have regarding the grant application.
- If the prospective subgrantee has operated only an electric transmission or distribution service, it must submit qualified operating or financial reports that it has filed with the relevant financial institution for the relevant time along with a certification that the submission is a true and accurate copy of the reports that were provided to the relevant financial institution.
- Current subscribers (broken down by households, businesses, and community anchor institutions)

- Staffing and management capacity (internally or contracted), including organizational structure and details about their business model.
 - Should the potential subgrantee indicate operational support will be provided through sub-contracted labor, this will be required to be reflected in their budget feasibility submission and their budget narrative justification document.
- Network monitoring and restoration capabilities, including a risk management plan.
- Any quality-of-service metrics and/or reports
- Completed state or federally funded projects, including the funding source and completion or non-completion timeframe; any awards returned or clawed back to any agency.
- Whether the potential subgrantee has ever defaulted on a state or federal obligation to provide broadband infrastructure
- Certification that the potential subgrantee has timely filed Commission Form 477s and the Broadband DATA Act submissions (if applicable). Certification will include a signed letter of attestation that the subgrantee has submitted both forms in a timely fashion. If the applicant has not, it should provide any explanations for pending, missing, or otherwise incorrectly submitted forms.
- Identify any pending or completed enforcement action, civil litigation, or other matter in which it failed to comply or was alleged to have failed to comply with Commission rules or regulations.
- Submission of qualified operating or financial reports

If the potential subgrantee is a new entrant to the broadband market, the applicant must provide sufficient evidence to exhibit that the newly formed entity has obtained sufficient operational capabilities. Such evidence may include project descriptions, narratives from contractors or subcontractors, resumes from key personnel, or other comparable evidence.

All aforementioned documents will be reviewed by qualified personnel. Applications that fail to meet the minimum qualifications within the BEAD NOFO will not be considered to receive BEAD funding.

2.4.16 Ownership Requirements

TNECD shall ensure that potential subgrantees are thoroughly vetted and meet the minimum qualifications for providing information on ownership consistent with the requirements set forth in 47 C.F.R. § 1.2112(a)(1)-(7). This information is detailed below.

Each applicant will be required to provide:

1. List the real party or parties in interest in the applicant or application, including a complete disclosure of the identity and relationship of those persons or entities directly or indirectly owning or controlling (or both) the applicant.
2. List the name, address, and citizenship of any party holding 10 percent or more of stock in the applicant, whether voting or nonvoting, common, or preferred, including the specific amount of the interest or percentage held.
3. List, in the case of a limited partnership, the name, address and citizenship of each limited partner whose interest in the applicant is 10 percent or greater (as calculated according to the percentage of equity paid in or the percentage of distribution of profits and losses).

4. List, in the case of a general partnership, the name, address and citizenship of each partner, and the share or interest participation in the partnership.
5. List, in the case of a limited liability company, the name, address, and citizenship of each of its members whose interest in the applicant is 10 percent or greater.
6. List all parties holding indirect ownership interests in the applicant as determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain, that equals 10% or more of the applicant, except that if the ownership percentage for an interest in any link in the chain exceeds 50% or represents actual control, it shall be treated and reported as if it were a 100% interest; and
7. List any FCC-regulated entity or applicant for an FCC license, in which the applicant or any of the parties identified in paragraphs (a)(1) through (a)(5) of this section, owns 10 percent or more of stock, whether voting or nonvoting, common, or preferred. This list must include a description of each such entity's principal business and a description of each such entity's relationship to the applicant (e.g., Company A owns 10 percent of Company B (the applicant) and 10 percent of Company C, then Companies A and C must be listed on Company B's application, where C is an FCC licensee and/or license applicant).

Additionally, each applicant must provide in its application:

1. List the names, addresses, and citizenship of all officers, directors, affiliates, and other controlling interests of the applicant, as described in 47 CFR § 1.2110, and, if a consortium of small businesses or consortium of very small businesses, the members of the conglomerate organization.
2. List any FCC-regulated entity or applicant for an FCC license, in which any controlling interest of the applicant owns a 10 percent or greater interest or a total of 10 percent or more of any class of stock, warrants, options or debt securities. This list must include a description of each such entity's principal business and a description of each such entity's relationship to the applicant.
3. List all parties with which the applicant has entered into agreements or arrangements for the use of any of the spectrum capacity of any of the applicant's spectrum.
4. List separately and in the aggregate the gross revenues, computed in accordance with 47 CFR § 1.2110, for each of the following: The applicant, its affiliates, its controlling interests, and the affiliates of its controlling interests; and if a consortium of small businesses, the members comprising the consortium.
5. If claiming eligibility for a rural service provider bidding credit, provide all information to demonstrate that the applicant meets the criteria for such credit as set forth in 47 CFR § 1.2110(f)(4); and
6. If applying as a consortium of designated entities, provide the information in paragraphs (b)(1)(i) through (v) of this section separately for each member of the consortium.

As an exhibit, applicants must:

1. List the names, addresses, and citizenship of all officers, directors, and other controlling interests of the applicant, as described in 47 CFR § 1.2110.
2. List any FCC-regulated entity or applicant for an FCC license, in which any controlling interest of the applicant owns a 10 percent or greater interest or a total of 10 percent or more of any class of stock, warrants, options or debt securities. This list must include a description of each such entity's principal business and a description of each such entity's relationship to the applicant.
3. List and summarize all agreements or instruments (with appropriate references to specific provisions in the text of such agreements and instruments) that support the applicant's eligibility as a small business under the applicable designated entity provisions, including the establishment of de facto or de jure control. Such agreements and instruments include articles of incorporation and by-laws, partnership agreements, shareholder agreements, voting or other trust agreements, management agreements,

- franchise agreements, spectrum leasing arrangements, spectrum resale (including wholesale) arrangements, and any other relevant agreements (including letters of intent), oral or written.
4. List and summarize any investor protection agreements, including rights of first refusal, supermajority clauses, options, veto rights, and rights to hire and fire employees and to appoint members to boards of directors or management committees.
 5. List separately and in the aggregate the gross revenues, computed in accordance with 47 CFR § 1.2110, for each of the following: the applicant, its affiliates, its controlling interests, and affiliates of its controlling interests; and if a consortium of small businesses, the members comprising the consortium.
 6. List and summarize, if seeking the exemption for rural telephone cooperatives pursuant to 47 CFR § 1.2110, all documentation to establish eligibility pursuant to the factors listed under 47 CFR § 1.2110(b)(4)(iii)(A).
 7. List and summarize any agreements in which the applicant has entered arrangements for the use of any of the spectrum capacity of the license that is the subject of the application; and

If claiming eligibility for a rural service provider bidding credit, provide all information to demonstrate that the applicant meets the criteria for such credit as set forth in 47 CFR § 1.2110(f)(4).

Distribution of funding to subgrantees under the BEAD program will occur on a reimbursement basis after the effective start date of the contract. The subgrantee must incur 100% of costs and provide detailed documentation to receive grant funds. Requests for reimbursements must include an invoice that clearly shows the item or activity is eligible under the grant activities and is billed directly to the subgrantee's legal entity named on the grant contract. Also, proof of payment (cancelled check or ACH statement from their bank by the subgrantee to the vendor listed on the invoice) is required.

Additionally, the last 15% of the grant award (not 15% from every reimbursement request) is withheld until all contract obligations have been met and a closeout report has been submitted and approved by program staff.

TNECD will include standard language regarding recoupment of funds in all standard grant contracts. The language is as follows:

- If the Grantee fails to complete the Project within the Term, the Grantee shall be required to repay all the funds disbursed to the Grantee under this Grant Contract within sixty (60) days of the expiration of this Grant Contract.

As stated in the previous section, 15% of the grant funds will be retained until project completion, including approval of all closeout documents, and reporting requirements. In the event the potential subgrantee does not complete the project and does not willingly return paid grant funds, it is possible for TNECD's legal team to work with the State of Tennessee's Attorney General's office to pursue litigation and recoup paid funds with interest.

TNECD will require potential subgrantees to submit a quarterly progress report to monitor performance and ensure that timely reporting is available to the NTIA as required. Reporting guidelines and obligations will be communicated to subgrantees during the grant process. TNECD will share reporting guidelines through outreach efforts such as informational webinars, in-person meetings, website posting, and grant administration guidelines. Program staff are also available for one-on-one technical assistance with subgrantees. Quarterly progress reports will be submitted through an electronic portal found on TNECD's website and documentation will be trained on internal State of Tennessee drives. In addition to internal program staff, a third-party contractor will assist in the tracking of timely reports. Subgrantees will also be required to maintain sufficient records to substantiate all information provided. TNECD will also reserve the right to collect ad hoc reports during the grant period if performance concerns are identified at any point in the project timeline.

TNECD will utilize internal program staff and qualified third-party support to develop and execute risk assessments and monitoring plans for each potential subgrantee. TNECD will review and approve a risk assessment for each individual subgrantee, which considers several factors as part of a formula to determine the level of monitoring. The higher the risk level, the higher the level of monitoring that will be required for the subgrantee. The details and risk assessment formula are retained as a part of each subgrantees' Customer Relationship Manager (CRM) grant record. Each project will be monitored at least once during the grant period, with a minimum of 10% of all projects being conducted as in-person Site Visits.

Monitoring levels include:

- Desk Reviews: TNECD will conduct desk reviews via a Teams call to analyze all BEAD project service milestones and general compliance.
- Site Visits: TNECD will conduct in-person site visits at the grantees main office to verify and document project construction and general compliance.

A non-exhaustive list of items reviewed and verified during a monitoring visit include:

- All procurement documents for contractors and sub-contractors working on the project.
- The number of residential, commercial, and community anchor institution locations that have broadband access because of the project.
- Percentage of households in the project area who have access to broadband service.
- Percentage of subscribers in the project area to the broadband service
- Average monthly subscription rate for residential and commercial broadband service in the project area
- Any right-of-way fees or permit fees paid to local government, state government, railroad, private entity, or person during the fulfillment of the grant awarded.

Prior to the contract start date or shortly thereafter, TNECD will conduct Pre-Monitoring Meetings with each subgrantee to set expectations and provide technical assistance. Additionally, TNECD will require subgrantees to agree as a condition of the award that they will cooperate with both TNECD and NTIA with respect to any audit or monitoring of the project or award. Documentation related to the monitoring requirements above will be reviewed by qualified personnel to ensure full compliance with all requirements in the BEAD NOFO.

2.4.17 Other Public Funding Requirements

In accordance with the BEAD NOFO, TNECD will require prospective subgrantees to disclose, for themselves (and their affiliates), all the applications they have submitted or plan to submit, and every broadband deployment project that they are undertaking or have committed to undertake at the time of the application that uses public funds, including but not limited to funds provided under:

- the Families First Coronavirus Response Act (Public Law 116-127; 134 Stat. 178).
- the CARES Act (Public Law 116-136; 134 Stat. 281).
- the Consolidated Appropriations Act, 2021 (Public Law 116-260; 134 Stat. 1182).
- or the American Rescue Plan of 2021 (Public Law 117-2; 135 Stat. 4)

Prospective subgrantees must also disclose any federal Universal Service Fund high-cost program (e.g., RDOF, CAF), or any Tennessee, local universal service, or broadband deployment funding programs.

Prospective subgrantees must disclose the following for each broadband deployment project:

- a) the speed and latency of the broadband service to be provided (as measured and/or reported under the applicable rules)

- b) the geographic area to be covered
- c) the number of unserved and underserved locations committed to serve (or, if the commitment is to serve a percentage of locations within the specified geographic area, the relevant percentage)
- d) the amount of public funding to be used
- e) the cost of service to the consumer; and,
- f) the matching commitment, if any, provided by the subgrantee or its affiliates

Non-Deployment Subgrantee Selection (Requirement 9)

TNECD is currently unsure if there will be any funding remaining after it connects all un- and underserved Tennessee residences, businesses, and CAIs; however, if there is funding leftover TNECD will engage in non-deployment activities. The scope and extent of services will depend on available funding.

