
West Virginia BEAD Program Procedures

Updated as of August 21, 2024

State of West Virginia

West Virginia Department of Economic Development



INTERNET FOR ALL **West Virginia**

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Introduction

In 2021, Congress passed the Infrastructure Investment and Jobs Act (IIJA)¹, which launched the Broadband, Equity, Access and Deployment (BEAD) program and Digital Equity program, among others. Through the BEAD program, the National Telecommunications and Information Administration (NTIA) will provide the State of West Virginia (the State) \$1.21 billion to provide highspeed broadband access to its residents. The West Virginia Department of Economic Development, Office of Broadband (collectively, “WVDED”) is tasked with deploying local and federal broadband funds, including those provided through the BEAD program. To that end, WVDED is launching the West Virginia BEAD Program (the Program) as a means of deploying highspeed broadband access across the State of West Virginia (the State) by providing grants to qualified broadband internet service providers. This document establishes the program procedures for the abovementioned work. Throughout the document, entities applying to the Program are referred to as “**applicants**” or “**subgrantees**” depending on which stage of the process is being discussed—with the latter reserved for references to post-award processes or requirements. Generally, references to the “**pre-application**” or “**full application**” relate to the specific stages or phases of the application process, defined in section 1.5, whereas references to the or an “**application**” on its own relates to the whole application (i.e., the combined pre-application and full application) or an application as a general concept, depending on the context.

This program is consistent with the guidelines of the National Telecommunication and Information Administration (NTIA) and is in line with material presented in West Virginia’s Initial Proposal Volumes 1 and 2.

¹ Office of the Federal Register, National Archives and Records Administration. "Public Law 117 - 58 - Infrastructure Investment and Jobs Act". Government. U.S. Government Publishing Office, November 14, 2021. <https://www.govinfo.gov/app/details/PLAW-117publ58>.

1. Program Overview

1.1 Source of Funds and Allocation

WVDED intends to support this program using funds allocated to the State of West Virginia through the BEAD program authorized by IIJA. A maximum of \$1.21 billion is available for award. Actual funds awarded will vary depending on the volume of applications received, the need of proposed projects for grant support, and the requirements of NTIA, U.S. Department of Commerce. WVDED reserves the right to reevaluate the Program outcomes and reallocate funds to other announced grant programs or create new programs. WVDED reserves the right to reject any or all applications made to the Program. Projects that WVDED selects for provisional award through the Program will be included in WVDED Final Proposal to NTIA for its review and approval.

1.2 Eligible Entities

Applicants must have a current statement of existence from the West Virginia Secretary of State and a Letter of Good Standing from the West Virginia Tax division. Applicants must have no prior default or significant violations under any federal, state, or local broadband expansion funding program, and no suspension or debarment as a vendor by the State of West Virginia or any Federal agency within three years prior to filing an application with WVDED for Program funding. Projects proposed by eligible applicants are subject to review and possible approval, denial, or modification under the Review Guidelines. Eligible entity types include cooperatives, nonprofit organizations, public-private partnerships, private companies, public or private utilities, public utility districts, or local governments.

1.3 Eligible Networks

Funded projects must deliver broadband with speeds of not less than 100 Mbps for downloads and 20 Mbps for uploads in accordance with the FCC's 80/80 metric.² That is, if WVDED or any other entity assigned by WVDED tests the end user speeds of these plans, the requirements will only be met if 80% of tests meet or exceed 80% of the required speeds and 95% of latency measurements must be at or below 100 milliseconds round trip. Funded Network connections to eligible Community Anchor Institutions (CAIs) shall be capable of delivering service at speeds not less than 1 Gigabit per second for downloads and 1 Gigabit per second for uploads. Eligible Entities shall ensure that such connections can be used to provide business data services. Broadband service to CAIs must be provided by fiber-optic technology; cable modem/hybrid fiber-coaxial technology; digital subscriber line (DSL) technology; or terrestrial fixed wireless technology utilizing entirely licensed spectrum or using a hybrid of licensed and unlicensed spectrum.

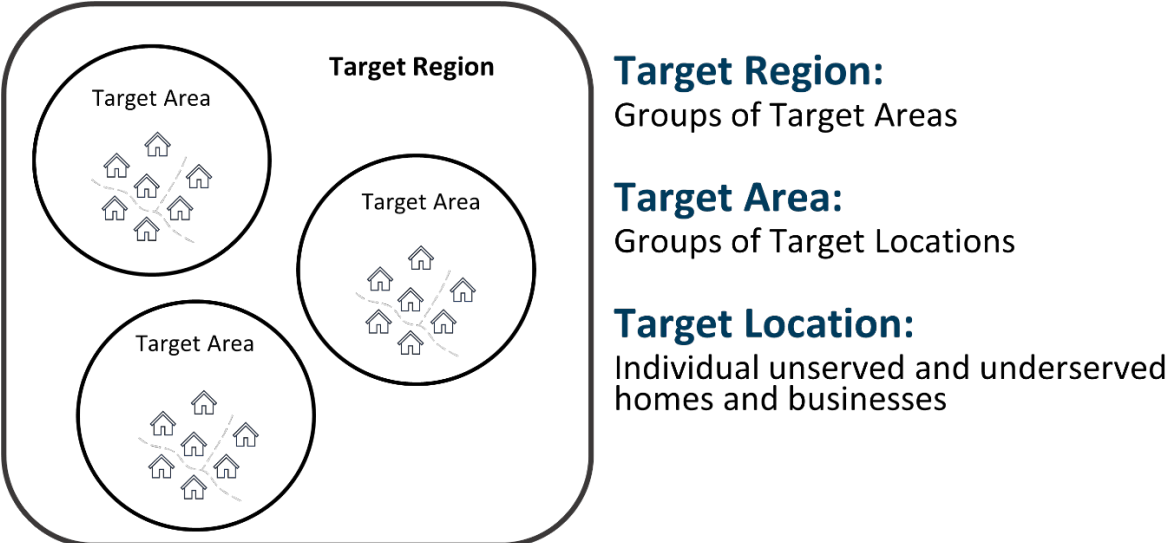
² FCC. Measuring Fixed Broadband – Twelfth Report, January 6, 2023. <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-twelfth-report>

1.4 Target Areas

WVDED will publish a list and map of locations designated as unserved, underserved, and served—the status of which will have been established according to a transparent and open process. The unserved and underserved locations form the focus of this program and will be referred to as “**Target Locations**” for the remainder of this document. WVDED will create and publish a set of “**Target Areas**”, which are pre-defined groupings of Target Locations. Nearby Target Areas will be further grouped into “**Target Regions**.” Applicants will use the Target Areas to form their Proposed Projects according to the procedures discussed in Section 4.1.

Figure 1 illustrates the nesting nature of Target Locations, Target Areas, and Target Regions. As noted above, West Virginia will have many Target Regions. The house icons represent Target Locations.

Figure 1: Summary of Target Locations, Target Areas, and Target Regions



1.5 Program Phases

From the standpoint of applicants, the Program will proceed through three main phases. All materials provided by applicants must be submitted through an application portal provided by WVDED. Materials provided by any other manner may not be considered for review.

1. **Pre-Application.** Applicants will submit pre-applications, which will provide WVDED with information to begin filtering out unqualified applicants as well as develop a clear idea of the capital that the companies have available. The pre-application phase will expedite the review process by collecting the majority of information that applies to all applications. More details on the pre-application process can be found in Section 3.
2. **Full Application.** A list of Target Areas and Regions will be published, containing Target Locations (i.e., locations that are eligible for BEAD funding and defined in Section 1.4), which have been

grouped into Target Areas and Regions. Applicants that have successfully passed the pre-application phase will then be approved to submit full applications for the Target Areas according to the rules set out in Section 4.1.

3. **Potential Award Pro Forma Review and Award Process.** WVDED will review the full applications, ensure project sustainability, and perform any final assessments necessary for award. WVDED will then award projects.

1.6 Application Deadlines

The start and end dates will be announced following NTIA's approval of West Virginia's challenge results. The Full Application period will last not less than 60 days. Specific dates will be announced on broadband.wv.gov.

2. Primary Program Requirements

2.1 Construction Timeline

Applicants must deploy the planned broadband network and begin providing service to each customer that desires broadband service within the project area not later than four years after the date on which the Applicant receives an award from WVDED. This includes the completion of construction, operationalization, testing, troubleshooting, and more—all of which are detailed in Section 7. Awards to selected projects will be made after NTIA’s approval of West Virginia’s Final Proposal for the BEAD program. WVDED may extend the deadline above in limited circumstances after consultation and approval by NTIA.

2.2 Grants Reimbursement Program

This is a reimbursement program and projects receiving funding may be reimbursed for eligible expenses up to a maximum project cost identified in the award.

2.3 Match Requirement

Applicants must commit a match of at least 25% of the total cost for each of its Proposed Projects. However, WVDED may waive a portion of the match that is proportionate to the number of Target Locations that fall within High-Cost areas, as defined in Section 60102(a)(2)(G) of the Infrastructure Investment and Jobs Act of 2021. The specifics of this requirement are detailed in Section 4.2.2.

Match must be spent on eligible expenditures. Applicants must commit to matching funds at time of application; no contingent matching sources are allowed. WVDED will not permit in-kind match generally but will permit it for utility partners in limited circumstances, such as a “donated” indefeasible rights of use (IRUs).

2.4 Eligible Expenses

Costs must be directly related to the upfront investment associated with installing and/or upgrading existing broadband facilities on the Proposed Project on a one-time, capital improvement basis. Eligible project activities and costs include:

1. Network and access equipment costs;
2. Outside plant costs;
3. Reasonable make-ready and one-time pole licensing costs, excluding recurring pole attachment payments;
4. Equipment shelter, land, site preparation, and site restoration costs; Note: Capital expenditures for general purpose equipment, special purpose equipment, and improvements to land, buildings,

- or equipment which materially increase their value are unallowable except with the prior written approval by WVDED. These must be included as a separate line item in approved project budgets.³
5. Customer premises equipment: Funding only covers up to the network demarcation point (e.g., NID or ONT);
 6. Professional services: Includes engineering and project management costs involved in designing and constructing the Proposed Project;
 7. Other upfront costs: Includes any other upfront costs not covered in other categories, such as permits, required licenses, sales tax applicable to new equipment purchases, temporary warehousing expenses required exclusively for materials and equipment to be installed as part of the funded project and miscellaneous minor material; and
 8. Long-term leases, defined as leases for a duration longer than 1 year, of facilities required to provide broadband service on the Proposed Project.⁴
 9. Internal labor costs incurred as part of eligible project activities are only reimbursable up to the proportion of employees' time spent exclusively on project activities during the period for which reimbursement is sought. When seeking reimbursement, applicants must submit such costs as line-items and provide supporting documentation for the expense. Supporting documentation shall include time spent by each employee on project activities, total time spent by each employee during the period for which reimbursement is sought, and an hourly cost that may include employee salary, itemized payroll taxes and benefits. Indirect costs are not reimbursable.

Costs that appear excessive and/or without justification and costs not considered eligible will not be reimbursed. Costs ineligible for the Program may not be paid for with matching funds committed to an award.⁵

Ineligible costs include:

- Internal administrative activities;
- Fundraising activities;
- Computers or office equipment;
- Vehicles or construction tools, including but not limited to cable trailers, fiber fusion splicers, fiber mechanical splicing devices, fiber splicing trailers, OTDRs, speed testing devices, hand tools (hammers, shovels, hoes, rakes, wrenches), pole climbing equipment, construction devices (Lashers, rollers, winches, chain hoists, becketts, lay-up sticks, measuring wheels, measuring sticks, traffic cones, construction traffic control signage), and cable reel stands;
- Equipment owned or leased by the customer, including routers and modems, and any other costs beyond the network interface point,
- Operating expenses, including monthly accounting and legal services;
- Software and IP Addresses;
- Expenses incurred prior to the start date of the period of performance or any existing inventory purchased prior to the program launch date;

³ Further regulations regarding the acquisition, disposition, and overall accounting for property and equipment are delineated in 2 CFR § 200.439.

⁴ NTIA, "Notice of Funding Opportunity: Broadband Equity, Access, and Deployment Program" <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf>, page 14.

⁵ BEAD NOFO, page 82.

- Short-term operating leases;
- Payment of interest or principal on outstanding debt instruments, or other debt service costs;
- Fees or issuance costs associated with the issuance of new debt;
- Satisfaction of any obligation arising under or pursuant to a settlement agreement, judgment, consent decree, or judicially confirmed debt restructuring plan in a judicial, administrative, or regulatory proceeding; or
- To support or oppose collective bargaining, whether directly or indirectly;
- To purchase or support any covered communications equipment or service (as defined in Section 9 of the Secure and Trusted Communications Network Act of 2019)⁶;
- To purchase or support fiber optic cable and optical transmission equipment manufactured in the People’s Republic of China unless a waiver is received from the Assistant Secretary.⁷
- Profits, fees, or other incremental charges above actual cost incurred by the Applicant.

Projects must primarily serve Target Locations. Facilities that are needed to deliver last-mile broadband service to Target Locations and incidentally cover non-Target Locations are reimbursable, but expenditures solely to benefit non-Target Locations are not reimbursable. Customer drops, installations, and equipment at non-Target Locations are not eligible for reimbursement.

2.5 Technical and Operational Capability

Applicants must certify and demonstrate that they are technically and managerially qualified to complete and operate any potential project and that they will use an appropriately skilled workforce.

2.6 Financial Capacity and Sustainability

Applicants must demonstrate the level of financial capacity that they have to support potentially awarded projects in West Virginia and must demonstrate that projects that they may be awarded will be financially sustainable.

2.7 Letter of Credit or Performance Bond

Applicants must obtain and submit either a letter of credit or performance bond. The letter of credit or performance bond must meet the requirements of the BEAD program as NTIA set for in the BEAD Program of Notice of Funding Opportunity,¹ and its subsequent conditional programmatic waiver of these requirements,² as implemented by WVDED.