TNECD does not intend to subgrant for non-deployment activities. Rather, department will utilize its extensive statewide network of state universities, community colleges, and technical colleges to develop and deliver services that supplement Tennessee’s digital equity plan, address needs of Tennessee residents, and engage with local communities and stakeholders.

This approach effectively and efficiently utilizes a proven statewide system of State of Tennessee entities that has the reach and expertise to serve all Tennessee communities and residents, including underserved areas and covered populations. Because all participating institutions are part of the State of Tennessee system, they will be linked and managed through collaborative partnerships and interagency agreements that define specific activities, legal and procedural requirements, outcomes, and budgets.

TNECD will work with the University of Tennessee Center for Industrial Services (UTCIS) to develop and manage the statewide network. UTCIS, an agency of the UT Institute for Public Service with a statewide reach, has experience in partnering with higher education institutions and state agencies to develop and implement federal and state programs. Working closely with TNECD, UTCIS will develop collaborative partnerships and interagency agreements with University of Tennessee campuses and institutes; Tennessee Board of Regents community colleges and technical colleges; and other State of Tennessee higher education institutions.

2.5.2

- a. TNECD will select non-deployment initiatives by applying two criteria:
 - 1. The preferred initiatives will supplement the Tennessee Digital Opportunity Plan, which establishes goals, objectives, and performance indicators for serving covered populations and underserved areas. Covered populations include persons who are 60 and over; incarcerated individuals; veterans; persons with disabilities; members of racial or ethnic group; rural residents; and individuals with language barrier including English learners or those with low literacy levels.
 - 2. The preferred initiatives will align and support broader State of Tennessee goals. These include being the number one state in the southeast for high quality jobs and the fastest improving state in the country in educational attainment. State goals also address the need for a skilled workforce, healthier Tennessee, civil and social engagement, and ability of all Tennesseans to access essential government services online.

To further assess and refine these initiatives, TNECD will work with UTCIS to implement a planning process that includes:

1. Planning meetings and focus groups with the Tennessee Digital Taskforce, a representative group from across the state that will help guide Tennessee's digital equity plan
 2. Partnerships with American Job Centers to expand TNECD's efforts to interview members of covered populations about barriers and digital needs.
 3. Focus groups with American Job Center team members who work directly with covered population members and in underserved areas.
 4. Interviews with community college, technical college, and university team members who work directly with covered populations and in underserved areas.
 5. Development of a formal, structured plan that aligns roles, responsibilities, and activities with the needs of covered populations and other Tennessee residents.
- b. TNECD plans to focus on the following initiatives to address the needs of Tennessee residents:
1. Implementation of State of Tennessee digital equity plan (to supplement, not duplicate or supplant)
 2. User training with respect to cybersecurity, privacy, and other digital safety matters
 3. Digital literacy/upskilling (from beginner-level to advanced)
 4. Computer science, coding, and cybersecurity education programs
 5. Multi-lingual outreach to support adoption and digital literacy.
 6. Prisoner education to promote pre-release digital literacy job skills, online job-acquisitions skills, etc.

These initiatives will address the needs of residents, including members of covered populations, by providing greater online opportunities to increase education levels; secure needed skills to seek and secure high quality jobs; access telehealth services and other health information; increase civil and societal engagement; and increase access to essential government services.

- c. TNECD will work with UTCIS, the Tennessee Digital Taskforce, and other partners (see 2.5.3a) to inform the final selection and refinement of non-deployment activities. This includes conducting planning meetings, focus groups, and interviews with covered population members and other stakeholders.
- d. TNECD will work with UTCIS, the Tennessee Digital Taskforce, and other partners to determine whether other uses of funds might be more effective in achieving BEAD goals. Activities will include:
 1. Purposeful and ongoing communication with Tennessee stakeholders and residents (see 2.5.3c)
 2. Establishment of a formal, structured approach to evaluating progress, opportunities, and barriers
 3. Research and review of best practices of other states in using non-deployment funds.
 4. Close collaboration with NTIA and State of Tennessee leadership to facilitate pivots if necessary.

2.5.3

Prior to authorizing any funds for non-deployment activities, TNECD will:

1. Conduct its subgrantee selection process for deployment to unserved and underserved locations and ensure all grant areas have an ISP commitment.
2. Make final award decisions for infrastructure deployment.

To confirm, TNECD will allocate BEAD funding for non-deployment activities only if funding is available following certification of unserved and underserved locations.

2.5.4

The Eligible Entity (TNECD) will not use subgrantees.

Eligible Entity Implementation Activities (Requirement 10)

Deployment

Challenge Process

The first step in the implementation process will be TNECD's challenge process. TNECD will hold a 75-day process, including challenge, rebuttal and updating of the eligibility maps. The new eligibility maps will cover all eligible broadband serviceable locations (BSLs) which internet service providers may apply for.

Following the challenge process, TNECD will be releasing grant area eligibility maps for public comment. The grant areas will be comprised of 1-3 application areas per county with eligible BSLs, which will be designed around factors such as the number of unserved locations and geographic barriers.

Subgrantee Selection

Following the challenge process and the public comment period for eligible grant application areas, TNECD will begin conducting the subgrantee selection process. This process will be a competitive grant process which will allow internet service providers (ISPs) that meet the eligibility requirements in the BEAD NOFO to apply for the program. ISPs may apply for any application in which they are authorized to serve. Section 8 of Tennessee's BEAD Volume II Initial Proposal outlines the grant program rubric and subgrantee selection process in detail.

Overall, the TNECD BEAD funded subgrantee selection process will model how the state has conducted its broadband infrastructure grant programs since the inception of the Tennessee Broadband Accessibility Act of 2017. TNECD has had over six years of expertise in running more than seven competitive broadband infrastructure grant programs and will continue to ensure program transparency and compliance with state and federal policies, guidelines, and regulations.

Final Proposal Submission

Once subgrantees are selected for each of the project areas in the state, and all Tennessee households, businesses, and eligible Community Anchor Institutions (CAIs) are accounted for (pending funding is available to serve eligible CAIs), TNECD will submit the list of grant projects and all necessary information to NTIA in the form of the final proposal for review. Following approval, TNECD may take the next steps to draw down BEAD funding, contract with awardees, and begin deploying funding in project areas.

Non-Deployment

If TNECD has additional funding available following connecting all un-and underserved Tennessee households, businesses, and CAIs, TNECD will engage in non-deployment activities that will enhance broadband adoption, digital skills, and affordability in Tennessee.

TNECD does not plan to subgrant this funding out, but to utilize the statewide network of universities,

community colleges, and technical colleges to deliver services that supplement and are aligned with Tennessee's Digital Opportunity plan, addressing the needs of Tennessee's communities and stakeholders. TNECD believes that this method will allow the state to achieve the Digital Opportunity Plan goals and objectives efficiently and effectively by leveraging existing partnerships and expertise in the statewide network.

Labor Standards and Protections (Requirement 11)

Prospective subgrantees must provide the following information, including information about contractors and subcontractors:

- Prospective subgrantees' record of past compliance with federal labor and employment laws, which:
 - Must address information on these entities' compliance with federal labor and employment laws on broadband deployment projects in the last three years.
 - Should include a certification from an Officer/Director-level employee (or equivalent) of the prospective subgrantee evidencing consistent past compliance with federal labor and employment laws by the subgrantee, as well as all contractors and subcontractors; and
 - Should include written confirmation that the prospective subgrantee discloses any instances in which it or its contractors or subcontractors have been found to have violated laws such as the Occupational Safety and Health Act, the Fair Labor Standards Act, or any other applicable labor and employment laws for the preceding three years.
- Prospective subgrantees' plans for ensuring compliance with federal labor and employment laws, which must address the following:
 - How the prospective subgrantee will ensure compliance in its own labor and employment practices, as well as that of its contractors and subcontractors, including:
 - Information on applicable wage scales and wage and overtime payment practices for each class of employees expected to be involved directly in the physical construction of the broadband network; and
 - How the subgrantee will ensure the implementation of workplace safety committees that are authorized to raise health and safety concerns in connection with the delivery of deployment projects.

2.7.1.a Prospective subgrantees' record of past compliance with federal labor and employment laws

The State of Tennessee commits to continuing integration of fair labor standards in relation to BEAD funding and through compliance by the subgrantees.

The State of Tennessee will first evaluate projects based on a prospective subgrantee's demonstrated record of compliance with federal labor and employment laws for the preceding three years, if applicable. Requiring a three-year compliance record will help the State of Tennessee ensure a prospective subgrantee can complete a deployment and infrastructure project in a competent manner. Moreover, compliance with federal labor and employment laws will promote the effective and efficient completion of high-quality infrastructure projects by creating a reliable supply of skilled workers and minimizing disruptive and costly delays.

Prospective Subgrantees with Demonstrated Records

For those subgrantees with at least three years of a demonstrated record, the State of Tennessee will require the following information from prospective subgrantees to evaluate within the selection process:

Prospective subgrantees’ record of past compliance with federal labor and employment laws, which:

- Must address information on these entities’ compliance with federal labor and employment laws on broadband deployment projects in the last three years.
- Should include a certification from an Officer/Director-level employee (or equivalent) of the prospective subgrantee evidencing consistent past compliance with federal labor and employment laws by the subgrantee, as well as all contractors and subcontractors; and
- Should include written confirmation that the prospective subgrantee discloses any instances in which it or its contractors or subcontractors have been found to have violated laws such as the Occupational Safety and Health Act, the Fair Labor Standards Act, or any other applicable labor and employment laws for the preceding three years. Also enumerate any improvement plan that the cited entity implemented because of the citation.

Prospective Subgrantees Without Demonstrated Records

Prospective subgrantees that do not have a record of past compliance with federal labor and employment laws must submit a plan for compliance with Labor Standards and Protection Acts but will be assessed as a part of the gating criteria for consideration of a subaward (see below).

Labor Standards and Protections Acts

Act	Summary
Fair Labor Practices	
Fair Labor Standards Act	Establishment of minimum wage, overtime pay, recordkeeping, and child labor standards affecting full-time and part-time workers across private and public sectors.
Occupational Safety and Health Act	Establishment of safe and healthy workplace standards.
Service Contract Act	Establishment of standards for contractors and subcontractors performing services on prime contracts in excess of \$2,500.
Civil Rights and Nondiscrimination	
Title VI of the Civil Rights Act of 1964 (See also 15 C.F.R. Part 8)	Prohibition on discrimination based on race, color, or national origin under programs or activities receiving federal financial assistance, including from the Department of Commerce.
Title IX of the Education Amendments of 1972	Prohibition of discrimination based on sex under federally assisted education programs or activities.

The Americans with Disabilities Act of 1990	Prohibition of discrimination based on disability under programs, activities, and services provided or made available by Eligible Entities and local governments or instrumentalities or agencies thereto, as well as public or private entities that provide transportation.
Section 504 of the Rehabilitation Act of 1973	Prohibition of discrimination based on handicap under any program or activity receiving or benefiting from federal assistance.
The Age Discrimination Act of 1975	Prohibition of discrimination based on age in programs or activities receiving federal financial assistance.

Longstanding Commit to Compliance

All Prospective subgrantees’ must submit plans for ensuring compliance with federal labor and employment laws, which must address how the prospective subgrantee will ensure compliance in its own labor and employment practices, as well as that of its contractors and subcontractors, including:

- Information on applicable wage scales and wage and overtime payment practices for each class of employees expected to be involved directly in the physical construction of the broadband network; and
- How the subgrantee will ensure the implementation of workplace safety committees that are authorized to raise health and safety concerns in connection with the delivery of deployment projects.

Rubric and Scoring Implications

According to the NOFO, the definition of 'Fair Labor Practices' is as follows:

“Eligible Entities must give priority to projects based on a prospective subgrantee’s demonstrated record of and plans to comply with Federal labor and employment laws. New entrants without a record of labor and employment law compliance must be permitted to mitigate this fact by making specific, forward-looking commitments to strong labor and employment standards and protections with respect to BEAD-funded projects. This prioritization requirement is described in further detail in Section IV.C.1.e of this NOFO. (pg. 43)”

As stated above, evidence of past compliance with federal labor laws and/ or specific commitments to strong labor and employment standards, must be used as primary criteria for the scoring rubric. In addition, the NOFO states all prospective subgrantees must submit plans for how they will remain in compliance over time. Tennessee will award ten points in the overall BEAD rubric for meeting these objectives.

Applicants that meet these gating criteria (and others) will move forward to the competitive criteria scoring process. Applicants whose applications cannot demonstrate past compliance with federal labor laws, as applicable, and/or do not have a plan for ensuring future compliance will fail this gating criteria at the technical or initial review stage of the review process, will not have their applications competitively scored, and will not be considered for a subaward.

The State of Tennessee will determine consequences for non-compliance with labor and employment laws in the subgrantee agreements, to include the possibility of contract termination or legal action if necessary. All fair labor requirements in the NOFO will be included in the subgrantee contract as the Statement of Assurances.

2.7.2.b: The State of Tennessee does not plan to incorporate any of the following items into legally binding commitments for prospective subgrantees (including contractors and subcontractors) outside of what is explicitly required in the BEAD NOFO:

- a. Using a directly employed workforce, as opposed to a subcontracted workforce.
- b. Paying prevailing wages and benefits to workers, including compliance with Davis-Bacon and Related Acts requirements, where applicable, and collecting the required certified payrolls.
- c. Using project labor agreements (i.e., pre-hire collective bargaining agreements between unions and contractors that govern terms and conditions of employment for all workers on a construction project).
- d. Use of local hire provisions.
- e. Commitments to union neutrality.
- f. Use of labor peace agreements.
- g. Use of an appropriately skilled workforce (e.g., through registered apprenticeships or other joint labor-management training programs that serve all workers, particularly those underrepresented or historically excluded).
- h. Use of an appropriately credentialed workforce (i.e., satisfying requirements for appropriate and relevant pre-existing occupational training, certification, and licensure).
- i. Taking steps to prevent the misclassification of workers.

Workforce Readiness (Requirement 12)

2.8.1

Introduction

As Tennessee embarks on its ambitious Broadband Equity, Access, and Deployment (BEAD) Program, workforce readiness emerges as a critical factor for successful implementation. To fully harness the transformative potential of broadband infrastructure, the state must cultivate a highly skilled, diverse workforce with equitable opportunities for entry and advancement. Anticipating a projected shortfall in primary broadband occupations by 2026, Tennessee must act decisively to expand training pathways and ensure a robust talent pipeline.

The cornerstone of this endeavor lies in establishing a workforce advisory committee comprising industry leaders, government representatives, and education partners. This committee will play a pivotal role in evaluating existing post-secondary training programs and formulating recommendations for establishing comprehensive training standards, expanding successful programs, and creating new ones tailored to emerging needs.

Furthermore, targeted outreach initiatives will be crucial in encouraging broader workforce participation and promoting diversity among underrepresented populations. By fostering inclusive pathways into the broadband sector, Tennessee can ensure that the benefits of the BEAD Program extend to all communities and demographics.

Access to quality education and training that leads to fulfilling careers aligns seamlessly with Tennessee's overarching goals for economic development and social equity. BEAD initiatives will serve as a catalyst for workforce development, empowering the state to cultivate a well-trained, equitable, and diverse workforce prepared to navigate the dynamic landscape of the digital age.

Education and Training Opportunities in Tennessee

Tennessee residents have multiple locations and funding opportunities to acquire skills that can be applied to jobs required by the broadband industry. The Tennessee College of Applied Technology (TCAT) has 24 campuses across the state offering certifications in fields such as telecommunications, drafting, and truck driving to name a few; all occupations that will be needed to implement BEAD. Though these programs exist, they are not necessarily readily available. For example, telecommunications certifications and diplomas are only available at a single location.

In addition to the programs offered by TCAT, there are 13 community colleges in the Tennessee Board of Regents System offering associate degrees in various engineering fields, along with heavy equipment operator programs and network technician certifications.

To pay for community college or the TCAT, multiple funding opportunities exist. Tennessee Reconnect and TCAT Reconnect are last-dollar scholarships for adults looking to pursue a post-secondary education.¹ More widely known is the Tennessee Promise scholarship which covers tuition and fees for graduating high school students at any of the 13 community colleges or 24 TCAT campuses. Any high school senior graduating from an eligible Tennessee high school or homeschooling program may apply for this last-dollar scholarship. For the 2021-2022 school year, 31.6 percent of Tennessee Promise applicants were first generation college students and the average Tennessee Promise award per student was over \$25,000.² Collectively, these programs provide equitable on-ramps to BEAD employment for thousands of Tennesseans.

Over a 7-year period, more than 15,000 Tennessee Promise recipients transferred to one of the nine public four-year institutions in the state. These universities offer bachelor's degrees in engineering, as well as surveying and mapping.

The Broadband Workforce in Tennessee

Current projections show an expected shortage of workers across all BEAD occupation groups in Tennessee. Figure 1 shows the demand for workers in BEAD occupation groups in 2026, along with the deficit based on projected supply. Laborers and material movers and trucking crews will create the largest demand. The largest percentage deficits are expected for software engineers (13.2 percent), field engineers (13.1 percent), laborers and material movers (11.3 percent), and surveyors and drafters (10.2 percent).

¹ Students draw from other funding sources before being awarded a last-dollar scholarship equal to what is left of tuition and fees.

² Tennessee Higher Education Commission. "Tennessee Promise Annual Report 2022." <https://www.tn.gov/thec/research/tn-promise-annual-report.html>

Figure 1: Tennessee Labor Shortages

BEAD Occupation Group	BEAD Demand (FTEs)	Cross-Industry Deficit (FTEs) ¹	Deficit / Supply ²
2026 Totals	(2.3K)	(46.2K)	-9.1%
Laborers and material movers	(930)	(23,690)	-11.3%
Trucking crew	(618)	(9,313)	-6.2%
Equipment operators	(153)	(2,232)	-5.5%
Fiber and wireless technicians	(129)	(2,045)	-8.6%
Trenchers	(115)	(1,805)	-7.1%
Software engineers	(93)	(2,648)	-13.2%
Master and stage electricians	(68)	(1,246)	-8.3%
Structural engineers	(62)	(1,195)	-8.2%
Network architects and coordinators	(43)	(774)	-8.3%
Surveyors and drafters	(24)	(506)	-10.2%
Inspectors (e.g., permit, health & safety)	(20)	(315)	-7.2%
RF & field engineers	(16)	(399)	-13.1%

Notes: BEAD deployment role(s) tagged to each BEAD Occupation Group included in appendix mapping table; 1) Includes 2026 baseline forecast + incremental BEAD impact; 2) Cross-industry deficit / cross-industry supply

Sources: BLS, PMP, OECD, CBO, CostQuest, Deloitte Analysis

Most BEAD occupations are male dominated in the United States. For example, women only account for 22.4 percent of laborers and material movers, 14.9 percent of other engineers (which includes structural, software, and field engineers), and 13.3 percent of surveyors and drafters nationally.³ Since the labor force participation rate for women is lower in Tennessee than in most other states, providing more opportunities for women has great potential to increase the labor supply.

BEAD occupations fall into five broad occupation groups: computer, engineering, and science occupations, construction and extraction occupations, installation, maintenance, and repair occupations, transportation occupations, and material moving occupations.⁴ The share of employees by gender for these occupation groups and relevant subgroups in Tennessee are listed in Table 1. Computer, engineering, and science occupations have the largest share of women at 27.5 percent, followed closely by material moving occupations at 27.2 percent. Installation, repair, and maintenance occupations have the smallest share of women at 2.6 percent.

³ Employment and Earnings by Occupation. <https://www.dol.gov/agencies/wb/data/occupations>

⁴ Occupation groups based on the Census Bureau’s 2022 American Community Survey.

Table 1: Tennessee BEAD-related occupations by gender

Occupation	% Male	% Female
<i>Computer, engineering, and science occupations:</i>	72.5%	27.5%
Database and systems administrators and network architects	84.9%	15.1%
Miscellaneous computer occupations, including computer support specialists	71.1%	28.9%
Architects, surveyors, and cartographers	79.2%	20.8%
Engineers	87.5%	12.5%
Drafters, engineering, and mapping technicians	74.6%	25.4%
<i>Construction and extraction occupations:</i>	93.5%	6.5%
First-line supervisors of construction and extraction workers	89.7%	10.3%
Construction laborers	96.7%	3.3%
Electricians	94.6%	5.4%
Construction trades workers except carpenters, electricians, painters, plumbers, pipelayers and construction laborers	95.1%	4.9%
Other construction workers and helpers	87.9%	12.1%
<i>Installation, maintenance, and repair occupations:</i>	97.4%	2.6%
First-line supervisors of mechanics, installers, and repairers	97.4%	2.6%
Other installation, maintenance, and repair occupations including electrical and electronic equipment mechanics, installers, and repairers	96.4%	3.6%
<i>Transportation occupations:</i>	88.1%	11.9%
Supervisors of transportation and material moving workers	68.1%	31.9%
Driver/sales workers and truck drivers	91.8%	8.2%
All other transportation workers	92.4%	7.6%
<i>Material moving occupations:</i>	72.8%	27.2%
Laborers and material movers, hand	69.5%	30.5%
Material moving workers except supervisors and laborers and material movers, hand	88.0%	12.0%

Tennessee Broadband Partnerships

The **Tennessee Department of Economic and Community Development (TNECD)** Broadband Office is a central hub for broadband information, resources, and support. It plans to partner with a variety of organizations to ensure all communities participate in the digital economy.

In 2022, TNECD formed the **Digital Opportunity Taskforce**, which includes industry partners, educators, state agencies, and nonprofits. This taskforce provides a foundation for a future, sector-based, industry-led partnership focused on collaboration, knowledge sharing, and common goals. The alliance will grow, with the mission of expanding broadband access and adoption across the state. Within this sector-based partnership structure, a workforce advisory committee will be prioritized.

Another key partner is the **University of Tennessee Center for Industrial Services (UT CIS)**, which has extensive experience developing workforce development partnerships and programs. UT CIS houses a broad range of expertise and programs, including the state's NIST Manufacturing Extension Partnership, DOE APEX Accelerator, EDA University Center, and OSHA Training Institute. UT CIS can access needed services from University of Tennessee campuses and TBR institutions, as well as other state and national partners.

Other potential partners offer innovative workforce development models. A prime example is the **Partnerships in Industry and Education (PIE) Innovation Center** in Bradley County. It is the first of its kind in the state, bringing together businesses, educational institutions, and nonprofits to prepare students for the workforce. Tennessee can partner with the PIE Center to include broadband training and learn from them in developing additional regional centers.

Recommendations

Recommendation 1: Provide greater access to relevant training and education.