2.7.1 Letter of Credit

Applicants choosing to use a letter of credit must obtain and submit a letter from an eligible bank or credit union, as defined in this section, committing to issue an irrevocable standby letter of credit in the required form to the applicant. The letter shall at a minimum provide the dollar amount of the letter of credit and

⁶ See 47 U.S.C. § 1608 and FCC Covered List at <https://www.fcc.gov/supplychain/coveredlist>.

⁷ BEAD NOFO, page 88.

the issuing bank's agreement to follow the terms and conditions of the model letter established by WVDED. To this end, WVDED will provide applicants with a model letter of credit.

An entity that is acceptable for the letter of credit is:

- 1) Any United States bank
 - a) That is insured by the Federal Deposit Insurance Corporation, and
 - b) That has a bank safety rating issued by Weiss of B- or better; or
- 2) Any United States credit union
 - a) That is insured by the National Credit Union Administration, and
 - b) That has a credit union safety rating issued by Weiss of B- or better; or
- 3) CoBank, so long as it maintains assets that place it among the 100 largest United States Banks, determined on the basis of total assets as of the calendar year immediately preceding the issuance of the letter of credit and it has a long-term unsecured credit rating issued by Standard & Poor's of BBB- or better (or an equivalent rating from another nationally recognized credit rating agency); or
- 4) The National Rural Utilities Cooperative Finance Corporation, so long as it maintains assets that place it among the 100 largest United States Banks, determined on basis of total assets as of the calendar year immediately preceding the issuance of the letter of credit and it has a long-term unsecured credit rating issued by Standard & Poor's of BBB- or better (or an equivalent rating from another nationally recognized credit rating agency); or
- 5) Any non-United States bank:
 - a) That is among the 100 largest non-U.S. banks in the world, determined on the basis of total assets as of the end of the calendar year immediately preceding the issuance of the letter of credit (determined on a U.S. dollar equivalent basis as of such date);
 - b) Has a branch office:
 - i) Located in the District of Columbia; or
 - ii) Located in New York City, New York, or such other branch office agreed to by the Commission, that will accept a letter of credit presentation from the Administrator via overnight courier, in addition to in-person presentations;
 - c) Has a long-term unsecured credit rating issued by a widely recognized credit rating agency that is equivalent to a BBB- or better rating by Standard & Poor's; and
 - d) Issues the letter of credit payable in United States dollars.

Prior to entering into any subgrantee agreement, each applicant using a letter of credit that has been provisionally awarded shall obtain an irrevocable standby letter of credit that meets the requirements established in the model letter of credit and documentation and in a value of no less than 10% of the subaward amount. At this step, the provisional subgrantee must obtain an actual letter of credit as opposed to the entity's commitment to issue the letter of credit, which is what is required during the full application process. The provisional subgrantee must commit to maintain the letter of credit in the amount of 10% of the subaward until it has demonstrated to satisfaction of WVDED that it has completed the buildout of 100% of locations to be served by the project or until the period of performance of the subaward has ended, whichever occurs first.

The applicant will also be required to provide, with its letter of credit, an opinion letter from legal counsel clearly 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 will not treat the letter of credit or proceeds of the letter of credit as property of the subgrantee’s bankruptcy estate under Section 541 of the Bankruptcy Code.

2.7.2 Performance Bond

Applicants choosing to use a performance bond must submit a letter from a company holding a certificate of authority as an acceptable surety on federal bonds as identified in the U.S. Department of Treasury Circular 570 committing to issue a performance bond to the prospective subgrantee.³ The letter shall at a minimum provide the dollar amount of the performance bond.

Prior to entering into any subgrantee agreement, each provisionally awarded subgrantee using a performance bond shall obtain a performance bond that meets these requirements, is satisfactory in all respects to WVDED, and in a value of no less than 10% of the subaward amount. At this step, the provisional subgrantee must obtain an actual performance bond as opposed to the company’s commitment to issue the performance bond, which is what is required during the application process. The provisional subgrantee must commit to maintain the performance bond in the amount of 10% of the subaward until it has demonstrated to satisfaction of WVDED that it has completed the buildout of 100% of locations to be served by the project or until the period of performance of the subaward has ended, whichever occurs first.

Where a subgrantee chooses to exercise the option to obtain a performance bond, the requirement that the subgrantee “provide with its letter of credit an opinion letter from legal counsel clearly 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” is waived.

2.8 Affordability

Subgrantees cannot charge long-drop fees or any other non-recurring fees to users that subscribe to either of the plans discussed in this section.

2.8.1 Low-Cost Plan

Applicants must certify and present their plan for a low-cost broadband service offering that will be provided to those who qualify for and/or are enrolled in the Federal Communications Commission’s (FCC) Affordable Connectivity Program (ACP).⁸ This plan must be offered and marketed to all such potential subscribers within a Proposed Project. As a part of this, each applicant must also present their specific planned offering and are encouraged to creatively develop this plan to suit their business model provided it meets the minimum requirements included herein. These minimum service requirements include speed

⁸ Eligibility criteria for the Affordable Connectivity Program are available here: <https://www.affordableconnectivity.gov/do-i-qualify/>.

and latency requirements that must be met in accordance with the FCC's 80/80 metric.⁹ That is, if WVDED or any other entity assigned by WVDED tests the end user speeds of these plans, the requirements will only be met if 80% of tests meet or exceed 80% of the required speeds and 95% of latency measurements must be at or below 100 milliseconds round trip. For instance, if WVDED runs 100 speed tests at a selection of locations that subscribe to low-cost broadband service plans, then at least 80 of those speed tests must meet 80% of the speed requirements and 95 latency measurements must meet requirements.

Subgrantees must include in their offerings a plan that meets the following specifications.

1. **Total cost.** The plan must not exceed a cost of \$50 per month, inclusive of all taxes, fees, and charges.
2. **ACP participation.** Plan must allow the end user to apply ACP subsidy to the service price.
3. **Offering time period.** The plan must be offered for at least ten years from service turn-up.
4. **Price increases.** Applicants are only permitted to increase prices of this plan: a) commensurate to year-over-year changes in the Consumer Price Index for All Urban Consumers: All Items Less Food & Energy (also known as Core CPI) as defined by the U.S. Bureau of Labor Statistics; or b) due to new or increased government mandated taxes and fees imposed on the consumer, not providers.
5. **Service characteristics.** The plan must provide 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 FCC pursuant to Section 706(b) of the Communications Act of 1934, as amended. For the purposes of these specifications, "typical" download or upload speeds mean that 80% of speed tests must demonstrate at or above 80% of such speeds. Furthermore, 95% of latency tests must demonstrate no more than 100 milliseconds of latency. The plan must not be subject to data caps, surcharges, or usage-based throttling and is only subject to the same acceptable use policies to which subscribers to all other broadband internet access service plans offered to home subscribers by the participating subgrantee must adhere.
6. **Upgrades permitted.** In the event the subgrantee later offers a low-cost plan with higher speeds downstream and/or upstream, it can permit eligible subscribers that are subscribed to a low-cost broadband service option to upgrade to the new low-cost offering at no cost. By way of example, if a customer is subscribed to a low-cost broadband service option that provides service at 100/20 Mbps and the customer's service provider offers a new low-cost broadband service option at 200/20 Mbps after the FCC issues a new report pursuant to section 706(a) of the Communications Act of 1934, as amended, the customer would be allowed to upgrade to the 200/20 Mbps offering at no charge.

WVDED will consider updating minimum pricing requirements and other conditions of the low-cost service option at least twice within the next ten years after service turn-up based on changes in economic and market conditions.

⁹ FCC. Measuring Fixed Broadband – Twelfth Report, January 6, 2023. <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-twelfth-report>

2.8.2 Middle-Class Affordability Plan

Applicants are encouraged to offer middle-class broadband service plans. If applicants choose to provide such a plan, it must be offered to all residential locations in their respective Proposed Project areas. Applicants that seek to offer this plan must provide information about the plan in its application. Each plan will be scored according to the criteria in Section 5.

WVDED will consider updating pricing requirements and other conditions of the middle-class affordability plan service option at least twice within the next ten years after service turn-up based on changes in economic and market conditions.

Subgrantees will be required to provide metrics related to the uptake of these plans, including, but not limited to, the number of individuals that have subscribed to them and the locations of these individuals at a county level.

2.9 Network Resiliency, Risk Mitigation, Hardening, and Scalability

2.9.1 Compliance with Industry-Standard Practices

Applicants must demonstrate a plan for compliance with—and the technical knowledge, experience, and capacity to meet—industry-standard network resiliency, hardening, and risk mitigation practices. These should address, at a minimum:

- flood-prone areas;
- landslide mitigation; and
- snowstorm and ice mitigation.

To address these, applicants will be required to meet, at a minimum, the following standards:

- Telcordia Blue Book – Manual of Construction Procedures – SR-1421
- FEMA Building Resource Library
 - FEMA P-348 – Protecting Building Utility Systems from Flood Damage
 - FEMA P-2181 – Flood Mitigation Handbook for Public Facilities
 - FEMA 182, Landslide Loss Reduction: A Guide for State and Local Government Planning
- West Virginia State and Regional Planning & Development Council Hazard Mitigation Plans.

In the event that applicants cannot meet any of these standards because of factors outside of their control, such as requirements imposed by pole owners that differ from these standards, applicants will have the opportunity to provide a clear explanation for why this is the case. WVDED will evaluate the explanation given to determine whether any exception should be provided to ensure the aforementioned standards are met to the greatest extent possible.

As a part of this, and prior to operating their networks built as a part of the Program, applicants must produce and receive WVDED approval on a disaster recovery plan and preventative maintenance plan, as described further in Section 7.17.

2.9.2 Additional Resiliency and Scalability

Any awarded Project that involves laying fiber-optic cables or conduit underground or along a roadway must include interspersed conduit access points at regular and short intervals for interconnection by unaffiliated entities. During the full application process, applicants must propose to deploy a reasonable amount of excess conduit capacity and to propose a conduit access point interval, and WVDED will consider the adequacy of the applicant's proposed excess conduit capacity and access points when evaluating the application.

Furthermore, WVDED strongly recommends that applicants meet or exceed any resiliency-related recommendations developed by the federal, state, and local agencies and factor scalability into their designs. As detailed in Section 5.2.4, projects demonstrating sufficient resiliency and scalability may receive consideration for these measures in project scoring. Certification of Compliance with Relevant Laws and Regulations

Applicants must certify that they will comply with all applicable federal, state, and local laws and regulations. These include, **but are not limited to**:

- Build America, Buy America Act (BABA)
- Secure and Trusted Communications Networks Act
- Clean Air Act
- Federal Water Pollution Control Act
- West Virginia Division of Highways (DOH) General Guidelines for Fiber Optic Permitting in the ROW
- Dig Once Policy – Underground installations in the WV DOH right of way are subject to the State Dig Once Policy (W. Va. Code § 17-2E-5) unless they qualify for an exception in that policy.
- WV State Historic Preservation (SHPO) consultation requirements (to determine National Historic Preservation Act (NHPA) Section 106 applicability)

Furthermore, applicants must certify that they agree to refrain from undertaking any construction activities until the applicant or its contractors/subcontractors have submitted all applicable permits and clearances to WVDED. For instance, before WVDED provides a subgrantee with the notice to proceed with construction, discussed in Section 7.3, the subgrantee must submit and receive approval from WVDED on all permits and clearances required for construction.

The following subsections detail some of these laws and regulations as they relate to the Program, including steps beyond certification that applicants must take to demonstrate compliance as a part of their applications to WVDED. Note that the information in this section should not be considered exhaustive, and it is the responsibility of applicants to ensure full compliance with all laws and regulations.

2.9.3 Build America, Buy America Act

Applicants must certify that they will comply with BABA and will be required to provide further information supporting these compliance plans. Applicants, if awarded projects, must comply with all of the provisions of BABA or request a waiver from NTIA. The contents of the waiver are still under development by NTIA. Some of the most vital provisions of BABA include:

- **Iron and Steel Products:** That all iron and steel products utilized by the applicant or any contractors and subcontractors in its Proposed Project have undergone all manufacturing processes, from the initial melting state through the application of coatings, in the U.S. unless a waiver is granted.
- **Manufactured Products:** That all manufactured products, including fiber optic cables used in its BEAD funded project such products were (a) manufactured in the U.S. and that the manufactured products contain U.S. components comprising greater than 55% of the total cost of all components of the manufactured product.
- **Construction Materials:** For construction materials, the applicant and its contractors must certify that construction materials including but not limited to non-ferrous metals; plastic and polymer-based products (including polymers used in fiber optic cables); glass (including optic glass); lumber; and drywall used by the applicant, and any contractors and subcontractors have undergone all manufacturing processes domestically.
- **Regarding Waiver:** While the applicant and all contractors and subcontractors of the applicant may waive the 55% cost requirement for all electronics equipment used in fiber optic technologies, (as proposed by NTIA and the Department of Commerce in August 2023)¹⁰, the applicant 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 equipment used in fiber optic networks:
 - Optical Line Terminals (OLTs) and Remote Optical Line Terminals (rOLTs)
 - OLT Line Cards
 - Optic Pluggables
 - Routers
 - Switches
 - Optical Amplifiers
 - Power Systems
 - Optical Network Terminals/Units (ONT/Us) and Optical Network Units

2.9.4 Secure and Trusted Communications Networks Act

Applicants are prohibited from obligating or expending loan or grant funds to procure or obtain, extend a contract to procure or obtain, or enter into a contract to procure or obtain equipment, services, or systems that use “covered telecommunications equipment” produced by:¹¹

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);
- Video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- Telecommunications or video surveillance services provided by such entities or using such equipment;

¹⁰ <https://www.commerce.gov/sites/default/files/2023-08/BEAD%20Waiver.pdf>

¹¹ See BEAD NOFO page 88 and 47 U.S.C. § 1608 and FCC Covered List at <https://www.fcc.gov/supplychain/coveredlist>.

- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the FBI, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a foreign country.