Although Tennessee offers scholarships for TCAT and community colleges, even more broadband paths are needed. Additional pathways can support the future workforce's development and ensure they have the knowledge and skills to complete deployment safely and effectively. To reach this goal, Tennessee will consider the following:

- a. Provide grant funding to higher education institutions, including the TCAT system, community colleges, and/or four-year universities, so they can increase the number, variety, and locations of BEAD-related certificate and degree programs such as surveying, software engineering, and RF & field engineering.
- b. Work with a partner to develop a program to reimburse students for educational expenses after joining the broadband workforce. Students who do not receive the Tennessee Promise scholarship should be eligible to receive loan repayment or other financial compensation if they pursue a BEAD occupation. This incentive should be tied to the length of time that they work in the field and how directly it relates to broadband expansion.

By expanding access, Tennessee will foster a skilled and credentialed workforce available to subgrantees. Further, the state will prioritize providing opportunities for potential subgrantees and community-based organizations to participate in workforce development groups to design and develop training standards to meet the changing needs of the industry.

Recommendation 2: Expand the labor pool.

Current projections show labor shortages in all BEAD occupation groups. It will be necessary to expand the labor pool to include more individuals from underrepresented groups, such as women, retirees, and individuals involved in the justice system. To target these groups, and others, Tennessee will consider the

following:

- a. Improve access to and affordability of childcare. TNECD will explore partnering with the Tennessee Department of Human Services to expand the [Childcare Payment Assistance Program](#) which could improve labor force participation rates, especially among women. This state program currently provides subsidies for families who have children six weeks to five years old and income below the 85th percentile of the state median income. The parents must work or attend school 30 or more hours per week. With additional funding, the program could be expanded by raising the income threshold.
- b. Partner with organizations who work with underrepresented groups to (1) promote BEAD educational opportunities and occupations and (2) to learn how to best create the environments their members need to take advantage of them. These groups are aware of their populations' needs and can be pivotal in ensuring potential candidates have the wraparound services required to successfully pursue a broadband path.
- c. Encourage potential subgrantees to offer flexible work arrangements and part-time positions, which are often more desirable for all underrepresented groups.
- d. Explore a partnership with the Tennessee Department of Corrections (TDOC) to recruit and actively recruit from the justice system. Justice-involved individuals often have a hard time entering the workforce with a criminal record. Creating paths from the justice system to BEAD occupations will allow the state to reach this underrepresented population. The [Caring Workplace Rural Opportunities Initiative](#), founded by the First Tennessee Development District in Northeast Tennessee, was created in 2020 to help individuals from recovery or justice-involved communities enter the workforce. This initiative could serve as a model for similar initiatives in other areas of the state.
- e. Highlight transferable skills gained through training and education when recruiting students. For example, training and skills acquired in the BEAD installation, maintenance, and repair occupations would also be valuable for broadband-focused jobs.

Sector-based partnerships have emerged as a powerful strategy for workforce development, offering training and comprehensive support services to expand the labor pool while cultivating a highly skilled and diverse workforce. In successful partnerships, each stakeholder plays a crucial role:

- **Industry employers** collectively identify common issues and address priority needs, such as advising policymakers on aligning education and training curricula with industry demands.
- **Educational systems** expand the capacity of existing programs and develop new ones to meet emerging workforce requirements.
- **State agencies** such as the Departments of Human Services (DHS) and Labor and Workforce Development (TDLWD) leverage their existing programs, like 2Gen Partners and the American Job Center-Tennessee, to facilitate upward social and economic mobility for Tennesseans.
- **Community-based organizations** like Catholic Charities of Tennessee and the East Tennessee State University IMPACT Program provide wraparound services, including utility assistance and food security, to support workforce participants.

As these partners are engaged or preparing to engage in their respective roles, the next step is for TNECD to take the lead in unifying them under a collective goal of enhancing broadband workforce readiness.

Recommendation 3: Engage targeted outreach.

Reaching out to underrepresented groups and areas that need workers the most will ensure job opportunities created by the BEAD Program are available to a diverse pool of workers. Targeted outreach may involve the following:

- a. Hold local job fairs and advertise in areas that have both a high share of underrepresented populations in BEAD occupations and the highest labor shortages.
- b. Reach out to high schools having high percentages of underrepresented populations to highlight opportunities and provide students with detailed information on BEAD training pathways.

Recommendation 4: Develop additional partnerships.

Tennessee must continue to develop and expand partnerships at the state, county, and community levels.

- a. Work with the internet service providers and the Digital Opportunity Taskforce to prioritize creation of a sector-based workforce advisory committee as North Carolina and Ohio have done. The committee should include industry, government, and education partners. Industry representation should include rank-and-file workers thereby providing worker voice to the process. The committee should develop a set of minimum training and/or experience standards for each BEAD occupational group. Standards for field workers should include necessary safety and environmental training such as OSHA 10-hour safety training, erosion control, traffic control, etc. The Tennessee State Workforce Development Board can assist and guide the committee's efforts.
- b. Partner with the Tennessee Higher Education Commission (THEC) whose Labor Education Alignment Program (LEAP) strives to create partnerships among employers and the state's education providers to close skill gaps in the workforce. With this program, they target many areas of unmet need having quality jobs paying more than the state median wage.

Work with existing regional and community-based partnerships such as the PIE Center to develop skilled workers in BEAD occupations. Use the PIE model to develop similar centers across the state. Notably, the PIE Center model includes secondary students and provides an equitable on-ramp into quality jobs.

2.8.2

As Tennessee embarks on ambitious broadband infrastructure projects, ensuring a skilled and credentialed workforce is paramount for successful execution. To address this critical need, prospective subgrantees will be required to submit a comprehensive workforce assurance plan outlining strategies to cultivate and maintain a highly qualified workforce.

The plan should encompass detailed methods for developing a skilled workforce, including partnerships with community colleges, collaborations with industry associations, and implementation of on-the-job training programs. Additionally, the plan must address credentialing requirements, outlining clear credentialing standards, establishing a verification process, and offering opportunities for employees to obtain necessary credentials.

Furthermore, the plan should specify the employment structure, listing subcontractors (if utilized), and address non-union workforce requirements. For non-union workforce participation, requirements include providing job titles, FTE positions, training requirements, and justifications for sufficiency of in-house training programs.

By implementing a comprehensive workforce assurance plan, Tennessee can effectively address the skilled labor needs of broadband infrastructure projects, ensuring the successful deployment of high-speed internet across the state.

Skilled Workforce Assurance

Tennessee will require prospective subgrantee's to submit a comprehensive plan to ensure an appropriately skilled workforce. A subgrantee's plan shall list specific methods such as:

1. Established partnerships with universities, community colleges and technical schools

Example: XYZ company partners with local community colleges and technical schools to develop customized training programs that align with *(name the specific skills utilized by the firm)* required for broadband infrastructure deployment. These programs provide hands-on training and certifications for individuals seeking employment in the broadband industry. *(Describe the result - has the firm hired, or does it intend to hire graduates?)*

2. Collaborations with industry associations and Tennessee's sector-based partnership council:

Example: XYZ company works with industry associations and the workforce council to identify the specific skill sets needed for broadband infrastructure projects. In collaboration with these stakeholders, we utilize:

- a. Targeted training programs – Currently the Tennessee College of Applied Technology (TCAT) has 24 campus locations across the state. We target graduates *from (name the targeted programs)*. Tennessee Promise⁵ funding is available to attend those institutions.
- b. Registered apprenticeship programs – Apprenticeship TN⁶, administered by the Tennessee Department of Labor and Workforce Development (TDLWD) will work directly with Tennessee employers interested in these programs. We utilize apprentices from *(name the apprenticeship programs)*.

3. Implement on-the-job training and mentorship programs:

Example: XYZ company has on-the-job training and mentorship programs that allow new workers to gain practical knowledge under the guidance of experienced professionals. This approach provides valuable hands-on learning opportunities and helps develop a skilled workforce for broadband infrastructure projects.

To provide ongoing training and development opportunities, the plan should designate a company training official. This official, or their designated representative, is responsible for overseeing the in-house training program and associated record keeping. For each session, record the training date and topic, duration, instructor name, and the number of attendees. Training topics will be specific to the workforce; examples include trenching, confined spaces, fall protection, safe lifting practices, flagging, material handling, erosion control, etc.

Credentialed Workforce Assurance

Tennessee will require prospective subgrantees to submit a comprehensive plan to ensure an appropriately credentialed workforce. The plans will document specific steps to do so.

Possible steps include, but are not limited to:

1. Work with TDLWD and the state's workforce development council to establish clear credentialing requirements: Clearly define the specific credentials, certifications, or licenses required for each job role within the company. This could include industry-recognized certifications, relevant occupational training certificates, or state-issued licenses. *(List the certifications, certificates, and licenses held by job titles within the company.)*
2. Implement a credential verification process: Develop a process for verifying the credentials of all prospective

⁵ Tennessee Promise is a last-dollar scholarship program for Tennessee high school graduates and will fund up to two years of secondary education.

⁶ [Registered Apprenticeship \(tn.gov\)](https://www.tn.gov)

and current employees. This may involve checking certifications against industry databases, verifying training completion records, or confirming licensure status with relevant authorities. *(Describe the company's verification process.)*

3. Partner with training providers: Collaborate with universities, local community colleges, technical schools, or industry-specific training providers to identify and recruit individuals with established credential requirements in part 1. *(List collaborations and the associated credentials provided.)*
4. Offer on-the-job training and certification support: Provide opportunities for employees to obtain necessary credentials through on-the-job training programs or financial support for certification exams. This can upskill existing employees and ensure they meet credential requirements. *(Describe opportunities the company provides.)*
5. Conduct regular skill assessments: Regularly assess the skills of the project workforce to identify any gaps or areas for improvement. This can inform targeted training initiatives or recruitment efforts to maintain a highly skilled workforce. *(Describe the frequency and types of skill assessments.)*
6. Incorporate credentialing requirements into contracts: Include specific credentialing requirements in contracts with subcontractors and vendors. This ensures that all individuals working on the project meet the necessary qualifications and possess the appropriate credentials. *(Provide example contracts and/or purchase orders incorporating the company's credentialing provisions.)*

The plan should designate an official to oversee a comprehensive credentialing strategy that ensures the project workforce has the necessary skills, certifications, and licenses to successfully execute broadband infrastructure projects.

Other Requirements

The plan should also:

1. Specify whether the workforce is directly employed, subcontracted, or both.
2. List subcontractors (if utilized)

Non-union Workforce Requirements

The plan document should establish whether the workforce is unionized. If any portion of the workforce is non-union, for the non-union portion, the plan must:

1. Provide a list including the following:
 - a. Job titles in the subgrantee's (or its subcontractor's) workforce
 - b. Number of Full-Time Equivalent (FTE) positions in each job title
2. For each job title employed by the subgrantee (or its subcontractors), the plan should:
 - a. Describe training, certification, and licensing requirements.
 - b. Describe the established standards to earn job titles and certifications through in-house training.
3. Explain why subgrantee/subcontractor in-house training programs are sufficient to ensure the quality of the finished work.

MBE/WBE/Labor Surplus Firms Inclusion (Requirement 13)

To ensure that diverse business enterprises (DBEs) are recruited, used, and retained, when possible, the State of Tennessee proposes to implement a comprehensive strategy that includes well-defined processes and data tracking methods. (Note: Labor Surplus Area (LSA) Firms are not registered and/or certified in Tennessee. Because of this, we propose soliciting HUBZones and Opportunity Zones as an alternative, as they target similar populations but can be verified.)

TNECD Strategies:

1. Place qualified small and minority businesses and women's business enterprises on solicitation lists.

TNECD will promote the State of Tennessee Governor's Office of Diversity Business Enterprise (Go-DBE) on their website. This office encourages Minority Owned, Woman Owned, Persons with Disability, Service-Disabled Veteran Owned and Small Business Enterprise firms (DBEs) interested in the state of Tennessee procurement opportunities to register for certification. Applying to this office is the first step towards certification as a Minority Owned, Women Owned, Persons with Disability, Service-Disabled Veteran Owned or Small Business Enterprise.

Once certified, DBEs will be listed in the state Diverse Broadband Enterprises (DBE) Directory.

2. Assure that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources.

TNECD is already in partnership with Go-DBE to promote and solicit available contracting opportunities. The office does an exceptional job soliciting DBEs by communicating to their vast network through promotion on their publicly available website, attending and advertising opportunities at various conferences, and highlighting opportunities during their training sessions.

In addition, we will work with the Small Business Administration (SBA) and SBA Development Centers to promote opportunities in low to moderate income areas, HUBZones, and Opportunity Zones statewide.

3. Divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises.

If it is determined that it is economically feasible, the State of Tennessee will divide total requirements into smaller tasks to permit maximum participation by MBEs, WBEs, and other small businesses. The State of Tennessee will also always allow its contractors to do the same.

4. Establish delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises.

The State of Tennessee will allow its contractors to establish delivery schedules that encourage participation by MBEs, WBEs, and other small businesses.

5. Use the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

TNECD will use the services and assistance of the organizations listed above, as well as others, to assist in fulfilling its commitments. Additional partner organizations may include: the University of Tennessee APEX Accelerator (formerly PTAC), the Tennessee Small Business Development Centers (TSBDCs), along with, the Small Business Administration (SBA) Nashville District Office, Tennessee Manufacturing Extension Program (TMEP), local governments, economic development organizations, local chambers of commerce, and paid certifying organizations, such as the Women's Business Executive Council, the MMBC Continuum, the Minority Business Development Agency (MBDA), Tristate Minority Supplier Development Council (TSMSSDC), among others.

6. Require subgrantees to take the affirmative steps listed above as it relates to subcontractors.

TNECD will add all affirmative steps in the Statement of Assurances subgrantees must certify to receive BEAD funding.

Data Tracking Methods

To ensure diverse businesses are recruited, used, and retained, when possible, TNECD will track the following two metrics closely:

1. The diversity status of its subgrantees, and.
2. TNECD will require subgrantees to report their efforts and successes of contracting with diverse businesses in each submitted annual report.

Cost and Barrier Reduction (Requirement 14)

Tennessee has an extensive broadband environment that involves a robust range of governments, providers, stakeholder partners, and community groups. TNECD plays a key role in this environment by providing leadership, policy guidance, information, and communication that advance Tennessee's broadband deployment. TNECD will continue to play this critical role by developing and disseminating timely and accurate information that helps governments, providers, and other stakeholders make effective decisions that reduce barriers and lower costs of deployment. This includes convening stakeholder listening sessions and planning meetings, sponsoring timely and focused reports on cost reduction techniques, tools, and technologies, identifying, and highlighting best practices in Tennessee and across the country, and advocating for approaches that streamline broadband deployment in Tennessee communities.

As part of these efforts, TNECD will take the steps below to reduce costs and barriers:

- a. TNECD has tools and resources that can help potential subgrantees identify and effectively use existing infrastructure to reduce their construction costs.

For example, TNECD has a FiberLocator license that contributes to a better understanding of reported middle-mile fiber networks and unleased or available reported dark fiber routes. FiberLocator also allows for mileage/distance calculations between reported end-of-lines (EOLs). The Tennessee Broadband Accessibility Map (TBAM) is another tool that provides insights that can be used for analysis and planning. TBAM is updated twice annually with the help of outreach and data collection efforts. TNECD will work with applicants to share the information gathered from these tools.

- b. 'Dig once' is a broad term that encompasses a range of policies ([NTIA](#)). Dig once policies encourage or require project owners to install multiple conduits or micro-ducts for future use during any construction (telecommunications, transportation, utilities) along the public right-of-way, especially highways and roads. TNECD will work with local jurisdictions, service providers, and other stakeholder partners to identify where dig-once is beneficial and develop workable solutions. TNECD recognizes that the predominantly rocky under-terrain is both difficult and expensive to deploy construction and will work with local jurisdictions, service providers, and stakeholder partners to identify where this policy is beneficial and economical, and help to identify any state-owned land where permitting or access pre-requisites could be waived.
- c. TNECD will continue to promote the Broadband Ready Communities program that designates Tennessee counties and cities in Tennessee that adopt an efficient and streamlined approach for reviewing applications and issuing permits for broadband deployment projects.

- d. Depending on the organization, permitting may take a significant amount of time. The state plans to assist by working with these organizations, and across state agencies, to facilitate a quicker turnaround for permitting, licensing, and/or agreements. TNECD will work with research partners to share best practices for streamlining permitting processes.
- e. Jurisdictions and private owners grant providers easements to access right of ways (ROW). They also provide permits to providers or reach lease agreements with them to build broadband infrastructure via conduits, wireline routes via utility poles, and other structures along the ROW ([NTIA](#)). TNECD is committed to working with local jurisdictions, providers, and other stakeholder partners to streamline ROW access and alleviate bottlenecks while ensuring safe construction practices. Benefits of streamlined ROW prices include significantly reduced deployment time and lower capital expenditures. In addition, TNECD will work with the Tennessee Department of Transportation (TDOT) and other state agencies to facilitate access to any identified ROW, as well as work with providers to attain licenses, permitting, or access to otherwise inaccessible land.
- f. Large freight orders can often be delayed due to unforeseen circumstances, availability, weather conditions, missing/returned/replaced items, etc. TNECD will encourage entities to prepare for these potential delays in shipping/receiving by adding additional, reasonable “padding” into their overall project timeline. The State recognizes these issues often inadvertently add length to construction, deployment, or overall completion, and entities should plan accordingly ahead of time to not hinder internal or external timelines.

In addition to the steps listed above, TNECD will continue to collaborate with the University of Tennessee and other higher education institutions to develop Tennessee-focused research studies that assess costs, benefits, and results of cost reduction practices.

As new barriers are identified, TNECD will have a comprehensive mitigation strategy to navigating through and around them. The state will consider all paths to completion and assist where necessary in the deployment of infrastructure where state owned land, assets, or poles may be leveraged, or where communication between departments would expedite permitting, licensing, etc.

TNECD anticipates the need for partnerships, such as Indefeasible Rights of Use (IRUs), standard leases, open access partnerships, and construction agreements, to effectively reach each identified area, covered population, and gap in coverage with reliable, sustainable, and scalable broadband. We will work with all broadband stakeholders, providers, and authorized entities to help facilitate collaboration, remove, or navigate barriers, and connect Tennesseans.

Resources

Broadband Policies and Mechanisms, National Telecommunications and Information Administration
<https://broadbandusa.ntia.doc.gov/sites/default/files/2022-04/Broadband%20Policies%20Mechanisms%20PDF.pdf>

Connecting Tennessee, The State of Tennessee Five-Year Broadband Plan, Tennessee Department of Economic and Community Development
<https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:604ebc55-1a2a-357b-9794-cdd88e49d452>

Climate Readiness (Requirement 15)

Tennessee Climate Overview

Tennessee consists of four unique climate divisions: East, Cumberland Plateau, Middle, and West ([Tennessee Climate Office](#), East Tennessee State University).

Generally, Tennessee has a temperate climate, with warm summers and mild winters. However, the state's varied topography leads to a wide range of climatic conditions. Temperatures decrease from west to east across the state as elevation increases. Average minimum temperatures in January, for example, range from 22° F in Mountain City to 33° F in Memphis ([NOAA State Climate Summary 2022](#)).

Total annual precipitation has been mostly above average since 1990. The wettest annual average precipitation was 2016-20 with an annual average of more than 60 inches per year. Extreme weather events in Tennessee include severe thunderstorms, flooding, droughts, heat and cold waves and winter storms.

Since 2000, Tennessee has received 33 major disaster declarations involving storms and flooding. The Flood of 2010, for example, occurred after Nashville received 13.6 inches of rain on May 1-2, exceeding the previous two-day record of 6.7 inches. More recently, 20.73 inches of rain fell in the McEwen area of Middle Tennessee, resulting in flash flooding throughout the area.

Tennessee has experienced a high number of tornados, averaging 21 tornados and five fatalities per year from 1985-2019. Tennessee reported 93 tornados in April 2011, surpassing the previous record of 42 tornados in April 1974.

Looking toward the future, NOAA projects **unprecedented warming during this century**. Any substantial increase in temperature will lead to increased heat wave intensity and also decreased cold wave intensity. In addition, winter and spring precipitation is projected to increase. Taken together, these conditions will likely increase the risk for storms (high wind, rainfall, lightning) tornados, flooding, and heat waves.

Initial Hazard Screening Areas

The following chart, based on the [FEMA National Risk Index](#) for natural hazards, shows geographic areas which will be subject to an initial hazard screening in early 2024 due to their identified current and future weather- and climate-related risks. Risk index scores are calculated using an equation that combines scores for expected annual Loss due to natural hazards, social vulnerability, and community resilience. Overall risk rating refers to a percentile rating compared to all other U.S. counties. [We anticipate](#) that these risks [will increase](#) over the next 20 years.

Geographic Areas Subject to Initial Hazard Screening

County	Climate Division	Overall Risk Rating	Highest Percentile Risk Hazards
Shelby	West	99.24	flooding, tornado, heat wave
Dyer	West	86.8	earthquake, heat wave, tornado
Gibson	West	86.38	earthquake, flooding, tornado
Madison	West	90.65	earthquake, tornado, lightning
Montgomery	Middle	85.59	earthquake, lightning, tornado
Davidson	Middle	96.5	flooding, tornado, earthquake

Sumner	Middle	83.36	tornado, ice storm, earthquake
Rutherford	Middle	88.23	tornado, lightning, earthquake
Hamilton	East	92.4	tornado, lightning, wind
Knox	East	89.44	lightning, tornado, ice storm

Short Term BEAD Infrastructure Deployment Climate Risks

The NOAA State Climate Summary states that extreme weather events that frequently occur in Tennessee include severe thunderstorms, flooding, tornadoes, droughts, heat and cold waves, and winter storms. The following chart, based on the FEMA National Risk Index, supports the NOAA Summary. The Index rates a county's level of risk for a range of natural hazards. FEMA classifies a county's risk level as very high, relatively high, relatively moderate, relatively low, or very low. In summary, 45 counties have very high, relatively high, or relatively moderate risk for high winds; 42 counties have moderate to high risk for lightning, and 34 counties have moderate to high risk for tornadoes.

Number of Tennessee Counties Facing Risk from Natural Hazards

Natural Hazard	FEMA Risk Level Categories			Total
	Very High	Relatively High	Relatively Moderate	
Cold wave	0	1	6	7
Drought	0	0	2	2
Earthquake	0	1	16	17
Heat wave	0	1	17	18
Ice	2	4	13	19
Lightning	1	10	31	42
Flooding	2	0	11	11
High wind	0	6	45	45
Tornado	1	8	34	34
Winter weather	0	0	17	17

In West Tennessee, tornadoes present a relatively high risk for Shelby and Madison Counties and a relatively moderate risk for eleven other counties. In Middle Tennessee, tornados present a relatively high risk for Davidson, Maury, Montgomery, Rutherford and Sumner Counties, and a relatively moderate risk for 18 other counties. In East Tennessee, tornados present a relatively high risk for Hamilton and Knox Counties and a relatively moderate risk for five other counties.