For the full list of “covered equipment or services” published by the FCC, Applicants should consult the published list available at <https://www.fcc.gov/supplychain/coveredlist>.

2.9.5 National Environmental Policy Act and Environmental and Historic Preservation Act

The National Environmental Policy Act (NEPA) and the National Historical Preservation Act (NHPA) require that NTIA analyze the potential environmental impacts of projects funded under the BEAD Program. NEPA analysis will be required for every project funded through the BEAD Program—regardless of who owns the land that must be accessed—and must be completed before any awarded project can begin. An expanded fact sheet on NEPA and NHPA can be found [here](#).¹²

Applicants must certify that they will comply with NEPA and NHPA and provide any required materials as a part of the application process. Preliminary awardees will be required to complete an environmental questionnaire during post-award as part of the grant agreement materials before any pre-construction activities may begin. Materials may include information beyond what is required as a part of the Proposed Project creation process, outlined in Section 4.1, such as:

- Detailed information on **how** each Proposed Project will be implemented. As an example, this may include details on ground disturbance area and depth and installation of features such as concrete pads, equipment sheds, or emergency generators with specified fuel storage capacity.
- **Maps and photos**, including ground-level and aerial photographs, with project boundaries, sites, routes, and activities clearly marked.

2.9.6 Labor Standards and Protection

Applicants must certify that they will comply with all applicable labor standards and protections. Furthermore, applicants must provide information on, among other related topics, how they plan to follow strong labor standards, such as wages and local hire provisions, past compliance with fair labor practices, and other information about their workforce or the workforce of their contractors and subcontractors. Section 3.6 details the information required beyond certification, which are required as part of the pre-application process.

2.9.7 Civil Rights Compliance

Applicants must agree by contract or other binding commitment to abide by the nondiscrimination requirements set forth in the following legal authorities, to the extent applicable, and to acknowledge

¹² NTIA, “Environmental & Historical Preservation Fact Sheet.” December 2022, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-12/EHP_Fact_Sheet_2022.pdf.

that failure to do so may result in cancellation of any award and/or recoupment of funds already disbursed:

- Title VI of the Civil Rights Act
- Title IX of the Education Amendments of 1972
- The Americans with Disabilities Act of 1990
- Section 504 of the Rehabilitation Act of 1973
- The Age Discrimination Act of 1975
- Any other applicable non-discrimination law(s)

2.10 Minority Business Enterprises/Women's Business Enterprises/Labor Surplus Area Firms Inclusion (MBE/WBE/LSA)

Applicants must certify and information demonstrating an actionable plan to comply with this requirement and subcontract to MBE/WBE/LSAs when possible. Supporting materials that clearly exhibit implementation of such plans will be required as part of the ongoing reporting and compliance procedures. To assist in this process, the West Virginia Small Business Development Center (SBDC) will be developing a list of MBE/WBE/LSA vendors and suppliers across the State. The Small Business Administration (SBA) and Minority Business Development Agency (MBDA) may also offer assistance. Applicants must take affirmative steps to ensure compliance with this requirement, including, but not limited to:

- **Solicitation Lists:** Placing qualified small and minority businesses and women's business enterprises on solicitation lists. Example: Applicants may incorporate the list provided by the SBDC into their solicitation lists.
- **Potential Source Solicitation:** Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources. Example: Applicants can solicit required goods or services from those listed as offering them in the SBDC's database.
- **Division of Total Requirements:** Whenever economically feasible and in compliance with procurement regulations, dividing total requirements into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises. Example: Secure assistance from the SBA, MBDA, and SBDC to divide requirements into smaller tasks or quantities and identify MBE/WBE/LSAs that can participate.
- **Establishing Delivery Schedules:** Establishing delivery schedules that encourage participation by MBEs and WBEs. Example: Work directly with some of the MBE/WBEs included in the SBDC's database to establish delivery schedules that encourage their participation.

2.11 Compliance with Grant Distribution Agreement and Cooperation with Subgrantee Obligations

Subgrantees must enter into a Grant Distribution Agreement (GDA) with WVDED. Additionally, subgrantees must comply with reporting requirements and post-award monitoring to maintain continued eligibility for disbursement of grant funds. See Sections 7.10 and 7.12, respectively, for more details.

3. Pre-Application

The pre-application process will collect information about applicants that will allow WVDED to assess the eligibility and capacity of applicants to receive grant funding. WVDED will also collect information that will be used during the scoring process but is not specific to any one individual project. For instance, the affordability component applies to all Proposed Projects from a given applicant. Participation in the pre-application phase is required for applicants to participate in the full application phase. Table 1 summarizes the categories of information.

Table 1: Summary of Pre-Application Requirements

Category
Company and Contact Information
Eligibility Check
Match Capacity Check
Letter Committing to Letter Credit or Performance Bond
Risk Rating
Pro forma and Cost Factors
Affordability (Service Tiers)
Fair Labor Practices
Certification of Compliance with Relevant Laws and Regulations

3.1 Company and Contact Information

Applicants must provide a complete set of relevant company information and any accompanying materials and information to demonstrate the accuracy of that information. This includes, at a minimum:

- legal company name and any relevant doing business as (DBA) names;
- Federal Employer Identification Numbers (FEIN);
- address of the company headquarters and other key locations;
- company ownership information;
- type of business entity (e.g., corporation, partnership, LLC);
- company history and brief overview;
- Certificate of good standing in West Virginia;
- Letter of Good Standing from the West Virginia Tax Division;
- the contact information of the authorized individual submitting the pre-application on behalf of the applicant, including name, position/title, phone number, and email address; and
- Unique Entity Identifier (UEI) and System for Award Management (Sam.gov).

Note that each applicant must obtain a UEI and provide it to WVDED, but applicants are not required to complete the full SAM registration to obtain a UEI.¹³

¹³ See 2 CFR § 25.300. For more information on the establishment of a UEI, please visit <http://www.sam.gov>.

Applicants must also provide company ownership information consistent with 47 C.F.R. § 1.2112(a)(1)-(7).

3.2 Financial History and Audited Statements

Each applicant must submit financial statements from the prior fiscal year that are audited by an independent certified public accountant. If the applicant 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 before WVDED announces provisional awards.

3.3 Technical and Operational Experience

Applicants must certify and demonstrate that they are technically qualified to complete and operate any potential project and that they will use an appropriately skilled workforce. To demonstrate this, applicants must provide a narrative description and supporting materials demonstrating experience carrying out projects of a manner and size comparable to the largest project for which the applicant anticipates applying. These should include, if possible, a history of participation and successful completion of grant programs, whether federal, state, or local. Supporting material must include, but is not limited to:

- evidence that the project was carried out successfully and is being operated in accordance with the terms of the build;
- information on the project cost and scale; and
- information on the workforce used throughout the duration of the project, including whether subcontractors were used.

They must demonstrate the ability to produce and carry out a disaster recovery plan by providing an existing example. If available, applicants should provide an example of a plan focused on West Virginia; otherwise, example(s) from other states are acceptable.

Applicants must also demonstrate that they will have and use an appropriately skilled and credentialed workforce. In addition to providing an organizational chart detailing all parent, subsidiary, and affiliate entities, applicants must provide a narrative describing, at a minimum:

- 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;
- details on the applicant's organizational capacity to operate the network, including the number of managers, line workers, and any other staff involved—along with accompanying job titles and credentials held by relevant staff;
- 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;

- narrative detailing experience and qualifications of key management and relevant organizational policies;
- demonstration of the relevant personnel, knowledge of, and ability to meet resiliency and scalability requirements, as discussed in Section 2.9;
- 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.

If the project workforce or any applicant's, contractor's, or subcontractor's workforce is not unionized, applicants must also provide with respect to the non-union workforce:

- The job titles and size of the workforce (FTE positions, including for contractors and subcontractors) required to carry out the proposed work 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., 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.

The above information must be scaled to the largest project size covered by the pro forma, discussed in Section 3.5. For example, when describing organizational capacity and personnel, applicants must do so as if planning to construct the maximum pro forma size.

Applicants must attest to and prove that they have provided the following for at least two consecutive years prior to the pre-application date or that it is a wholly owned subsidiary of such an entity:

- Voice service,
- Broadband service, and/or
- Electric transmission or distribution service.

If the applicant has provided voice and/or broadband service, it must certify that it has timely filed Commission Form 477s and the Broadband DATA Act submission. If the applicant has not, it should provide any explanations for pending, missing, or otherwise improperly submitted Forms. Applicants that have operated only an electric transmission or distribution system must submit qualified operating or financial reports that they have filed with relevant financial institutions for the relevant period along with certification that the submission is a true and accurate copy of the reports.

3.4 Financial Capacity

In addition to the financial audit and letter of credit or performance bond required as a part of the Eligibility Check discussed in Section 2.7, applicants must provide the maximum amount of non-grant funds that they expect to have available to support awarded projects in West Virginia, explain the source of these funds, and certify that this is accurate to the best of their knowledge. WVDED will compare this figure to the letter of credit or performance bond also required of applicants and discussed in Section 2.7. Should WVDED determine that there are significant differences between the guaranteed minimum amount listed in the letter and the estimated amount provided by the applicant at this stage, it may jeopardize the applicant's ability to win projects. Applicants will also be required to disclose information on any applications that they or their affiliates have submitted or plan to submit for other network deployment projects supported by public funds.

3.5 Pro Forma and Cost Factors

Applicants must submit two or three preliminary pro forma cash flows for a 10-year period representing hypothetical awards of varying scale. Applicants should refer to the pro forma workbook provided by WVDED for instructions how many pro forma to complete, what size they should be, and all other information related to this workbook. Note that each pro forma represents a set of projects together, not an individual Project. For example, the Maximum pro forma represents the largest set of projects that the applicant would be able and willing to perform on if awarded.

As a part of this, applicants must state, define, and justify using documented evidence of key cost factors that they will use to develop Proposed Project budgets during the full application phase and the pro forma during the pre-application phase. These cost factors include, but are not limited to, key revenue and take-rate assumptions and deployment costs on a per-location or per-mile basis. Applicants will use a workbook provided by WVDED to generate these cost factors.

Also using the pro forma workbook, applicants must also demonstrate that they have non-grant capital sources that the pro forma indicates would be required, as well as sources to fund any initial operating losses, if applicable. These preliminary pro forma cash flows will be used to make an initial determination about applicant financial sustainability and as part of its determination of applicant Financial and Relative Capacity.

3.6 Labor Standards and Protection

Applicants are required to comply and demonstrate compliance with all applicable labor standards and protections. In addition to certifying that they will comply with all such standards and protections, as noted in 2.10.4, applicants must describe how they will follow strong labor standards such as wages and local hire provisions. The following information is required from applicants:

- The applicant's record of past compliance with federal labor and employment laws, specifically regarding broadband development projects in the last three years. This includes the applicant's historical use of contracting and subcontracting arrangements, including staffing plans, and at

least one example of each contractor and subcontractor's past performance in the context of a similar project;

- A certification from an Officer/Director-level employee (or equivalent) of the applicant evidencing consistent past compliance with federal labor and employment laws by the applicant, as well as all contractors and subcontractors; and
- Written confirmation that the applicant discloses any instances in which it or its contractors 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.

For applicants without a record of labor and employment law compliance, WVDED shall, in accordance with the NTIA's BEAD Notice of Funding Opportunity (NOFO), allow such applicants to make specific, forward-looking commitments to strong labor and employment standards and protections.¹⁴

Furthermore, applicants must provide information detailing how the applicant 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.
- How the applicant 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.
- Attestation that they will permit workers to create worker-led health and safety committees that management will meet with upon reasonable request.

Applicants must commit to and demonstrate where applicable that they and their contractors and subcontractors will meet any standards required by NTIA or under West Virginia's Initial Proposal Volume 2.

3.7 MBE/WBE/LSAs

Applicants must provide a plan of action demonstrating that they will take all necessary affirmative steps regarding subcontractors to ensure MBW/WBE/LSAs are used when possible, as required in in Section 2.11. This plan may include, but is not limited to:

- Formal commitment letters confirming the organization's commitment to supplier diversity;
- An outreach plan for awareness and providing information and contacts related to supplier diversity, including information sessions (virtual or in-person), email campaigns, social media posts, or other activities;

Deployment/enhancement of the applicant's internal supplied diversity program demonstrating applicant commitment to supplier inclusion and equitable procurement practices.

¹⁴ See BEAD NOFO, p. 43.



4. Full Application

During the full application phase, applicants will detail the specific projects that they are proposing for grant funding in the specific areas that they seek funding.

4.1 Creating Proposed Projects

4.1.1 Use of Target Areas and Target Regions

WVDED will publish a map and list of Target Areas and Target Regions at broadband.wv.gov at least 45 calendar days prior to the deadline to submit full applications. Applicants will use the Target Areas to create “**Proposed Projects**” for which they will provide service. Applicants must use Target Areas as the building blocks to define where Proposed Projects would provide service to Target Locations. A Target Area is the smallest geographic unit that an applicant may use to define a Proposed Project. Applicants must follow five rules when creating Proposed Projects from Target Areas that are listed and illustrated below. Applicants may submit more than one set of Proposed Projects, each of which must be self-contained and follow the five rules independently of the other sets.

1. If an applicant proposes to include any Target Area within a Target Region in a Proposed Project, it must include all Target Areas in that Target Region in a Proposed Project. The applicant may, however, choose to propose that the Target Areas within the Target Region be in one Proposed Project or distributed among multiple Proposed Projects.
2. Proposed Projects may not overlap one another.
3. Dependent Projects are not allowed.
4. Proposed Projects may not contain more than one Target Region.
5. Target Areas containing only CAI Target Locations must not be in a Proposed Project with any Target Areas containing unserved or underserved Target Locations. Target Areas that contain a mix of CAI and non-CAI Target Locations may be in a Proposed Project with other Target Areas containing unserved or underserved Target Locations.

4.1.2 Examples of Valid Proposed Projects

For the following demonstration of the Proposed Project creation process and above rules, consider the following two Target Regions, illustrated in Figure 2. The first comprises three Target Areas: Area R, Area G, and Area B. The second comprises Area X, Area Y, and Area Z.

Figure 2: Example Target Regions and Target Areas



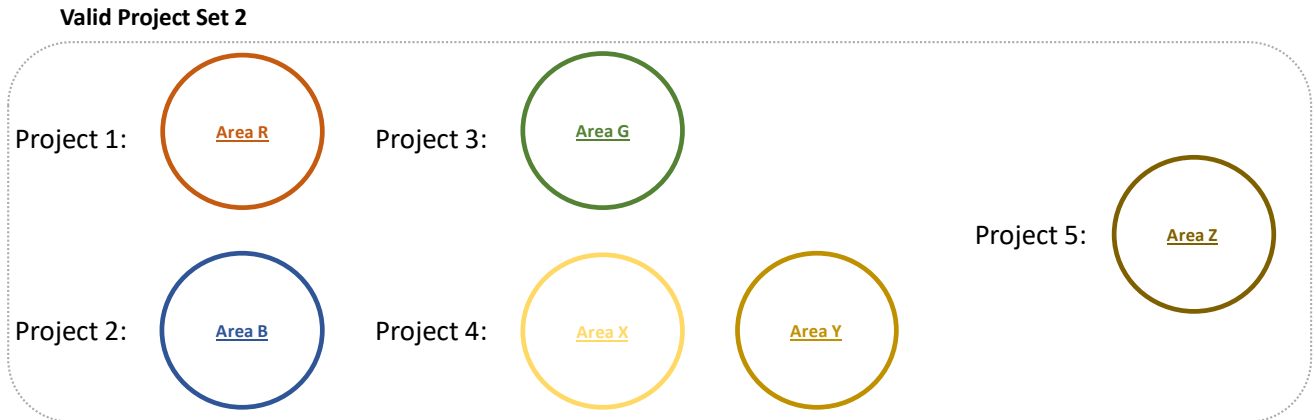
Applicants may group Target Areas within a single Region together into Proposed Projects in any way they see fit, provided they comply with the rules. Figure 3 offers four examples of valid Proposed Project sets in a situation where an applicant only wishes to submit Proposed Projects for Target Region 1. **In each of the illustrated examples throughout the remainder of this section, the gray-dashed boxes represent sets of projects.** For instance, the gray boxes in Figure 3 represent sets of valid Proposed Projects specific to Target Region 1. Note how each set contains all of the Target Areas in the given Target Region in some form.

Figure 3: Examples of Valid Proposed Project Sets for Target Region 1 Only



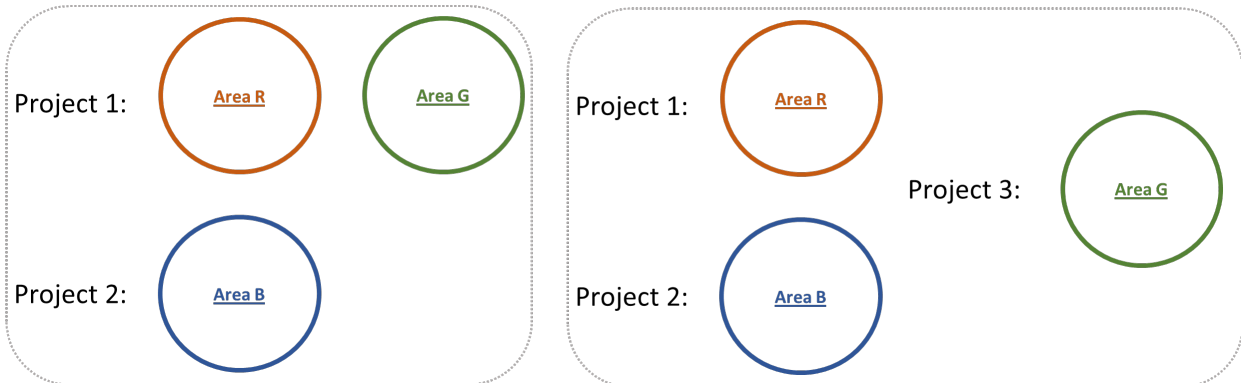
If, for example, the applicant also wishes to propose Projects for both Target Region 1 and 2, Figure 4 provides two examples of valid Proposed Projects. Again, note how because the applicant seeks to bid on at least one Target Area in the two Target Regions, it must include all Target Areas for both Target Regions in its set of Proposed Projects.

Figure 4: Examples of Valid Proposed Project sets for Target Regions 1 & 2



Note that if Target Area B only contained CAIs and Areas R and G did not, then Figure 5 would be the only examples of valid arrangements for Target Region 1 because Target Area B must be in its own Proposed Project.

Figure 5: Examples of Valid Proposed Project Sets for Target Region 1 if Only Area B Contained Solely CAIs



4.1.3 Examples of Invalid Proposed Projects

Figure 6 offers two examples of projects that break the first rule because they fail to include all the Target Areas within the Target Region in at least one Project.

Figure 6: Examples of Failure to Comply with Rule #1



Figure 7 demonstrates a breach of the second rule: Proposed Projects from a given applicant may not overlap.

Figure 7: Example of Failure to Comply with Rule #2 within one Target Region



Figure 8 demonstrates a failure to comply with the third rule, which states that dependent Projects are not permitted.

Figure 8: Example of Failure to Comply with Rule #3

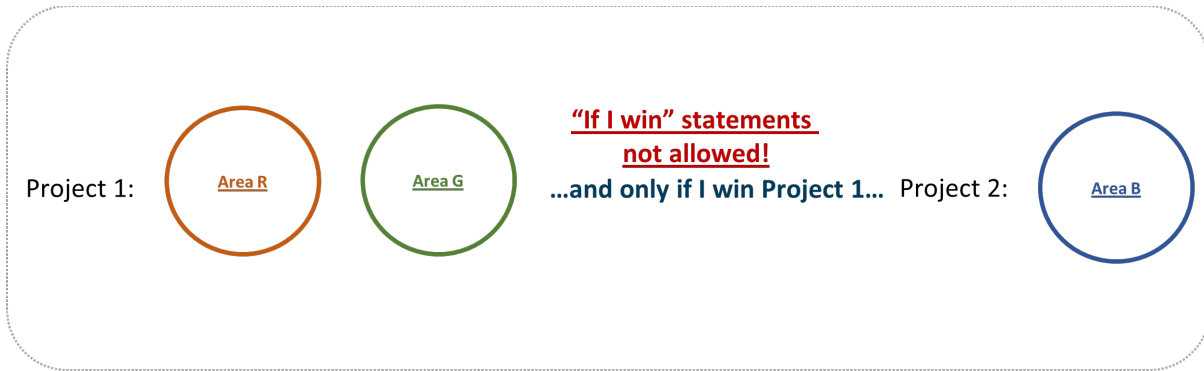
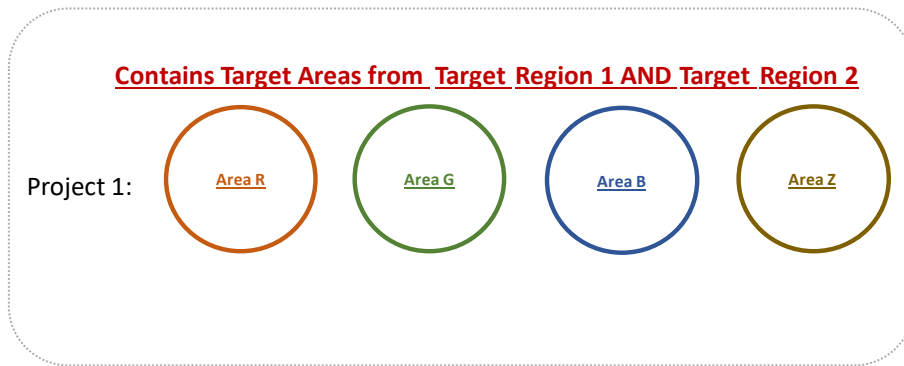


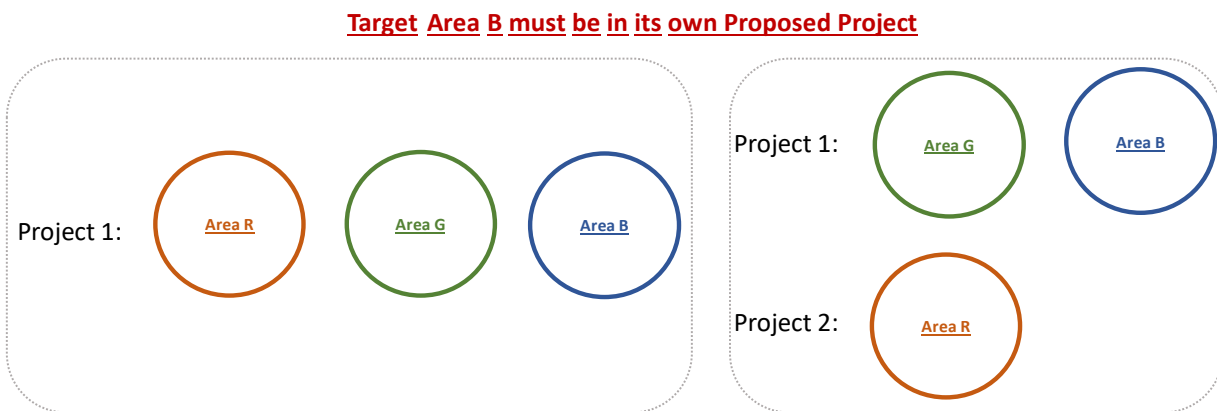
Figure 9 provides an example of failure to comply with the fourth rule, as Proposed Projects may not contain Target Areas from more than one Target Region.

Figure 9: Example of Failure to Comply with Rule #4



Lastly, if Area B were to once again be assumed to be the only Target Area comprised solely of CAIs in Target Region 1, then the Proposed Project sets in Figure 10 would not be permitted because they mix a CAI-only Target Area with Target Areas that do not contain only CAIs.

Figure 10: Example of Failure to Comply with Rule #5



4.1.4 Selection Process to Provisionally Award Projects and Avoid Overlaps

Each of the Proposed Projects will be scored according to the scoring criteria discussed in 5.2.4. If there is only one applicant with acceptable Projects, then WVDED will provisionally award those Projects. If there is more than one and none supersede the others by being the only priority Project, a list will be generated of possible combinations of the Proposed Projects to cover the entire Target Region without overlapping projects. Following this, WVDED will combine the scores of the Projects that comprise the arrangement and will then select the arrangement with the highest weighted score. The score is weighted based on the number of Target Locations in each Project.

4.2 Full Application Information

Applicants must submit accompanying information to support their Proposed Projects.

4.2.1 High-Level Designs and Technical Capabilities

Applicants must submit high-level designs that connect all Target Locations within the Proposed Project. Applicants may include non-Target Locations or routes that fall outside the Target Areas included in the Proposed Project in their designs if the non-Target Locations or routes outside the Target Areas are clearly required to connect the Target Locations to a new or existing network. The costs of routes that fall into this category may be included in the Project grant costs provided they also fall into the eligible category. Applicants may also include routes or non-Target Locations that are not expressly required to connect the Target Locations in a given Target Area, but the associated costs may not be included in project grant costs and should be categorized as “other costs” in the budget detailed in Section 4.2.2.

In addition to the high-level designs, applicants must provide information on the speed of the network and other technical capabilities in the manner prescribed by WVDED in the application portal and any workbooks. This includes, at a minimum:

- Broadband service technology used, such as end-to-end fiber, Coax/Cable (DOCSIS 3.0, 3.1, 4.0), licensed fixed wireless, etc.;
- Expected speed and latency of the network at interconnection points; and
- Information on network topology.

If an applicant plans to demonstrate scalability and resiliency beyond the minimum requirements discussed in Section 2.9, it must provide sufficient information in the application portal and provided workbook(s) that demonstrates such attributes.

All information and materials must be certified by a professional engineer, stating that the proposed network can deliver broadband service that meets the requisite performance requirements to all locations served by the Project.

4.2.2 Proposed Project Budget

Applicants must submit Proposed Project budgets using the form provided by WVDED. Each budget must contain the cost factors used in its development. If the cost factors used in these budgets deviate from the cost factors used in the pre-application pro forma discussed in Section 3.5 by 10% or more then the applicant must provide a detailed explanation for why this is the case and submit an updated Universal and Cost Factor Workbook. If the only cost factors that change are those related to pole attachment and make ready, the applicant will only need to provide an explanation for the change and not an updated Universal and Cost Factor Workbook.

As a part of the proposed budget, applicants are permitted to include a contingency budget for up to 12% of the proposed grant amount. If including a contingency budget, applicants must provide an explanation of factors that make the Proposed Project more likely than not to use a contingency budget.

Proposed Project Grant Request, Proposed Match and Other Funding Sources

Within each Project budget, applicants must provide the:

- Project grant cost, i.e., the amount of funding requested from the State;
- proposed funds match amount, i.e., the amount of funding that the applicant will provide as a match, including a detailed source of the match; and
- other Project costs not covered by the first two items.

WVDED may choose to not request Other Project costs during the Full Application stage and instead request them as a part of the Potential Award Pro Forma, or both. Other Project costs include ineligible expenses, inclusive of expenses related to routes that are not expressly required to connect Target Locations. If an application includes other Project costs, the applicant must detail the source(s) of this funding and the amount each source will provide.

Applicants may propose Projects that, in the aggregate, exceed their demonstrated Relative Capacity and Financial, discussed in Section 3.3 and 3.4. However, applicants will not be eligible for award of Projects in excess of these Capacity limits. This process is further examined in Section 5.3.1.