Those counties with a relatively high risk of lightning include Shelby and Madison in West Tennessee; Montgomery, Wilson, and Rutherford in Middle Tennessee; and Sevier, Washington, and Knox in East Tennessee. The Risk Index also indicates a very high risk for riverine flooding in Shelby County in West Tennessee and Davidson in Middle Tennessee. Relatively moderate risk for flooding is indicated for Gibson and Madison Counties in West; Rutherford and Wilson in Middle; and Bradley, Hamblen, Knox, Rhea, and Sevier in East.

Winter weather in Tennessee produces modest snowfall, ranging from 1-4 inches in southern counties to almost a foot in the northeast and higher amounts in the Smoky Mountains. According to the Risk Index, ice storms present a very high risk in Sumner County and relatively high risk in Wilson and Rutherford Counties, all in Middle Tennessee. Ice storms also present a relatively high risk in Shelby County in West Tennessee, and in Hamilton and Knox Counties in East Tennessee.

Although not a climate event, the risk of earthquakes poses a relatively high risk in Shelby County and relatively moderate risk in nine other counties in West Tennessee. Earthquake risk is also moderate in Davidson, Rutherford, and Williamson Counties in Middle Tennessee, and Hamilton and Knox Counties in East Tennessee. In summary, the most important and prevalent weather hazards to account for are high wind, tornadoes, and lightning, followed by heat waves, ice storms, and flooding.

Long Term BEAD Infrastructure Deployment Climate Risks

The [Climate Impact Lab](#) projects that temperatures will increase in Tennessee over the next 20 years and beyond. See chart below.

Temperature Condition	1986-2005	2020-2039
Average summer temperature	77 degrees F	79 degrees F
Days greater than 95	5 days	11 days
Average annual temperature	60 degrees F	62 degrees F

[EPA reports](#) that rising temperatures will increase evaporation and the trend toward increasingly heavy rainstorms will likely continue. This, in turn, could cause more frequent flooding. The relationship between climate change and tornadoes is less clear. Although a changing climate establishes the conditions for greater tornado risk, [experts appear divided](#) on how this connection will play out over the next 20 years. According to [the U.S. Department of Energy](#), recent trends show that [tornado alley is shifting eastward into Tennessee and other southeastern states](#). In addition, tornado season is becoming more variable and trends show more damaging tornadoes.

Tornadoes, storms, flooding, and heat waves will potentially increase in number, intensity, and seasonal variability over the next twenty years. The [Center on Rural Innovation](#) has developed a [Hazard-Infrastructure Risk Matrix](#) which lists the risks for broadband infrastructure and avoidance strategy for these and other hazards. Risks include structural stress, structural failures, equipment damage and grid power failure as risks for high tornado and strong wind areas. High lightning areas present risks for fire damage, electrical surges or short circuits, structural stress, and grid power danger. The chart below summarizes risks of tornadoes, storms, flooding, and heat waves becoming more prevalent and intense in Tennessee.

Future Weather-Related Risks & Mitigation/Avoidance Strategies Overview

Weather Risk	Risks	Mitigation/Avoidance Strategy
Tornadoes	Structural stress, structural failure, equipment damage	Equipment to withstand stress. See Hazard-Infrastructure Risk Matrix for more specific information

Storms (rainfall, high wind, lightning)	Electrical surge, short circuit, grid power failure, structural stress, structural failures	Lightning arrestors, surge protectors, equipment to withstand stress. See Hazard-Infrastructure Risk Matrix for more specific information
Flooding	Structural stress, water damage, electrical short circuit	Flood zone avoidance, appropriate materials, and techniques See Hazard-Infrastructure Risk Matrix for more specific information
Heat Waves	Grid power failure	Backup power supply See Hazard-Infrastructure Risk Matrix for more specific information.

Subgrantee Considerations & Next Steps

The proposed plan will require subgrantees to consider weather and climate impact on infrastructure deployments. In addition, TNECD will develop approaches that efficiently connect providers and stakeholder partners with experts who specialize in weather and environmentally shielded infrastructure, alternative deployment solutions, resilient materials, and consulting and design services. TNECD will work with providers and stakeholder partners to ensure that construction best practices are followed, and resiliency measures are put in place. This is especially important for networks impacting public safety and located in higher risk areas.

TNECD will partner with the University of Tennessee and other higher education institutions to develop an ongoing program that will periodically review and assess climate impacts on broadband infrastructure, as well as explore new developments in sustainability, data tools, mitigation techniques, materials, workforce, and construction. The program will include an annual review of activities and identification of planned initiatives, as well as a full assessment of climate risks and mitigation strategies every three years.

Low-Cost Broadband Service Option (Requirement 16)

TNECD requires that internet service providers who receive BEAD funds must provide a low-cost broadband service option to eligible subscribers, as defined by the BEAD NOFO, for \$50 per month. In proposing this amount, TNECD recognizes the importance of affordable access for Tennessee residents while ensuring an economically sustainable network.

The proposed broadband service option will include the following:

1. Costs \$50 per month or less, inclusive of all taxes, fees, and charges, with no additional non-recurring costs or fees to the consumer.
2. Allows the end user to apply the Affordable Connectivity Benefit subsidy (or any successor program) to the service price.
3. Provides the greater of (a) typical download speeds of at least 100 Mbps and typical upload speeds of at

least 20 Mbps, or the fastest speeds the infrastructure is capable of if less than 100 Mbps/20 Mbps or (b) the performance benchmark for fixed terrestrial broadband service established by the Federal Communications Commission pursuant to Section 706(b) of the Communications Act of 1934, as amended.

4. Provides typical latency measurements of no more than 100 milliseconds.
5. Is not subject to data caps, surcharges, or usage-based throttling, and is subject only to the same acceptable use policies to which subscribers to all other broadband internet access services plans offered to home subscribers by participating subgrantee must adhere; and
6. In the event the provider later offers a low-cost plan with higher speeds, those end-users subscribed to a low-cost service option will upgrade to the new low-cost offering at no cost.

Subgrantees will be required to promote and participate in the Affordable Connectivity Program (ACP) (and/or any successor programs), and subscribers that are eligible for a broadband service subsidy must be permitted to apply it to the proposed service option. Under the [Affordable Connectivity Program](#), subscribers with income below 200% of the poverty line are eligible for a \$30 Affordable Connectivity subsidy.

TNECD believes this low-cost option, especially when paired with the \$30 subsidy, is within financial reach for eligible subscribers. To provide context, the following chart shows median household income for Tennessee's eight distressed counties (Federal Reserve Economic Data, 2022). Distressed counties rank among the 10 percent most economically distressed counties in the nation. Each year, the Appalachian Regional Commission (ARC) prepares an index of county economic status for every county in the United States. Economic status designations are identified through a composite measure of each county's three-year average unemployment rate, per capita market income, and poverty rate.

Tennessee Rural Distressed County Household Income and Potential Monthly Payment

County	Median HH Income	2% of Income	Per Month
Lake	29,281	585.62	48.80
Hancock	34,055	681.10	56.76
Clay	39,770	795.40	66.28
Cocke	40,572	811.44	67.62
Scott	40,778	815.56	67.96
Perry	43,998	879.96	73.33

Hardeman	44,314	886.28	73.86
Bledsoe	44,867	897.34	74.78

The chart above has a column that shows the median household income in each of these communities and a column that reflects two percent of the total median income. In 2016, the Federal Communications Commission began using a benchmark of 2% of monthly household income to help define affordability for middle-class families (Pew Foundation, August 30, 2023). ECD is using the same metric to help define the BEAD low-cost option.

When the amount listed in the '2% of Income' column is divided by 12 (the number of months in the year), the 'Per Month' column suggests what an affordable monthly internet subscription would cost. With the \$30 Affordable Connectivity subsidy, those households with incomes of \$24,000 could reach the \$50 low-cost option with a monthly payment approaching 1% of income, rather than the 2% shown on the chart. In short, the \$50 low-cost service option, in combination with the Affordable Connectivity subsidy, can significantly enhance broadband affordability for eligible subscribers at and below median household income.

While the \$50 low-cost option will help lower income residents access broadband services, it will also enable providers to ensure an economically sustainable network. For subgrantees, this means that revenues must consistently cover operational expenditures, including power, network maintenance, middle mile and core transit fees, sales and marketing, customer support, and other business operations.

Tennessee providers, for example, must consider the challenge of higher operational costs in rural and remote locations with low population density, challenges of mountainous terrain and rocky soil, and the uncertainty of reliable customer subscription rates.

Methodology for Determining Annual Price Adjustment of Low-Cost Plans

To help keep pace with rising costs of labor and materials, there must be a mechanism to periodically adjust the price of low-cost plans. Many periodic data series are compiled by the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, and others. These various series track changes in inflation of goods and services, changes in wages, interest rates, etc. Which series is appropriate for determining cost adjustments of these low-cost plans?

The reason low-cost plans exist is to ensure that low-income households have access to high-speed broadband service. Therefore, it follows that an index tracking household income in the specific geographic region would be the most appropriate. Fortunately, there is such a series for Tennessee household income that uses data compiled by the U.S. Census Bureau. The series, named **Median Household Income in Tennessee**, is published annually by the Federal Reserve Bank of St. Louis¹.

The methodology for using the data series to determine the first annual price adjustment is as follows:

- Once the price of the low-cost plan is established, note the most recent value of the published series from the Federal Reserve Economic Data (FRED) website.

- The initial plan cost and this initial series value are now associated with each other.
- In each successive year, an updated value will be published. The annual price adjustment may be determined by computing the percentage change in the two values (i.e., estimates) of median income in Tennessee.

Here’s an illustrative example. Assume the initial price of the low-cost plan was established in October 2023 as \$50 monthly. At that point in time, the series value of Tennessee median income is noted as 65,380. An annual price adjustment could be scheduled for the following October.

In 2024, a new value representing Tennessee’s most current estimate of median household income will be published. Suppose the new value is 67,340. Then the October 2024 price adjustment would be:

$$\begin{aligned}
 \text{Annual Price Adjustment} &= \text{Previous year's plan price} \times \frac{(\text{new value} - \text{previous value})}{\text{previous value}} \\
 \text{Annual Price Adjustment} &= \$50 \times \frac{(67,340 - 65,380)}{65,380} = \$1.50
 \end{aligned}$$

Subsequent years may be adjusted similarly.

Adjusting prices in this manner allows subgrantees to better absorb increased labor and material costs and ensures that the price of low-cost plans does not outpace the income gains of low-cost plan subscribers.

¹ Source: U.S. Census Bureau, published at [Median Household Income in Tennessee \(MEHOINUSTNA646N\) | FRED | St. Louis Fed \(stlouisfed.org\)](#)

References

- Federal Reserve Economic Data, St. Louis, [Median Household Income for Tennessee](#), 2022
- National Telecommunications and Information Administration, [Broadband 101](#), Fall 2022
- National Telecommunications and Information Administration [Economics of Broadband Networks](#), March 2022
- Federal Communications Commission: [Affordable Connectivity Program](#).
- Benton Institute for Broadband and Society: [NTIA's Model Low Cost Broadband Service Option](#), October 30, 2023
- Broadband Search: [The Cost of Internet by State](#), November 27, 2022
- Dewitt and Humphrey, Pew Charitable Trust, [Is Broadband Affordable for Middle Class Families?](#) August 30, 2023

Initial Proposal Funding Request (IPFR) (Requirement 17)

In this section, TNECD will address the planned use for requested funds, to be made available once the Initial Proposal is approved, consistent with Section IV.B.8 of the BEAD NOFO.

Request and Justification

TNECD requests 100% of the total remaining BEAD funding allocation (\$808,413,541.66) upon approval of the initial proposal. TNECD believes that to facilitate expeditious deployment and construction efforts, implement outlined non-deployment initiatives, and effectively reach our goal of serving all Tennesseans, 100% of the

remaining total amount is necessary, given the below justification.