Applicants must commit a match of at least 25% of the total cost for each of its Proposed Projects. However, WVDED may waive a portion of the match that is proportionate to the number of Target Locations that fall within High-Cost areas, as defined in Section 60102(a)(2)(G) of the Infrastructure Investment and Jobs Act of 2021. To do this, WVDED will first determine what percentage of the total number of Target Locations in a Proposed Project are High-Cost Locations. WVDED will then reduce the applicant's proposed total Project cost by this percentage (solely for the match calculation) and will require the 25% match on this resulting amount. This method is in line with NTIA's allowance for waiving match in "certain circumstances described herein (including projects in designated "high-cost areas'..."¹⁵

To illustrate this more thoroughly, consider a Proposed Project with the following specifications:

- Target Locations: **1,000**
- Total proposed cost to deploy services to the Target Locations: **\$10,000,000**

¹⁵ NTIA, NOFO, <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf>, page 20.

- Number of High-Cost Locations in the Project: **100**

The 100 High-Cost Locations account for 10% of the total 1,000 Target Locations in the Proposed Project. As such, WVDED would require match on 10% less of the proposed total cost from the applicant of \$10,000,000, equating to \$9,000,000. The minimum match required of the applicant is therefore \$2,250,000:

$$\$9,000,000 \times 25\% = \$2,250,000$$

As another example, consider a Proposed Project with the following specifications:

- Target Locations: **1,000**
- Total proposed cost to deploy services to the Target Locations: **\$11,000,000**
- Number of High-Cost Locations in the Project: **200**

The 200 High-Cost Locations account for 20% of the total 1,000 Target Locations in the Proposed Project. As such, WVDED would require match on 20% less of the proposed total cost from the applicant of \$11,000,000, equating to \$8,800,000. The minimum match required of the applicant is therefore \$2,200,000:

$$\$8,800,000 \times 25\% = \$2,200,000$$

4.2.3 Projects with Mixed Unserved and Underserved Target Locations

If a Proposed Project contains more than 80% unserved locations, then the applicant will only be required to submit one budget and set of high-level designs. However, if the Project contains any other mix of unserved and underserved locations, two sets of application materials are required: one for all locations and an alternative one for solely the unserved locations.

4.2.4 Project Timeline

Applicants must provide a construction and deployment timeline, including milestones for implementation and a capital investment schedule, and certify that they will meet them. Milestones must include, at a minimum:

- Detailed network design creation;
- Environmental and regulatory reviews;
- Construction in all its phases;
- Service provision and;
- Project completion.

Construction must be able to be completed and ready to serve all customers within four years from award. WVDED may extend this deadline in limited circumstances only after consultation with and approval by NTIA. Per NTIA's Conditional Limited Programmatic Waiver and Clarification of Professional Engineer Certification, the requirement that an applicant submit a "capital investment schedule evidencing

complete build-out and the initiation of service within four years of the date on which the entity receives the subgrant” that is “certified by a professional engineer” is waived.¹⁶ However, a professional engineer is still required to certify the remaining elements of the PE Certification Requirement.

4.2.5 Demonstration of Community Support and Community Impact

Applicants may demonstrate that their Proposed Projects have community support and impact, and they will receive a score based on this, per the scoring details in Section 5.2.4. Community support may be demonstrated in multiple ways, such as active partnerships, planning, or financial support, but at a minimum must include a formal expression of support from the leadership of the proposed communities and applicants must provide a narrative describing the planned coordination efforts and intended impact. See the scoring criteria in Section 5.2.4 for more details.

Similarly, applicants must also demonstrate whether their Proposed Projects will have an impact on the local community. As also detailed in Section 5.2.4, the following factors contribute to community impact:

- The Project would provide service that supports a major economic development initiative identified by a regional planning or development council or economic development authority, or the Project supports or implements a recent broadband planning initiative in a county or region.
- The Project participates in or otherwise supports WVDED and/or other State of West Virginia workforce development initiatives, including equitable workforce development and job quality.
- The Proposed Project contains areas of low or moderate income, high poverty, high unemployment, or economic distress.
- The Project supports a credible plan to increase broadband adoption and improve digital literacy in the affected communities, especially among populations that have experienced inequities in access to work, education, and health care or health information.
- The Project is coordinated with or builds upon other, nearby non-BEAD deployment projects that will provide regional benefit.
- The Project has strategic partnerships involved in the proposed target area(s), for example, electric utilities, universities, and federal, state, or local agencies.
- The Project supports adopted state plans or priorities not otherwise addressed by other prioritization factors.

¹⁶ NTIA, BEAD Program – Conditional Limited Programmatic Waiver and Clarification of Professional Engineer Certification, March 7, 2024, <https://broadbandusa.ntia.gov/funding-programs/policies-waivers/BEAD - Conditional Limited Programmatic Waiver and Clarification of Professional Engineer Certification>.

5. Application Review and Award

5.1 Department Information Requests

During the pre-application or full application review process, WVDED (including through its contracted technical reviewers) may request clarification from applicants regarding information submitted, additional supporting documentation, or opportunities to cure minor deficiencies related to eligibility criteria or factors affecting an application’s priority or non-priority status. WVDED may also make requests for clarification or additional supporting documentation related to project prioritization factors.

WVDED may initiate a request via an e-mail message to the primary contact listed in the application. Requests will include a deadline to respond to the request, which will typically be between one and four business days. Responses to requests will become part of the application. Requests related to some elements of a proposal may take longer than this timeframe, which may result in deferral or denial of a funding decision for the Project.

WVDED may review submitted applications based solely on information submitted by the applicants by the application deadline, without making additional requests. If made, requests will be to further WVDED’s interests in considering a broad range of applications and bringing improved broadband to as many West Virginia Target Locations as possible in a technically sound and cost-effective manner.

Applicants should not rely on an opportunity to supplement or clarify information after the application deadline and should take care to include all information requested by the application in a clear and understandable manner.

5.2 Project Ranking

Provisional awards will be made from among Proposed Projects and applicants meeting program eligibility requirements (“Eligible Projects”). WVDED seeks to make a provisional award in all Target Areas with an Eligible Project, subject to the limitation of the overall program budget. WVDED will rank Proposed Projects and use ranking to select a provisional subgrantee when there are multiple Eligible Projects for the same Target Areas.

5.2.1 Ranking Levels

When there are multiple Eligible Projects for the same Target Area, WVDED will provisionally award Projects using the following ranking levels:

- First, to “Priority Projects,” i.e., those that propose to use end-to-end fiber technology,
- Second, to “Non-Priority Projects” i.e., those that propose to use a Reliable Broadband Service Technology other than end-to-end fiber technology, and
- Third, to “Non-Priority Projects” i.e., those that do not propose to use a Reliable Broadband Service Technology but otherwise meet the program technical parameters.

Reliable Broadband Service technologies is defined as broadband service using:

- fiber-optic technology;
- cable modem/hybrid fiber-coaxial technology;
- digital subscriber line (DSL) technology;
- terrestrial fixed wireless technology utilizing entirely licensed spectrum or using a hybrid of licensed and unlicensed spectrum

5.2.2 Selection Among Projects with Different Ranking Levels

Eligible Projects with a greater ranking level will be preferred to those that have a lesser ranking level, with some limited exceptions.

In the event that 1) all Eligible Projects competing for a Target Area exceed the Extremely High Cost Threshold (see Section 5.3.2), and 2) at least one eligible applicant proposing a Non-Priority Project has a grant cost per location lower than all eligible Priority Projects, WVDED will provide all applicants proposing Priority and Non-Priority Projects an opportunity not exceeding five business days to revise the cost of their Projects to reduce the subsidy required. If no revised Priority Projects are lower than either the Extremely High-Cost Threshold or the Projects of Non-Priority applicants, WVDED will make a provisional award to a Non-Priority applicant. WVDED will only make a provisional award to an applicant not utilizing a Reliable Broadband Service technology if no other eligible applicants can provide service at or below the Extremely High-Cost Threshold.

Notwithstanding this process, WVDED may allow a provisional award to an individual Proposed Project that exceeds Extremely High-Cost Threshold if the applicant does not exceed the Extremely High-Cost Threshold on average across all of an applicant's Proposed Projects in a single Target Region. WVDED may do this in cases where elimination of the individual Proposed Project would result in either an orphaned Target Area, i.e., one that that receives no award, or elimination of a Priority Project due to overlaps with a Non-Priority Project, or elimination of a Project with Reliable Broadband Service technology due to overlaps with a Project not proposing a Reliable Broadband Service technology.

5.2.3 Selection Among Projects with the Same Ranking Levels

If there are multiple Eligible Projects in a Target Area with the same ranking level, the score of the Eligible Projects will determine the rank of competing Projects within the level. Both Priority and Non-Priority Projects may achieve a score up to maximum of 200 points, awarded based on the Proposed Project's performance relative to the scoring criteria. The criteria differ slightly between Priority and Non-Priority Projects.

Category	Criteria	Max points	
		Priority	Non-Priority
Primary	Minimum BEAD Program Outlay	100	100
Primary	Affordability	25	25
Primary	Compliance with Fair Labor Practices	25	25
Secondary	Speed to Deployment	10	10
Secondary	Demonstrated Community Impact and Support	20	20
Secondary	Resiliency and Scalability	20	NA
Secondary	Speed of Network & Other Technical Capabilities	NA	20
Total		200	200

WVDED will evaluate the scores of competing Eligible Projects with the same ranking level within the same Target Region. WVDED will score each of the Proposed Projects and normalize them based on the number of Target Locations in each. WVDED will generate a list of possible combinations of Eligible Projects to cover the entire Target Region without any overlapping Target Areas. WVDED will then combine the scores of the Eligible Projects within each combination and will then select the combination with the highest weighted score as that Target Region’s provisionally awarded Projects.

5.2.4 Scoring Criteria

Eligible Projects may receive scoring points using the following criteria:

Minimum BEAD Program Outlay	Max points	
Category: Primary	Priority: 100	Non-Priority: 100
<p>The difference between zero and the sum of the CostQuest Associates FTTH Greenfield deployment NPV estimates for all of the Target Locations contained within a Proposed Project equals the expected total BEAD program outlay. If the expected total BEAD program outlay is less than or equal to zero—meaning the aggregate NPV was positive—WVDED will consider the expected total BEAD outlay for the Proposed Project to be \$0. Therefore, the minimum expected total BEAD outlay is considered to be \$0.</p> <p>WVDED will then divide the total BEAD funding that the applicant requests by this calculated expected total BEAD outlay to establish a percentage figure. WVDED will then assign points for this category as follows: Projects falling below 50% of the expected BEAD outlay will be rounded to 50%; projects falling above 150% of the expected BEAD outlay will be rounded to 150%. For every percentage point less than 150%, one point will be awarded, up to and including 50%. If the expected total BEAD outlay for the Proposed Project is \$0, WVDED will award the full 100 points to applicants that request \$0 of BEAD funding for the Project and zero points to applicants that request any amount of BEAD funding for the Project.</p> <p>As an example, if the sum of the CostQuest Associates FTTH Greenfield deployment NPV estimates for all of the Target Locations in a Proposed Project equals -\$1,000,000 (i.e., negative \$1,000,000), and an applicant proposes a total BEAD funding amount of \$750,000, then the resulting percentage will be $\\$750,000/\\$1,000,000 = 75\%$. The applicant will then earn $150-75 = 75$ points for the Proposed Project. If the applicant proposed a total BEAD funding amount of \$450,000, the percentage would be 50%</p>		

because the original percentage of $\$450,000/\$1,000,000 = 45\%$ would be rounded to 50%, as described above. In this case, the applicant would earn $150-50 = 100$ points for the Proposed Project.

Affordability	Max points	
Category: Primary	Priority: 25	Non-Priority: 25
<p>Applicants seeking points from this criterion shall submit the prices for plans that they plan to offer all residential Target Locations in their Target Areas. Affordability will be evaluated using the price of 1/1 Gbps service for Priority Projects and 100/20 Mbps service for Non-Priority Projects.</p> <p>These plans must have no data cap or data overage charges, inclusive of all fees, taxes, and charges. Furthermore, applicants must certify that they will adhere to the following rules for these plans:</p> <ul style="list-style-type: none"> • The plan must be offered for ten years from service turn-up; • The latency for these plans must not exceed 100 milliseconds; • WVDED will permit annual price increases commensurate to year-over-year changes in the Consumer Price Index for All Urban Consumers: All Items Less Food & Energy (also known as Core CPI) as defined by the U.S. Bureau of Labor Statistics; and • WVDED will permit cost changes due to new or increased government mandated taxes and feed imposed on the consumer, not providers. <p>These prices shall be rounded by WVDED to the nearest whole number (e.g., \$65.99 would be rounded to \$66 for the purposes of this calculation). WVDED shall award points according to the following schedule:</p> <ul style="list-style-type: none"> • Priority Project Scoring: One point for every \$2 below \$115 per month for plans offering 1/1 Gbps or better (max 25 points) • Non-Priority Project Scoring: One point for every \$2 below \$85 per month for plans offering 100/20 Mbps or better (max 25 points) 		

Compliance with Fair Labor Practices	Max points	
Category: Primary	Priority: 25	Non-Priority: 25
<p>Applicants shall be awarded 25 points for demonstrating a track record of and plans for future compliance with Fair Labor Practices.</p> <p>Applicants without a demonstrated track record of Fair Labor Practice compliance shall be awarded up to the full 25 points based on a determination of the strength of their Fair Labor Practice compliance plan.</p>		

Speed to Deployment	Max points	
Category: Secondary	Priority: 10	Non-Priority: 10
<p>To qualify for any points in this section, applicants must commit to providing WVDED its final network design(s) within six months of award.</p> <p>In addition to the above requirement, WVDED shall award points to Projects that have a credible plan to deployment for the timeframes listed in the below schedule. Note that WVDED will exclude periods of expected delay, as defined by WVDED, such as those related to pole attachment approvals, design approval, federal environmental clearances, and other tasks at WVDED's discretion.</p>		

Timeline for deployment (less than or equal to)	Points	
	Priority	Non-Priority
18 months	10	10
24 months	7	7
36 months	5	5

Demonstrated Community Impact and Support	Max points	
Category: Secondary	Priority: 20	Non-Priority: 20
<p>WVDED intends to prioritize projects with demonstrated community impact and/or support. Factors that contribute to high community impact include:</p> <ul style="list-style-type: none"> • The project would provide service that supports a major economic development initiative identified by a regional planning or development council or economic development authority, or the project supports or implements a recent broadband planning initiative in a county or region (5 points) • The project participates in or otherwise supports WVDED and/or other State of West Virginia workforce development initiatives, including equitable workforce development and job quality. (5 points) • The Target Area’s location in an area of low or moderate income, high poverty, high unemployment, or economic distress. (3 points) • The project supports a credible plan to increase broadband adoption and improve digital literacy in the affected communities, especially among populations that have experienced inequities in access to work, education, and health care or health information. (3 points) • The project is coordinated with or builds upon other, nearby non-BEAD deployment projects that will provide regional benefit. (3 points) • The project has strategic partnerships involved in the proposed Target Area(s), for example, electric utilities, universities, and federal, state, or local agencies. (3 points) • The project supports adopted state plans or priorities not otherwise addressed by other prioritization factors. (3 points) • The project has a formal expression of support from the leadership of the proposed communities served. (2 points) • The applicant has obtained a meaningful financial contribution, as determined by WVDED, from proposed communities to be served. (3 points) <p>No more than the maximum number of points shall be awarded under this criterion. For instance, if a project is scored to receive 25 points under these formulae, then it shall be awarded the maximum available number of 20 points.</p>		

Resiliency and Scalability	Max points	
Category: Secondary	Priority: 20	Non-Priority: NA
<p>Priority projects demonstrating resiliency and scalability, as defined by WVDED, may receive up to 20 points in this criterion. Projects will earn these points according to the schedule detailed below.</p>		

Applicants proposing an end-to-end fiber technology will receive points for five categories of assessment and according to how well resiliency and/or scalability are demonstrated in each. To generate the total number of points for this entire criterion, WVDED will add up the points in each of the categories. The categories are:

- Technology (maximum of 5 points),
- Network Topology (maximum of 5 points),
- OSP Design (maximum of 5 points),
- Capacity Design (maximum of 5 points), and
- Supplemental Mobile Network (maximum of 20 points).