The exact cost of such a large-scale project cannot be determined this early in the process because it relies on cost-modeling tools and research initiatives. In addition, many factors ultimately determine this amount, including materials availability, workforce capacity, and license/permit coordination. Tennessee believes that the full allocation amount will greatly relieve the burden on both State and Local agencies when navigating these factors, especially around permitting and licensing provisions. TNECD is also dedicated to alleviating additional stress and burden on subgrantees when state-owned land or assets are involved, by waiving or lessening costs associated with these assets, as described in section four of the State's Five-Year Action Plan and detailed in requirement 14 of this Volume 2 document.

TNECD has identified approximately 243,724 total unserved and underserved locations and have been provided the NTIA-identified High-Cost areas. The State anticipates an above-average sum, in relation to the remaining BSLs, will be dedicated to constructing to/through those high-cost areas. The State also recognizes the potential need and benefit in running secondary, incentivized grant rounds to ensure our goal of 100% availability is met. Finally, TNECD believes that a higher allocation request will allow for expeditious distribution of resources to ensure initiation of deployment and non-deployment projects. If a project has access to all required resources, TNECD believes a more momentous and consistent level of progress can be achieved.

Programmatic Costs

TNECD is requesting \$16M to cover the costs associated with carrying out the BEAD program. The state anticipates that \$10M will be required to navigate through the challenge process and first grant round. This includes contractors, licensing, data acquisition and/or licensing costs, communications, and awareness costs to support the implementation of competitive subgrantee programs for both deployment and nondeployment projects. TNECD has also anticipated an additional \$6M will be needed to facilitate any internet service provider technical assistance and/or the creation and implementation of second round grant materials, if required.

In addition, TNECD requests the full 2% of the total BEAD Administrative allocation (\$16,266,393.60) to cover expenses relating (directly or indirectly) to administration of the grant under Section 60102(d)(2)(B) of the Infrastructure Act.

Closing

After accounting for the programmatic costs and administrative expenses, approximately \$790.6M (roughly 97 percent of the State's total BEAD allocation) will be used to connect all remaining Tennessee residences and businesses who are un- and underserved, followed by the connection of any eligible CAIs, after the approval of the Final Proposal. Based on the State's initial cost-modeling and investment cost calculations, TNECD estimates that this is enough funding to ensure connectivity is available to all Tennesseans. TNECD will prioritize funding in a way that, while adhering to the BEAD NOFO, ensures all Tennessee households, businesses, and BSLs have the required access to new/improved infrastructure. Any remaining funds will be used for any further non-deployment expenses.

TNECD will comply with all rules and requirements around the use of deployment and nondeployment funding prior to the acceptance of this Initial Proposal volume and during the entirety of this grant process.

Regulatory Approach (Requirement 18)

The State of Tennessee does not plan to waive laws concerning broadband, utility services, or similar subjects. While Tennessee does not have laws that preclude certain public sector providers from participation in the BEAD

subgrant competition, there are specific requirements on public and nonprofit providers that may impact how they can engage in the BEAD process. TNECD will make this information available to potential subgrantees. Relevant laws and potential impacts are listed below:

Law	Description
Broadband Accessibility Act, 2017, updated 2023 TCA 4-3-708 TCA 4-3-708 (casetext)	<ul style="list-style-type: none"> • Established grant program for broadband expansion. • Created broadband ready community designation. • Allowed electric cooperatives to offer broadband services, subject to territorial restrictions that with limited exceptions, prevent them from providing broadband outside their electric service areas. • Revised program administration (2023) • Increased alignment of state programs with federal grant program, including BEAD (2023)
Municipal Energy Authority Act, 2016, TCA 7-36-107 TCA 7-36-107 (casetext)	<ul style="list-style-type: none"> • Authorizes municipality to form authority to engage in internet services. • Applies territorial restrictions on an authority's internet services, same as that applicable to municipal system (see below)
Municipal Electric Plant Law, 2010 TCA 7-52-101 TCA 7-52-101 (casetext)	<ul style="list-style-type: none"> • Allows municipalities with a municipal electric plant to offer internet services. • Restricts municipality with electric plant from offering services where private provider has less than 6,000 subscribers or where coop has provided cable service for less than three years

In short, Tennessee municipalities have limited authority to offer broadband and internet services. Tennessee municipal utilities may be established by municipal governments under several different grants of authority including municipal charters, the Revenue Bond Law (T.C.A. § 7- 34-101, et seq.), sewer and waterworks systems (T.C.A. § 7-35-101, et seq.), the Municipal Electric Plant Law (T.C.A. § 7-52-101, et seq.), and the Municipal Energy Authority Act (T.C.A. § 7-36-101, et seq.). However, only utilities established pursuant to the Municipal Electric Plant Law, or the Municipal Energy Authority Act have been granted authority to offer internet or broadband services.

In an [undated memorandum provided by the Tennessee Comptroller of the Treasury](#),³ the Comptroller provided a list of requirements for municipalities offering broadband services through the Municipal Electric Plant Law or a Municipal Energy Authority:

1. A separate accounting and record-keeping system must be maintained for the operation of the municipal electric system's internet services program. All costs, both direct and indirect, incurred in the operation of the program must be allocated to the rates charged for the services provided.

2. A municipal electric system cannot subsidize the activities of the internet services program by using revenues of its power or other utility operations. The only authority to use electric system's funds is through the lending of funds, on a temporary basis, by an electric system. An electric system must charge interest to the internet services program for any loans at a rate equal to the highest rate then earned by the electric system on its invested plant funds.
3. An internet services program must adhere to the same terms/conditions provided in existing power pole attachment agreements, including cost allocations for rates, insurance and other expenses normally associated with similar programs operated by private providers. The rate charged to the internet services program for pole attachments must be equal to the rate charged other franchise holders providing similar services.
4. An electric system must provide the same response times and service quality to requests made by a private provider of similar services as it provides to the electric system's internet services program.
5. An electric system, with respect to any internet services provided, must make tax equivalent payments as required by T.C.A § 7-52-606; however, the tax equivalent payment to be made by the electric system may not exceed the amount that would otherwise be due if it were a private provider of internet services paying ad valorem taxes.
6. An electric system, with respect to any internet services provided, is subject to make payments to the appropriate units of government for amounts in lieu of the following taxes: excise and franchise taxes authorized by Tennessee Code Annotated, Title 67, Chapter 4, Parts 20 and 21; sales taxes authorized by Tennessee Code Annotated, Title 67, Part 6; and local privilege taxes authorized by Tennessee Code Annotated, Title 67, Chapter 4, Part 7.

Resources

Municipal Broadband and Internet Authority, UT Municipal Technical Advisory Service Legal Consultant memorandum, October 24, 2023

[State Broadband Profile: Tennessee](#), Advanced Communications Law and Policy Institute, New York Law School, January 2023

[Broadband Internet Deployment, Availability, and Adoption](#), Tennessee Advisory Commission on Intergovernmental Relations, January 2021

Certification of Compliance (Requirement 19)

1. Distribution of funding to subgrantees for, at a minimum, all deployment projects on a reimbursable basis (which would allow the Eligible Entity to withhold funds if the subgrantee fails to take the actions the funds are meant to subsidize).

Distribution of funding to subgrantees under the BEAD program will occur on a reimbursement basis after the effective start date of the contract. The subgrantee must incur 100% of costs and provide detailed documentation to receive grant funds. Requests for reimbursements must include an invoice that clearly shows the item or activity is eligible under the grant activities and is billed directly to the subgrantee's legal entity named on the grant contract. Also, proof of payment (cancelled check or ACH statement from their bank by the subgrantee to the vendor listed on the invoice) is required.

Additionally, the last 15% of the grant award (not 15% from every reimbursement request) is withheld until all contract obligations have been met and a closeout report has been submitted and approved by program staff.

2. The inclusion of claw back provisions (i.e., provisions allowing recoupment of funds previously disbursed) in

agreements between the Eligible Entity and any subgrantee.

TNECD will include standard language regarding recoupment of funds in all standard grant contracts. The language is as follows:

- If the Grantee fails to complete the Project within the Term, the Grantee shall be required to repay all the funds disbursed to the Grantee under this Grant Contract within sixty (60) days of the expiration of this Grant Contract.
- Additionally, Tennessee House Bill 1211 requires subgrantees to pay an additional 20% of the total grant amount if they fail to complete a project within the contract term.

As stated in the previous section, 15% of the grant funds will be retained until project completion, including approval of all closeout documents, and reporting requirements. In the event the potential subgrantee does not complete the project and does not willingly return paid grant funds, it is possible for TNECD's legal team to work with the State of Tennessee's Attorney General's office to pursue litigation and recoup paid funds with interest.

3. Timely subgrantee reporting mandates; and

TNECD will require potential subgrantees to submit a quarterly progress report to monitor performance and ensure that timely reporting is available to NTIA, as required. Reporting guidelines and obligations will be communicated to subgrantees during the grant process. TNECD will share reporting guidelines through outreach efforts such as informational webinars, in-person meetings, website posting, and grant administration guidelines. Program staff are also available for one-on-one technical assistance with subgrantees. Quarterly progress reports will be submitted through an electronic portal found on TNECD's website and documentation will be trained on internal State of Tennessee drives. In addition to internal program staff, a third-party contractor will assist in the tracking of timely reports. Subgrantees will also be required to maintain sufficient records to substantiate all information provided. TNECD will also reserve the right to collect ad hoc reports during the grant period if performance concerns are identified at any point in the project timeline.

4. Robust subgrantee monitoring practices.

TNECD will utilize internal program staff and qualified third-party support to develop and execute risk assessments and monitoring plans for each potential subgrantee. TNECD will review and approve a risk assessment for each individual subgrantee, which considers several factors as part of a formula to determine the level of monitoring. The higher the risk level, the higher the level of monitoring that will be required for the subgrantee. The details and risk assessment formula are retained as a part of each subgrantees' Customer Relationship Manager (CRM) grant record. Each project will be monitored at least once during the grant period, with a minimum of 10% of all projects being conducted as in-person Site Visits.

Monitoring levels include:

- Desk Reviews: TNECD will conduct desk reviews via a Teams call to analyze all BEAD project service milestones and general compliance.
- Site Visits: TNECD will conduct in-person site visits at the grantees main office to verify and document project construction and general compliance.

A non-exhaustive list of items reviewed and verified during a monitoring visit include:

- All procurement documents for contractors and sub-contractors working on the project.
- The number of residential, commercial, and community anchor institution locations that have

broadband access because of the project.

- Percentage of households in the project area who have access to broadband service.
- Percentage of subscribers in the project area to the broadband service
- Average monthly subscription rate for residential and commercial broadband service in the project area
- Any right-of-way fees or permit fees paid to local government, state government, railroad, private entity or person during the fulfillment of the grant awarded.

Prior to the contract start date or shortly thereafter, TNECD will conduct Pre-Monitoring Meetings with each subgrantee to set expectations and provide technical assistance. Additionally, TNECD will require subgrantees to agree as a condition of the award that they will cooperate with both TNECD and NTIA with respect to any audit or monitoring of the project or award. Documentation related to the monitoring requirements above will be reviewed by qualified personnel to ensure full compliance with all requirements in the BEAD NOFO.

Middle Class Affordability Plan

Introduction

The COVID-19 pandemic highlighted what many have known for a long time: high-speed internet access is no longer a luxury, but a necessity. Access to the internet plays a critical and growing role in the ways that Americans work, learn, receive healthcare, and participate in democracy. High-speed broadband access is necessary for households to engage in these and other essential activities. Tennessee's goal is for every household to have access to an affordable plan with minimum speeds of 100 Mbps download, 20 Mbps upload, and average latency less than 100 ms.