As an example, applicants can earn a maximum of five points for the Technology category of this criterion. One way to earn these five points in this category is by demonstrating a network that comprise 80% or more of technology components listed in the associated “Best” activities column. Applicants can also earn all five points by including agreements with third parties for wholesale transmission capacity. Note that the entire number of points for the Technical category will not exceed five points.

No more than the maximum number of points, 20 points, shall be awarded under this criterion. For instance, if an applicant earns five points for the Technology category and 20 points for the Supplemental Mobile Network category, they will only receive 20 points under this criterion.

Category	Scoring Criteria and Definitions		
Technology (Maximum of 5 points)	Projects will earn up to 5 points according to the following schedule:		
	% of network using this level of components		Points
	Best	Good	
	>= 80%	=< 20%	5
	>= 50%	<= 50%	3
	< 50%	>= 50%	2
< 50%	< 50%	0	

Best

- Fiber: Active ethernet
- Fiber: XG-PON, XGS PON and NG-PON or better.
- Fiber: 10G EPON and NG-EPON or better

Good

- GPON
- EPON

Applicants that include in their applications agreements with third parties for wholesale transmission capacity will be awarded all five points from this category of criterion if they also commit to the following:

- infrastructure in Target Areas with CAIs must include at least one interconnection point that is within 500 feet of each CAI; and
- infrastructure in all Target Areas must include at least one interconnection point for each segment of no more than 0.5 route miles that is within 500 feet of a road that is classified by the U.S.

Department of Transportation as either a collector road or non-controlled access arterial road.

Network Topology
(Maximum of 5 points)

Networks that are designed using a topology listed under Best will earn five points. Networks designed using a topology under Good will earn three points. Projects with topologies that fall outside of these Good and Best will earn zero points.

Best

- Horseshoe (Rainbow) – Node / Cabinet is connected by two separate paths, but each path goes back to a different Hub/ POP.
- Mesh – Node / Cabinet has multiple paths with different technologies all leading back to a Hub / POP.

Good

- Ring – Node / Cabinet is connected two separate paths that lead back to the same Hub / POP

OSP Design
(Maximum of 5 points)

Projects that meet all the criteria listed under Good and Best will earn five points. Projects that meet all the criteria under Good and some under Best will earn three points. Projects that meet either some of the Best but none of the Good or all of the Good criteria will earn two points. All others will earn zero.

Best

- Design for future growth and scalability. This includes deploying spare capacity in the fiber cable, handholes and vaults, and equipment. It also includes using a distributed split architecture and deploying multiple distribution points.
- Use redundant equipment and systems. This ensures that the network can continue to operate even if there is a failure in one part of the system.
- Use high-quality materials and construction methods. This will help to ensure the long-term reliability of the network.

Good

- Follow industry best practices. This will help to ensure that the network is designed and built correctly.
- Use appropriate technologies for the specific needs of the network. This includes factors such as the type of traffic that will be carried on the network and the distance that the network needs to span.
- Consider cost-effectiveness. It is important to design a network that is affordable to build and operate.

Capacity Design
(Maximum of 5 points)

Projects that meet all the criteria listed under Good and Best will earn five points. Projects that meet all the criteria under Good and some under Best will earn three points. Projects that meet either some of the Best but none of the Good or all of the Good criteria will earn two points. All others will earn zero points.

Best

- Deploying high-density fiber with spare capacity
- Building spares for long haul and short haul portions of the network
- Using a distributed split architecture to serve the local area
- Deploying redundant power systems to maintain uptime on the network
- Using low split ratios to allow for future grow

Good

- Deploying single mode loose tube or ribbon fiber.
- Using a cascaded split architecture to serve the local area.
- Deploying multiple distribution points to ensure available capacity when needed.

Supplemental Mobile Network
(Maximum of 20 points)

Applicants proposing an end-to-end fiber technology plus new mobile coverage that can supplement the fiber service during severe weather and disasters in Target Areas currently lacking access to 3G service may also receive points. Applicants who do not propose end-to-end fiber to all Target Locations in a proposed project may not receive these points. Proposed new mobile service must supplement, not substitute for proposed fiber service. WVDED will identify Target Areas eligible for these points prior to application. Applicants may receive points for commitments to achieve new mobile wireless coverage in the eligible Target Areas if Target Locations in the eligible Target Areas represent at least 50% of the Target Locations in the proposed project.

WVDED will base the number of points on the level of coverage commitment that the applicant makes at the time of application. The minimum coverage commitment that an applicant must make to be eligible for points is 40% of the Target Locations in the eligible Target Area, which earns eight points. One additional point may be earned for each five percentage points of additional coverage commitment. At the time of application applicants must present a high-level design and propagation prediction sufficient to achieve the proposed coverage commitment. However, subgrantees who have made such a commitment must demonstrate achievement of the commitment at completion of construction through drive testing using commonly-deployed consumer handsets showing 4G or better service with speeds at or exceeding 25/3 Mbps at Target Locations, or the nearest point on the road serving Target Locations. Predicted coverage is not sufficient to demonstrate compliance. Networks deployed must be scalable to 5G service.

To be eligible for points based on mobile coverage commitments, towers must be outfitted with fiber for backhaul. Fiber connections must be survivable redundant deployments to support multiple tenant traffic. Survivable redundant fiber provides a durable connection to the tower site with at least two paths from the site to the local transit aggregation point.

If the tower site does not initially use fiber backhaul, the tower must be located within 1,000 feet of a fiber access node.

Subgrantees making coverage commitments must provide not less than 80% of the new coverage from towers meeting the following scalability and resiliency standards:

- Attachable Space/Tower Height – funded towers serving wireless deployments (including fixed wireless technologies) shall be designed to support multi-tenant attachments. The tower must provide at least 60 feet of vertical space to be used by additional tenants above the minimum tower height necessary for the funded service. The attachable tenant envelopes within the vertical space must be at least 10 feet. Best practice should provide 15 feet of vertical space for attachable tenant envelopes.
- Structural Integrity – towers must be constructed from galvanized steel poles anchored to structural concrete pads. Both tower and foundation must be designed for wind load standards of 40 Kips sq/in for the top attachment and 30 Kips sq/in for the lower three attachments. Structural integrity must be sufficient to support 4 colicators
- Power – sites shall be designed and installed with a 4-gang meter bank with an 800 amp single phase, equivalent to 200 amps for each carrier.
- Tower siting – multi-use towers shall be coordinated with possible tenants to identify appropriate areas for the various users.

Not more than 20% of new mobile coverage may come from smaller infill towers not meeting these standards. This percentage is based on Target Locations reached.

No additional points beyond the maximum of 20 may be earned.

Speed of Network & Other Technical Capabilities	Max points	
Category: Secondary	Priority: NA	Non-Priority: 20
Five points shall be awarded to Projects with a demonstrated useful life for major components greater than eight years.		
WVDED shall additionally award 5 points to Projects expected to be scalable to speeds of 500/20 but less than 1 Gbps / 35 Mbps, and it shall award an additional 10 points to Projects expected to be scalable to speeds of at least 1 Gbps / 35 Mbps—both must have BEAD-defined low latency.		

5.3 Provisional Award Process

After determining the rank of each Proposed Project, WVDED will begin the provisional award process. In general, WVDED will seek to provisionally award the best-ranked combination of Eligible Projects in each Target Region. However, the ability to do this in every Target Region may be limited by the Capacity of applicants and the overall Program Budget.

5.3.1 Capacity

Capacity is a ceiling on the total number of awarded Projects an applicant may receive. Proposed Projects that, if awarded, would cause an applicant to exceed its Capacity will be treated as ineligible. Each applicant will have a Financial Capacity and a Relative Capacity. An applicant exceeds its Capacity if it exceeds either its Financial Capacity or its Relative Capacity.

Financial Capacity is a limit per applicant based on that applicant's demonstrated ability to provide both matching funds and a letter of credit or performance bond. For example, an applicant able to demonstrate that it can provide a letter of credit or performance bond to support \$50 million in grant funds and \$30 million in matching funds would not have the Financial Capacity to receive awarded Projects beyond these thresholds.

Relative Capacity has two parts:

- Part one: a limit on the total cost of Projects awarded to the applicant.
- Part two: a limit on the percentage of total grant funds that the applicant may receive, relative to the total grant funds to be awarded in the program. This represents the degree to which the success of the program would be concentrated on a single subgrantee.

WVDED will establish part one and part two of Relative Capacity for each applicant based on the applicant's risk and demonstrated ability to develop and operate networks at scale. WVDED will consider the applicant's demonstrated managerial and operational experience, demonstrated ability to scale, the scale of existing awarded Projects, its demonstration of financial sustainability, and its demonstrated track record of compliance and performance on previously awarded projects—whether through federal, state, or other programs.

WVDED may establish up to three levels of Relative Capacity for each applicant: Level One representing the lowest level of risk, and Levels Two and Three representing higher levels of relative risk. Depending on the applications received, WVDED may elect to not make awards to any applicant that exceeds Level One of Relative Capacity if WVDED can do so while reaching all unserved and underserved locations at a reasonable cost within the program budget. If necessary to reach all Target Locations, WVDED may also consider making awards to applicants at either Level Two or Level Three of Relative Capacity.

5.3.2 Program Budget and the Extremely High-Cost Threshold

Provisional awards that exceed the total program budget will not be made. WVDED may also reserve from the program budget, if necessary, an estimated amount of funds that may be required to fund Projects to serve Target Locations that do not have an Eligible Project.

To ensure that the total amount granted does not exceed the amount available, WVDED will establish an Extremely High-Cost Threshold. The Extremely High-Cost Threshold is a grant cost per Target Location above which WVDED may consider Eligible Projects with a less-preferred technology but a lower cost per Target Location. (See Section 5.2.1, “Ranking Levels.”). More specifically, if the total Program cost exceeds the allocated Program budget before WVDED issues preliminary awards and all Proposed Projects in a given Target Region exceed the Extremely High-Cost Threshold then WVDED will consider a less-preferred technology with a lower cost. WVDED will do this for all Target Regions to which this applies.

After establishing a set of provisionally awarded Projects, if the total expected costs exceed the total Program budget, then WVDED will lower the Threshold by \$1,000 dollars and repeat the above process. This will continue until either the total cost of the Program stays within the Program budget or until the Extremely High-Cost Threshold hits a floor that WVDED will establish. If the expected costs still exceed the Budget once the Minimum Threshold is reached, WVDED will take these additional steps as necessary to meet the Budget in the following order:

- Eliminating provisionally awarded Projects that would only serve CAI Target Locations, starting with those having the highest grant cost per Target Location.
- Requesting that applicants modify their provisionally awarded Projects to remove CAIs if it appears that removal of the CAIs would materially change the grant cost of the provisionally awarded Project.
- Eliminating provisionally awarded Projects that would only serve underserved Target Locations, starting with those having the highest grant cost per Target Location.
- Substituting the alternative Projects that remove underserved locations from provisionally awarded Projects with a mixture of unserved and underserved locations and less than 80% unserved locations.
- Eliminating provisionally awarded Projects that would only serve 80% or more unserved Target Locations, starting with those having the highest grant cost per Target Location.

5.4 Additional Awarded Areas

At WVDED’s discretion, applicants with existing or previously funded fiber or cable networks in West Virginia must accept up to an additional 20% of grant funding to build line extensions to areas in Target Areas without an awarded Project that are adjacent to the applicant’s existing, awarded, or otherwise previously funded network subject to an existing state, federal, or local commitment. WVDED will incorporate these line extension areas into the applicant’s potentially awarded Projects. WVDED may offer more than 20%, but the applicant may choose whether or not to accept it. WVDED will provide notice and an opportunity for applicant to calculate the cost to build such line extensions. The project costs for such builds must be calculated using the cost factors that the applicant submitted during the pre-application phase plus pole make-ready costs as a path through. The applicant must provide necessary match funds. Applicants will not be required to accept projects that would cause them to exceed their Capacity threshold.