Currently, the Affordable Connectivity Plan (ACP) exists to make access affordable for low-income populations. Now the challenge is to ensure affordability for the middle-class as well. The FCC's 2023 reasonable comparability national benchmark for unlimited data plans offering 100/20 Mbps exceeds \$105 monthly. Using the generous assumption that households can budget 2 percent of their monthly income for broadband, this cost benchmark requires an annual income of at least \$63,000 – a level only slightly below the 2022 U.S. Census estimate of Tennessee's median household income. To make broadband affordable for all, Tennessee will incentivize providers to adopt strategies making high-quality broadband services affordable to all middle-class families.

Broadband Adoption Rates and Tennessee's Household Income Distribution

Households are eligible for a \$30 monthly ACP subsidy if their income falls below 200 percent of the federal poverty level (FPL). These plans are extremely desirable because many have a net cost of zero. However, few households near the median income level would be eligible. How much of a barrier is cost and how many households may be impacted? Below are 2021 broadband adoption rates by income level.

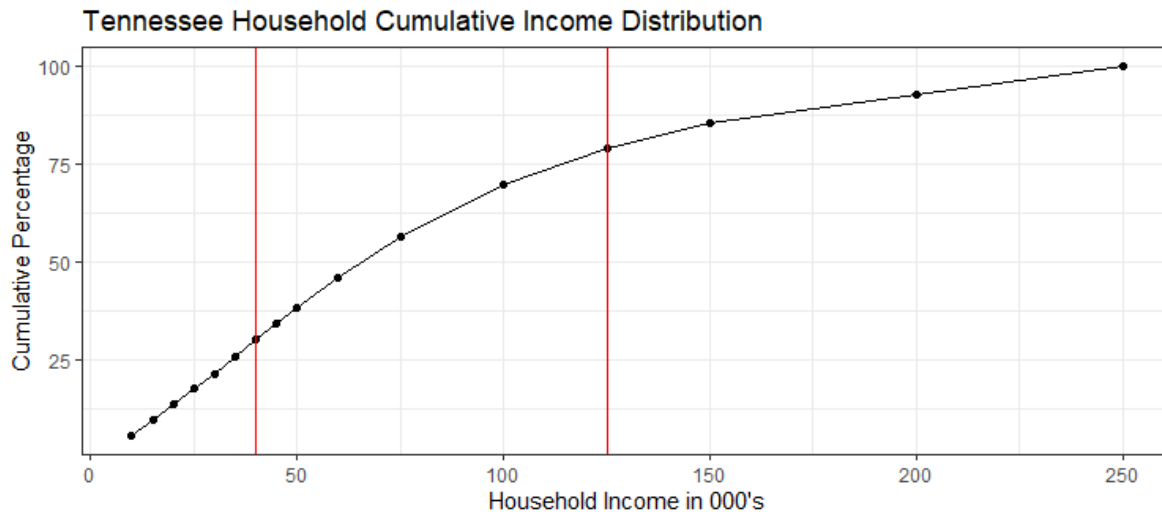
Table 1. 2021 Tennessee Broadband Adoption Rates by Household Income Level

Household Income	Broadband Adoption Rate
Below \$10k	74.0%
\$10k-20k	70.9%
\$20k-35k	81.3%,
\$35k-50k	88.6%,
\$50k-75k	92.8%
Above \$75k	96.3%

Source: 2021 ACS 5-Year Survey, Table B28004

The evidence indicates subscription rates increase by income level, so affordability is likely a barrier for many. To estimate how many middle-class households lack broadband access, we first need a working definition of “middle-class.” The cumulative distribution of Tennessee’s household income is below.

Figure 1: 2022 Tennessee Household Cumulative Income Distribution



Source: 2022 ACS 1-Year Survey, Table B19001

Since the ACP upper income eligibility limit is 200 percent of the federal poverty level (FPL), the middle-class income range should begin there. This is \$41,340 for an average size Tennessee household (i.e., 2.5 persons in 2022). Six hundred percent of the FPL or \$124,020 seems reasonable for an upper limit because it remains below about 20 percent of the income distribution. After rounding, we define a Tennessee middle-class household as having \$40,000 to \$125,000 income (roughly between the 31st and 80th percentiles). Given these income assumptions and the estimate of 2.85 million total households,⁷ our definition includes almost 1.4

⁷ 2022 ACS 1-Year Survey, Table B28004

million households (49 percent of 2.85 million).

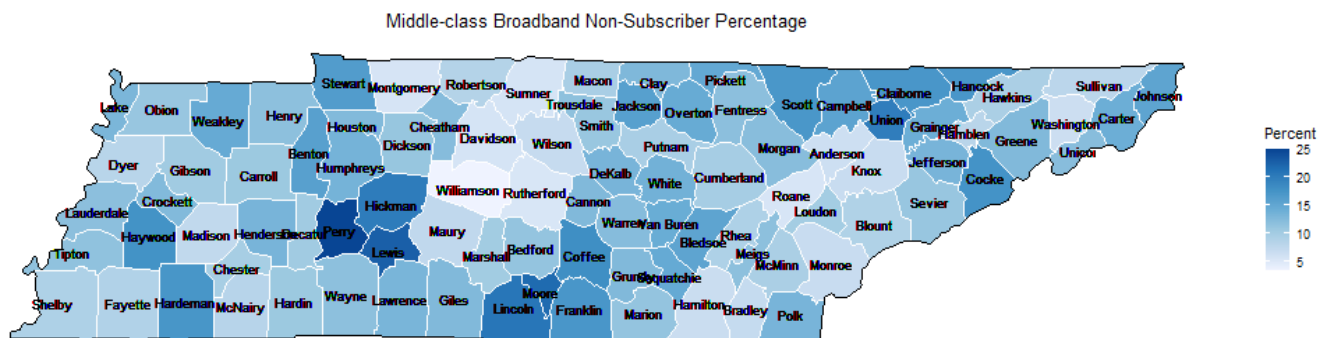
For the middle-class income brackets, the number of subscribers, the number of households in each bracket,⁸ and subscription rates are:

- \$40k to 50k (31st to 38th percentile) – 177k of 200k households (or 88.6 percent),
- \$50k to 75k (38th to 58th percentile) – 534k of 570k households (or 93.7 percent), and
- \$75k to 125k (58th to 80th percentile) – 603k of 627k households (or 96.2 percent).

Summing the bracket totals, the middle-class has 1,397,000 households with 1,314,000 subscribing households or a broadband adoption rate of about 94 percent.

The approximately 83,000 non-subscribers were found to be dispersed unevenly throughout the state's 95 counties. The individual county non-broadband adoption rates ranged from a low of about 3 percent in Williamson County to approximately 25 percent in Perry County. The following map indicates higher values in rural areas distant from the state's metro areas. To make broadband connections available to all, these rural counties must be a priority.

Figure 2. County Heat Map of Middle-class Broadband Non-Subscriber Rates



Source: 2021 ACS 5-Year Survey, Table B28004

If 2 percent of monthly income defines the benchmark for affordability, monthly affordable costs vary widely from \$49.42 in Hancock County to \$194.15 in Williamson County.⁹ An affordable cost in some counties may be unaffordable in adjacent ones.

Recommended Strategies

To achieve the goal of broadband internet access for all, Tennessee asks that providers adopt one or more of the state's recommended strategies. Recommended strategies include establishing a "middle-class" service tier, using proven business models to reach unserved and underserved areas, offering "fee-free" plans, and adhering to price transparency guidelines. Also, providers can certainly propose additional strategies they have designed themselves.

⁸ Boyd Center for Business and Economic Research (BCBER) calculations

⁹ <https://www.pewtrusts.org/en/research-and-analysis/articles/2023/08/30/is-broadband-affordable-for-middle-class-families>

Middle-class Plan

First, Tennessee encourages providers to offer a plan of services affordable to middle-class families (where the definition of middle-class shall be determined by the provider and may differ by area). This plan should provide, at a minimum, a high-quality connectivity meeting the FCC's July 2023 proposed broadband standard of 100/20 Mbps upload/download speeds. In addition, the average latency should be less than 100ms, and the plan should not include data caps or throttling provisions.

Reaching Unserved and Underserved Areas

As seen previously, households in less populated areas have lower broadband subscription rates. This can occur for two primary reasons. Median household incomes are lower, access is lacking, or perhaps both. Tennessee recommends that its providers think innovatively to extend affordable and quality service to these areas as those in other states have done successfully.

In one example, smaller towns in underserved areas have been able to leverage public-private partnerships matching a community's strengths with a complementary corporate partner. Such a partnership now provides high-quality, affordable service to residents of Westminster, MD (population 20,000). This partnership not only distributed the risk of the venture but introduced competition and drove down prices.¹⁰

Another successful strategy, infrastructure sharing, has been deployed in even more sparsely populated areas. Previously unserved areas in rural Minnesota now have a broadband cooperative providing connectivity to multiple small communities along with wireless services to farms and rural residents.¹¹ Alternative technologies, such as fixed wireless and satellite broadband, can bring service where wired infrastructure is not economically feasible.

Fee-free Service Tier

Offering broadband services that do not include activation, installation, or security deposit fees can be a helpful strategy for middle-class households in several ways. First, these fees can add up quickly and become a significant burden for families who are already struggling with financial constraints. By eliminating these fees, providers can make their services more accessible to middle-class households and help bridge the digital divide.

Additionally, offering this type of service tier can encourage more widespread adoption of broadband services. Middle-class households may be hesitant to invest in expensive activation and installation fees for something they may not yet use frequently or effectively. By removing these barriers, providers can make it easier for these households to try out the service without committing to the upfront expenses. This could lead to increased demand and usage of broadband services, which could ultimately benefit both the providers and the consumers.

Pricing Transparency

Tennessee also recommends that providers provide pricing transparency. Price benchmarking can be crucial for consumers making a purchasing decision from numerous options. Tennessee now has dozens of providers offering multiple plans with different speeds, data limits, and prices. While information exists for consumers to determine competitive market prices, it is not easily accessible nor consistently presented making comparisons overwhelming. Providers can choose to provide standardized information (e.g., cost, promotional discounts,

¹⁰ <https://nextcenturycities.org/westminster-and-ting-go-together-like-milk-and-cookies/>

¹¹ <https://blandinfoundation.org/articles/rs-fiber/> and <https://ilsr.org/report-mn-rural-fiber/>

equipment rental fees, installation, upload/download speeds, etc.) in a common format determined by the state's broadband office.

Given such information, Tennessee can establish a repository and facilitate distribution to consumers with a benchmark tool modeled on the existing [United States 2023 Broadband Benchmark Calculator](#). Knowledge is power, and this power can ultimately enhance competition and lower prices.

Incentivizing Providers

One requirement of the Broadband Equity, Access, and Deployment (BEAD) Program is the scoring rubric. This requirement exists for a competitive, fair, and open selection process. Providers must submit applications to provide broadband services, and these applications are scored on several criteria, and not all criteria carry equal weights. Specific weighting of highly desired initiatives can incentivize providers.

Economic theory recognizes the power of incentives in producing desirable outcomes. Incentives can take many forms, such as monetary rewards, recognition, or increased opportunities for growth and development. For broadband service providers in Tennessee, incentives can encourage the following of recommended strategies thereby helping to provide affordable, high-quality broadband services for middle-class households. The previous section describes four recommendations that will be incentivized.

These four strategies do not exhaust the possibilities for providing high-quality, affordable services to the middle class. It is fully expected that individual providers can and will offer other equally effective alternatives. Recognizing that all effective strategies require both cost and effort, the scoring rubric will award additional points for applications that demonstrate adoption of the recommended strategies and acceptable alternatives.