WVDED may make available American Rescue Plan Act (ARPA) funds leftover from existing or previous programs in West Virginia for entities to provide line extensions. Note that these funds will not be comingled with BEAD funds.

5.5 Potential Award Pro Forma Review

After preliminary award decisions, WVDED will require provisional subgrantees to complete a final pro forma cash flow analysis for a 10-year period based on the provisionally awarded Proposed Projects, which will be similar in form and content to the pre-application pro forma cash flows. In addition, WVDED will require provisional subgrantees to submit a business plan for the provisionally awarded Projects that includes a plan for marketing and customer acquisition and standing up any new or additional required operational capabilities in the prospectively awarded Projects. WVDED will allow provisional subgrantees 21 days to complete these analyses, which may be extended at WVDED's discretion. It will review these to confirm sustainability of the prospective project prior to final award.

5.6 Provisional Subgrantee Letters of Credit or Performance Bond

As noted in Section 2.7, prior to entering into any subgrantee agreement, each applicant that has been provisionally awarded shall obtain an irrevocable standby letter of credit or performance bond that meets the requirements established in the model letter of credit and documentation and in a value of no less than 10% of the subaward amount. At this step, the provisional subgrantee must obtain an actual letter of credit or performance bond as opposed to the bank's, credit union's, or eligible bond issuer's commitment to issue the letter of credit or performance bond that is required during the application process.

The provisional subgrantee will also be required to provide with its letter of credit an opinion letter from legal counsel clearly 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 will not treat the letter of credit or proceeds of the letter of credit as property of the subgrantee's bankruptcy estate under Section 541 of the Bankruptcy Code.

5.7 NTIA Approval of West Virginia BEAD Final Proposal

Awards are subject to NTIA's approval of West Virginia's BEAD Final Proposal. WVDED will submit its Final Proposal after completion of application review and Project selection.

6. Grant Distribution Agreement and Standard Terms

Provisional subgrantees will be required to enter into a Grant Distribution Agreement (GDA) with WVDED. Additional terms may be required by NTIA/Department of Commerce. All projects will include a retainer equal to 10% of awarded funds withheld until project completion and until all close-out documents and reporting are submitted and approved. To the extent necessary, the Program reserves the right to create additional requirements that provisional subgrantee must fulfill prior to disbursement of funds.

7. Subgrantee Obligations and Post Award Monitoring

Subgrantees of grant funds must comply with post-award monitoring and reporting requirements to maintain continued eligibility for disbursement of grant funds. Subgrantees are responsible for active technical, financial, and project management of awarded projects through their own staff and or by hiring and managing well-qualified contractors. Subgrantees should also expect to cooperate with technical and financial monitoring and review provided by WVDED contractors and staff.

7.1 Notice to Proceed with Exempt Activities (NTPE)

Prior to a subgrantee making any eligible expenditures, a written NTPE from WVDED will be required. As part of this process, subgrantees must provide WVDED, as part of their Grant Disbursement Agreement, required documentation including but not limited to debarment review forms, project bank accounts, environmental compliance requirements, and audit compliance plans. Once the NTPE is issued, subgrantees may then begin pre-construction activities, which involves expenditures on “soft cost” items such as engineering functions, permit applications/right-of-way practices, and associated logistical efforts.

7.2 Budget Amendments

Upon full execution of a subgrantee’s grant agreement with WVDED, an established budget from the approved Project will be used for monitoring project fund expenditures. Any changes to this budget, including expense category shifts, will require submission of a proposed budget amendment. Upon approval by WVDED, this will serve as the new budget baseline. The ability to make budget amendments is subject to WVDED approval and guidance and/or approval from NTIA.

7.3 Engineered Design and Notice to Proceed with Construction (NTPC) Requirements

Following the issuance by WVDED of an NTPE, but prior to requesting the NTPC, subgrantees must submit an engineered design to WVDED. Included in this NTPC process, WVDED requires subgrantee to provide copies of any DOH permits, any other applicable permits, clearances, applicable Dig Once Notifications, pole attachment agreements, and applicable bonds as well. Should a subgrantee’s project occur on private property or property outside of the ROW, WVDED requires the subgrantee to provide evidence of any required easements or clearances as well. For projects requiring underlying municipal, county, or State, or Federal agency approvals, WVDED requires subgrantees to submit evidence of such documentation.

Furthermore, WVDED shall provide subgrantees with specific Engineered Design Requirements detailing guidelines for the designs required to be submitted. Included in this process, and in order to request an NTPC from WVDED, subgrantees must provide a Network Design Certification form, a Design Project Checklist, and a Detailed Design Checklist. WVDED requires designs to be prepared under the review of a

Professional Engineer (PE), or an engineer with substantial demonstrated experience provided NTIA does not issue guidance contrary to this. WVDED requires credentials to be submitted as part of this.

7.4 Invoice Submittals

Subgrantees must adhere to the following guidelines with regard to invoice submittals:

1. subgrantees must provide proof of payment to vendors and lien waivers prior to submitting invoices;
2. subgrantees must submit invoices in a sequential order corresponding to the subgrantee's matching funds report or grant disbursement form; and
3. in cases where an invoice is not 100% used in a single matching funds report or grant disbursement, subgrantees must include a clear running total marked up on the invoice.

7.5 Grant Disbursement Requests

WVDED requires from subgrantees submission of proof of expenditures on eligible costs for review prior to reimbursement and also requires lien waivers for each invoice greater than or equal to \$2,500.

Generally, in order to be eligible for grant disbursements, subgrantees:

1. must comply with post-award monitoring and reporting requirements;
2. are responsible for active technical, financial, and project management of the awarded project;
3. must cooperate with technical and financial monitoring and review;
4. shall submit engineered designs to WVDED prior to reimbursement; and
5. shall submit proof of expenditures on eligible costs for review prior to reimbursement.

7.6 Compliance Reporting

Subgrantees must submit to WVDED a regular report, at least semiannually, for the duration of the subgrant to track the effectiveness of the use of funds provided. Each report shall describe each type of project and/or other eligible activities carried out using the subgrant and the duration of the subgrant.

WVDED may add additional reporting requirements or increase the frequency of reporting with the approval of the Assistant Secretary and must make all subgrantee reports available to NTIA upon request. The report must, at minimum:

1. include a list of addresses or location identifications (including the Broadband Serviceable Location Fabric established under 47 U.S.C. 642(b)(1)(B)) that constitute the service locations that will be served by the broadband infrastructure to be constructed and the status of each project;
2. identify new locations served within each project area at the relevant reporting intervals, and service taken (if applicable);
3. identify whether each address or location is residential, commercial, or a community anchor institution;
4. describe the types of facilities that have been constructed and installed;
5. describe the peak and off-peak actual speeds of the broadband service being offered;

6. describe the maximum advertised speed of the broadband service being offered;
7. describe the non-promotional prices, including any associated fees, charged for different tiers of broadband service being offered;
8. list all interconnection agreements that were requested, and their current status;
9. report the number and amount of contracts and subcontracts awarded by the subgrantee disaggregated by recipients of each such contract or subcontracts that are MBEs or WBEs;
10. provide materials demonstrating compliance with proposed MBE, WBE, and LSA solicitation plans;
11. include any other data that would be required to comply with the data and mapping collection standards of the Commission under Section 1.7004 of title 47, Code of Federal Regulations, or any successor regulation, for broadband infrastructure projects; and
12. include an SF-425, Federal Financial Report and meet the requirements described in the Department of Commerce Financial Assistance Standard Terms and Conditions (dated November 12, 2020), Section A.01 for Financial Reports.

Subgrantees must provide regular reports to ensure that both they and WVDED and meet all reporting requirements as prescribed in NTIA/Commerce BEAD program guidelines. WVDED shall build reporting forms conforming to BEAD program requirements and provide compliance guidance to subgrantees regarding requirements and methods of submittal to WVDED.

Included in such reporting shall be guidance related to required, regular labor reporting for projects over \$5 million in expected total costs as detailed in the BEAD NOFO.

For projects meeting the \$5 million labor reporting threshold, subgrantees may provide a certification that, for the relevant project, all laborers and mechanics employed by contractors and subcontractors in the performance of such project are paid wages at rates not less than those prevailing for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State in which the work is to be performed, as determined by the U.S. Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the "Davis-Bacon Act").

If such certification is not provided, a subgrantee must provide a Project Employment and Local Impact report detailing:

- the number of employees of contractors and sub-contractors working on the project;
- the number of employees on the project hired directly and hired through a third party;
- the wages and benefits of workers on the project by classification; and
- whether those wages are at rates less than those prevailing as determined by US Secretary of Labor in accordance with subchapter IV of chapter 31 of Title 40, United States Code ("Davis-Bacon Act").

Subgrantees must maintain sufficient records to substantiate the above information upon request.

In addition, for projects meeting the \$5 million expected cost threshold, subgrantees may provide a certification that the projects include a project labor agreement, meaning a pre-hire collective bargaining agreement consistent with section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)). If the subgrantee does not provide such a certification, the subgrantee must provide a project workforce continuity plan, detailing:

1. how the subgrantee will ensure the project has ready access to a sufficient supply of appropriately skilled and unskilled labor to ensure high-quality construction throughout the life of the project, including a description of any required professional certifications and/or in-house training;
2. how the subgrantee will minimize risks of labor disputes and disruptions that would jeopardize timeliness and cost-effectiveness of the project;
3. how the subgrantee will provide a safe and healthy workplace that avoids delays and costs associated with workplace illnesses, injuries, and fatalities, including descriptions of safety training, certification, and/or licensure requirements for all relevant workers (e.g., OSHA 10, OSHA 30);
4. whether workers on the project will receive wages and benefits that will secure an appropriately skilled workforce in the context of the local or regional labor market; and
5. whether or not the project has completed a project labor agreement.

Finally, for projects meeting the above BEAD expected cost thresholds, subgrantees will be required to report on whether the project prioritizes local hires.

7.7 Ready to Serve Review/Field Review

WVDED generally conducts “ready-to-serve” review(s) for each project. This process ensures that any new BEAD-funded constructed networks are compliant with construction/engineering standards and meet the BEAD program’s minimum speed and service requirements. During these reviews, WVDED’s consulting engineers reconcile invoices with as-builts or other design details to confirm project alignment with approved construction plans and spending estimates. When projects approach 50% completion, WVDED may schedule and perform desktop and field reviews with subgrantees. At the 100% completion point, WVDED will schedule and perform desktop and field reviews with subgrantees.

Additionally, as part of this field review process, WVDED’s technical reviewers will verify the consistency of the plant observed with the project’s scope as defined in subgrantee’s contracting materials with WVDED and note general quality observations. WVDED’s field validation team may conduct field review reports at the midpoint and will conduct one at project completion, following which the team will prepare reports identifying any discrepancies or issues with the constructed network, with the subgrantees given a prescribed period of time to cure or provide proof of corrective actions taken to remedy any issues. Applicants will also be required to retain and submit to WVDED optical time domain reflectometer (OTDR) and, if capable, intelligent optical link mapper (iOLM) fiber traces. To be considered acceptable for WVDED approval, these tests must be, at a minimum, passing. WVDED may provide guidelines for submitting OTDR/iOLM fiber traces.

Upon a project’s completion, WVDED requires subgrantees to submit a closeout package with required documentation for review and approval of the final 10% of the grant retained which WVDED will release following approval of all closeout documentation and final field reviews.

7.8 Speed Testing

WVDED generally shall require of subgrantees compliance with the standards and testing protocols for speed and latency established by the FCC in prior grant programs, requiring of subgrantees that such

testing be performed from the customer premises of an active subscriber to a remote test server at an end-point consistent with the requirements for a Commission-designated Internet Exchange Point (IXP).¹⁷

7.9 Clawback/Recoupment of Funds

In general, WVDED shall have provisions in its grant agreement with subgrantees stating that WVDED may deduct amounts or withhold payments invoiced by the subgrantee if the subgrantee fails to comply with any requirements of the grant agreement. Further, WVDED will have provisions stating that funds withheld due to unsatisfactory project performance or failure to comply with the terms and conditions of the grant agreement may be restored upon the subgrantee's satisfactory remedy of the condition that caused the withholding. Lastly, in general WVDED shall retain 10% of any grant award until project completion, including approval of all closeout documents and reporting requirements.

WVDED will also reserve the right to disallow costs and recover funds disbursed on the basis of audit or review, even following closeout of the Grant Agreement with subgrantees. WVDED will specify that failure to substantially meet performance measures may result in suspension of reimbursement payment, termination of the Grant Agreement with WVDED, and/or prohibit the subgrantee from being eligible to submit an application for future allocations until such time as the failures are resolved. WVDED shall provide notice and an opportunity for subgrantees to cure any failures or deficiencies within 30 days or such other reasonable time as may be specified in the notice. If the subgrantee should fail to cure during the designated period, WVDED shall have the discretion to take one or more actions, such as:

1. requiring additional project monitoring to ensure compliance with the subgrantee's project plan;
2. requiring the subgrantee to obtain technical or management assistance in order to ensure compliance with the project plan;
3. reducing the program funds to be disbursed under the Grant Agreement in an amount not to exceed the difference between the full amount of the subgrantee award and the total amount for which the subgrantee has submitted a reimbursement request that is consistent with the progress made in complying with the project plan as of the date of the expiration of the cure period.

With regard to recapture provisions in the subgrantee agreement with WVDED, WVDED shall reserve the right to recapture funds remaining due to cost underruns.

7.10 Timely Subgrantee Reporting Mandates

As an exhibit to its grant agreement with subgrantees, WVDED will require a form that complies with the BEAD NOFO's regular financial and performance reporting requirements for subgrantees.¹⁸ WVDED will specify in its grant agreement and compliance guidance materials that subgrantees submit the information in this form on at least a semi-annual basis or greater frequency to WVDED for the duration of the subgrant.

In addition to the periodic reporting requirements communicated to subgrantees, WVDED shall also convey any record retention requirements and shall build into its grant agreements with subgrantees the

¹⁷ BEAD NOFO at pgs. 64-65.

¹⁸ See BEAD NOFO, p. 90-92.

requirement that subgrantees provide any necessary information to WVDED as may be requested to fulfill any additional annual performance reporting requirements as well.

7.11 Record Retention

Regarding record retention requirements, WVDED will prescribe that subgrantees retain financial records, supporting documents, and any other records pertinent to the grant agreement for a period of five years from the date of submission of the final expenditure report or payment of final invoice.

As part of the subgrantee's participation in the program, it will allow WVDED, along with the NTIA/Commerce, Inspector General, Comptroller General, State Auditors, program auditors, and other duly authorized representatives, the right of timely and unrestricted access to books, documents, papers, or other records as well as reasonable access to past and present personnel for purposes of audits, examinations, and other grant program monitoring activities.

Regarding closeout, WVDED may condition closeout of the subgrantee award on receipt of the subgrantee's final semi-annual report, confirmation that all monitoring and audit findings have been formally addressed and resolved, and receipt of a final project audit or review. WVDED requires subgrantees to provide any outstanding financial, performance, or other required reports within 90 days after the end date of the period of performance.

7.12 Audits/Monitoring

Regarding audits and monitoring, WVDED will require subgrantees to agree as a condition of the award and as part of subgrantees' grant agreement with WVDED that subgrantees will cooperate with both WVDED and NTIA/Department of Commerce with respect to any audit of WVDED's programs or the award. Additionally, WVDED will require subgrantees to review, understand, and comply with the West Virginia State Accountability requirements of the West Virginia Code Section 12-4-14, as applicable.

7.13 Civil Rights Compliance

WVDED certifies that its selection of subgrantees will account for and satisfy each of the following authorities:

- Parts II and III of Executive Order 11246, Equal Employment Opportunity;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency; and
- Executive Order 13798, Promoting Free Speech and Religious Liberty

7.14 Cybersecurity and Supply Chain Risk Management

7.14.1 Cybersecurity

Prior to allocating any grant funds to subgrantees, the WVDED will require a subgrantee to attest that:

1. The subgrantee has a cybersecurity risk management plan (referenced as “the plan” for the duration of this subsection) in place that is either:
 - a. operational, if the subgrantee is providing service prior to the award of the grant; or
 - b. ready to be operationalized upon providing service, if the subgrantee is not yet providing service prior to the grant award;
2. The plan reflects the latest version of the National Institute of Standards and Technology (NIST) Framework for Improving Critical Infrastructure Cybersecurity (currently Version 1.1) and the standards and controls set forth in Executive Order 14028 and specifies the security and privacy controls being implemented;
3. The plan will be reevaluated and updated on a periodic basis and as events warrant; and
4. The plan will be submitted to the Eligible Entity prior to the allocation of funds. If the subgrantee makes any substantive changes to the plan, a new version will be submitted to the Eligible Entity within 30 days.

7.14.2 Supply Chain Risk Management (SCRM)

Prior to allocating any grant funds to subgrantees, the WVDED will require each prospective subgrantee to attest that:

1. The prospective subgrantee has a SCRM plan (referenced as “the plan” for the duration of this subsection) in place that is either:
 - a. operational, if the prospective subgrantee is already providing service at the time of the grant; or
 - b. ready to be operationalized, if the prospective subgrantee is not yet providing service at the time of grant award;
2. The plan is based upon the key practices discussed in the NIST publication NISTIR 8276, Key Practices in Cyber Supply Chain Risk Management: Observations from Industry and related SCRM guidance from NIST, including NIST 800-161, Cybersecurity Supply Chain Risk Management

Practices for Systems and Organizations and specifies the supply chain risk management controls being implemented;

3. The plan will be reevaluated and updated on a periodic basis and as events warrant; and
4. The plan will be submitted to the WVDED prior to the allocation of funds. If the subgrantee makes any substantive changes to the plan, a new version will be submitted to the WVDED within 30 days. The WVDED is required to provide a subgrantee's plan to NTIA upon NTIA's request.

To the extent a subgrantee relies in whole or in part on network facilities owned or operated by a third party (e.g., purchases wholesale carriage on such facilities), such subgrantee will be required to obtain the above attestations from its network provider with respect to cybersecurity practices and supply chain risk management practices.

7.15 Compliance with Federal Funds Obligations

In general, recipients and subrecipients of federal funds must comply with IIJA/BEAD funding recipient obligations, in addition to reporting obligations. Subgrantees should expect to comply with requirements of other applicable federal statutes, regulations, and executive orders applicable to recipients of federal funds. Applicants should consider how and whether certain aspects of these requirements may apply.

Subgrantees will be subject to audit or review by the NTIA, the Department of Commerce Office of Inspector General, or another authorized federal agency at any time.

Subgrantees will comply with the reporting requirements above as set forth in the BEAD NOFO as well as comply with obligations as set forth in 2 CFR Part 200 and the Department of Commerce Financial Assistance Standard Terms and Conditions.

Regarding the 2 CFR Part 200 Uniform Guidance, there may be different requirements for Internet Service Provider (ISP) subgrantees under fixed amount awards versus non-ISP subgrantees concerning property acquired with federal awards, treatment of program income, procurement, and other items pending further guidance by the NTIA. NTIA has advised Eligible Entities such as WVDED to proceed as though the exceptions to those requirements will apply to subgrantees. As such WVDED intends to avail subgrantees of the 2 CFR Part 200 exceptions and adjustments that NTIA has proposed to apply in the BEAD program.¹⁹ These requirements will be outlined in compliance guidance that will be communicated through the WVDED website and grant agreement materials. As part of the transparency and accountability requirements of the Program, subgrantees will also establish and widely publicize telephone numbers and email addresses for the subgrantees' internal ethics office (or comparable entity) for the purpose of reporting waste, fraud, or abuse in the Program.

Subgrantees are encouraged to report any instances of fraud, waste, or abuse to the U.S. Department of Commerce Office of Inspector General (OIG).²⁰

WVDED and subgrantees alike will be subject to the whistleblower rights and remedies established under 41 USC § 4712, wherein subgrantee employees may not be discharged, demoted, or otherwise

¹⁹ Department of Commerce, "Tailoring the Application of the Uniform Guidance to the BEAD Program; Request for Comments, July 5, 2023, 88 FR 42918. <https://www.govinfo.gov/content/pkg/FR-2023-07-05/pdf/2023-14114.pdf>

²⁰ The OIG reporting hotline is available at: <https://www.oig.gov/pages/hotline.aspx>.

discriminated against as a reprisal for disclosing information the employee reasonably believes to be evidence of gross mismanagement, waste, abuses of authority and dangers to public safety, violations of law, rule, or regulations related to a federal contract or grant. Applicants will be required to inform employees and contractors in writing of these whistleblower rights.²¹

This is not a comprehensive list of federal funding obligations. Subgrantee obligations are more fully described in WVDED's *Guide to Reporting and Compliance Obligations for West Virginia BEAD Broadband Investment Plan Subrecipients*.²² Applicants should review this *Guide* as well as the applicable guidance provided and requirements as identified by the NTIA and the Department of Commerce.

7.16 Cooperation with State Broadband Mapping

In accordance with W.Va. Code §31G-1A-3, subgrantees must agree to provide information about broadband availability, pricing, and speeds in response to data collection requests from the State Broadband Office on an annual basis. Information must be reported statewide at the address level for all broadband networks operated by the subgrantee. WVDED intends to coordinate information requested with required reporting under the Federal Communications Commission's Broadband Data Collection initiative to minimize reporting burdens.²³

7.17 Disaster Recovery and Preventative Maintenance Plans

Before network turn-up, subgrantees must provide and receive approval from WVDED on a Disaster Recovery and Preventative Maintenance Plan. WVDED may request future edits to these plans to account for changing weather conditions within the State of West Virginia.

²¹ See also <https://www.oig.doc.gov/pages/whistleblower-protection-program.aspx>.

²² This document will be made available at <https://broadband.wv.gov>.

²³ See <https://www.fcc.gov/BroadbandData>.

8. Appendices

Appendix A. Examples of Network Resiliency-Related Considerations

Flood Prone Areas:

Building in areas that are prone to flooding presents a unique challenge when trying to preserve the longevity and usefulness of a network asset. While weighing the factors that could put an asset at risk, planning and taking the appropriate measures will ensure that this asset has a prolonged life span. The following lists considerations that should be taken into account when planning to deploy in flood prone areas.

1. Consult the regional hazard mitigation plan and local authorities to identify any known problem areas within the Regional Planning Districts.
2. Review West Virginia Flood Map to identify if any unserved, underserved, or CAI falls within a FEMA defined Special Flood Hazard Area (SFHA)
3. Have an emergency preparedness plan in place to deploy resources before and after a major rain event.
4. Consult FEMA P-348, Edition 2 – Protecting Building Utility Systems from Flood Damage.
5. Perform hydrological survey to determine the best course of action for building constructing new infrastructure.
6. Identify higher areas on the flood plain when possible, for route planning.
7. Deploy buried infrastructure.
 - a. When deploying manholes or handholes, plan for drainage to expedite water draining, install covers that can be tightly sealed during flood events, and use non-corrosive materials.
 - b. Ensure conduits are water-resistant, and where conduits penetrate vaults, handholes, buildings or risers, the proper seal must be used to prevent water infiltration.
8. Anchor and Harden Infrastructure.
 - a. Foundations need to provide stability to withstand hydrological flow pressures.
 - b. Use concrete footings that are the correct size and depth to prevent movement.
 - c. Reinforce bases with steel or composite materials to enhance their strength and resistance to water movement.
 - d. When using tie downs. Implement a system that connects to nearby structures or anchor points to prevent movement.
9. Consider the following when deploying electrical components:
 - a. Install at a height recommended per local zoning regulations and guidelines.
 - b. If a component is installed outdoors or has the potential to be submerged in water, please ensure that the components are placed in a waterproof enclosure or cabinet.
 - c. When possible, choose electrical components that are rated for flood prone environments.

- d. If components are exposed to flood waters, please use NEMA rated 6 or 6P type enclosures if possible.
10. Consider the following when deploying cabling or passive components:
 - a. Fiber optic cabling and other water-resistant materials are preferred.
 - b. Redundant pathways need to be built in and out of the flood area.
 - c. Use IP68 rated connectors and components.
 11. Consider the following when deploying buildings, communication huts, or tower locations:
 - a. Building on higher ground is preferred.
 - b. If the building is constructed in or near a flood area, dry floodproofing measures need to be implemented to protect equipment and cabling.
 - c. Risers need to be installed on the most sheltered side of the building, on the downstream side of columns, pilings, and posts.
 - d. Enclose cabling in conduits to prevent damage from water.
 - e. Surround racking, equipment, and generators with dry flooding measures such as raised flooring.
 - f. Install electrical wiring using corrosion-resistant raceway systems that facilitate replacement of conductors exposed to flooding.
 - g. Electrically isolating components installed in areas subject to flooding from components at higher elevations.
 - h. Installing separate branch circuits or feeders that are isolated from the rest of the electrical system and protected using ground fault circuit interrupters (GFCIs).
 - i. Use non-corrosive materials.

Landslide Mitigation

When constructing new infrastructure in areas prone to landslides it's important to evaluate and plan out the potential risks and threats to the newly constructed network assets. By taking the necessary precautions, this will significantly diminish the impact of these risks, thus ensuring the resilience and longevity of the constructed infrastructure. Below are some high-level recommendations made by WVDED.

1. Consult the regional hazard mitigation plan and local authorities to identify any known problem areas within the Regional Planning Districts.
2. Review West Virginia Flood Map Landslide layer to identify the following:
 - a. Unserved, Underserved, or CAI location that fall nearby landslide activity areas.
 - b. Cabling routing of new infrastructure nearby landslide prone areas.
3. Develop an emergency response plan.
 - a. Set up a list of personnel, processes, and procedures that allow your team to quickly act in the event of a landslide event.
 - b. Conduct regular trainings to ensure team members are prepared and can act.
 - c. Establish contingencies to reroute network traffic and service disruptions to prevent extended outage windows.
4. Consult with geotechnical engineering and planning personnel about the following to come up with cost effective measures for more resilient infrastructure:
 - a. Native vegetation placement
 - b. Drainage improvements such as installing permeable membranes.

- c. Slope stabilization practices such as retaining walls and lessening slopes.
 - d. Debris removal.
 - e. Design foundations that can withstand ground movement and ensure stability.
5. Constructing redundant routes to mitigate major outages.

Snowstorm / Ice Mitigation

Snowstorms are a common occurrence within the State of West Virginia. With warming temperatures ice might become an emerging threat to infrastructure as the weather transition between snow/sleet and ice begins to creep north. Below are some high-level recommendations made by WVDED.

1. Consult the regional hazard mitigation plan and local authorities to identify any known problem areas within the Regional Planning Districts.
2. Develop an emergency response plan.
 - a. Set up a list of personnel, processes, and procedures that allow your team to quickly act.
 - b. Conduct regular trainings to ensure team members are prepared and can act.
 - c. Establish contingencies to reroute network traffic and service disruptions to prevent extended outage windows.
 - d. Have adequate spare parts, tools, and personnel to address outages.
 - e. Ensure that you have adequate backup generators and fuel to restore services.
3. Establish preventive maintenance plans.
 - a. Perform vegetation maintenance to prevent overgrowth from impacting the infrastructure.
 - b. Conduct regular inspections of the OSP plant to ensure infrastructure is in good standing:
 - i. Check to make sure cable plant is not sagging and pole attachments are secure to poles.
 - ii. Inspect cables and conduits for any vulnerabilities.
 - iii. Wireless components are secure to towers or poles and that there is no signs of damage or corrosion.
4. All aerial plant must be constructed utilizing the latest version NESC parameters. The plant should meet or exceed the current standard.
5. Proper insulation must be used on any cabinets or building sites.
6. De-icing treatments can be used on critical infrastructure.
7. Tower infrastructure must be reinforced to withstand heavy loading and extreme ice.