Vermont Community Broadband Board
Accountability Policy
Construction Standards Policy[1]

1. **Purpose:** The VCBB's mission is to "coordinate, facilitate, support and accelerate the development and implementation of universal community broadband solutions." [2] With respect to construction of broadband infrastructure, VCBB is specifically authorized to establish policies and standard grant terms which "adopt an industry-accepted engineering standard that promotes network reliability, resiliency, and interoperability."[3] This policy is intended to provide guidance to support Grantees in their construction and design of broadband infrastructure while preserving their flexibility to tailor solutions to meet network goals and business objectives consistent with industry standards and Act 71.

   It is also the intent of this policy to ensure at a minimum that:
   a. Alternative operators can reasonably assume operation of the network to facilitate continuity of service;[4]
   b. The networks are designed with performance measures that ensure delivery of service meeting the minimum speeds of 100MB/100MB, accommodating changes in demand (scalability); and [5]
   c. The design and installation promote network reliability, resiliency, and interoperability.

2. **Construction Standards Policy**: VCBB awards grants for the construction of broadband networks that achieve universal service to Vermonters.

   a. Grant Conditions to Address Engineering Standards: Pursuant to Act 71, the VCBB encourages designs and will prioritize applications that consist of the following:

      i. Utilize available partnerships to deliver cost-effective and affordable broadband deployments[6] ;
      ii. Demonstrate sustainable usability and scalability for the life of the installed asset[7]; and
      iii. Promote use of public broadband assets that can be shared by multiple service providers and that can support a variety of purposes.[8]

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[1] Version 2.1 (1.22.24).
[2] 30 V,S,A, §8081,
[3] 30 V.S.A. §8086(c)(2).
[4] 30 V.S.A. §8086(c)(4).
[5] 30 V.S.A. §8086(f)(1).
[6] 30 V.S.A. §8086(b)(1) and (b)(6).
[7] Id.; 30 V.S.A. §8086(b)(7) and (g).
[8] 30 V.S.A. §8086(b)(7).

iv. The definition of fixed broadband under the Act includes retail service by wire or radio that delivers service at speeds of at least 100/100 Mbps. It is the policy of the VCBB to prioritize the funding of fiber networks that use existing infrastructure, including utility poles and power in the public right of way as a means of ensuring it is delivering broadband projects consistent with the objectives of Act 71Radio fixed wireless may be an acceptable means of delivering broadband service as defined in the Act , where it is more cost effective than fiber and meets the VCBB's standards for accountability, affordability, reliability, resiliency, and interoperability. VCBB anticipates that fixed wireless may play a key role in its broadband deployment efforts with respect to off-grid addresses that are not economically feasible to connect using fiber.[9] ,

b. Design Standards: This policy supplements the construction standards specified in VCBB's Construction Grant RFP and Outside Plant Standards (OSP).

i. Commercial Off the Shelf Standards**:** To facilitate interoperability and interconnection, Grantee shall design and construct networks using commercial off the shelf equipment, protocols and systems. The policy is intended to enable Grantees the flexibility to choose from a variety of manufacturers and design their networks to meet their specific needs and objectives, while also facilitating continuity of service in the event an alternate operator must assume operation of the network. Grantees shall identify proprietary components and demonstrate that such components will not adversely impact interoperability, resiliency, or scalability.

ii. Resiliency: Network design will address resiliency ensuring continued operation for the expected life of the installed asset in adverse as well as growth scenarios.

a. Backup power – active nodes or OTNs will have 8 hour back up capability on sight with access to a minimum of 24-hour reserve power and a temporary generator connection point or permanent standby generator to ensure continuous operation. Back-up power will be tested as part of a preventive maintenance program to ensure availability in an emergency using testing protocols as defined by the National Fire Protection Association standard 110.

[9] Whereas Act 71 only concerns on grid locations, other broadband grant programs such as the Broadband Equity Access and Deployment (BEAD) program also provide funding for off grid addresses.

b. Security – As set forth in the Construction RFP, designs, monitoring and reporting must demonstrate 1) compatibility with current best practices and applicable standards and statutes and 2) how Grantee will adapt to emerging security practices and standards, including, if applicable to the project, BEAD NOFO security requirements.

c. Cybersecurity- The Grantee must maintain an operational cybersecurity plan reflecting conformity to the latest applicable National Institute of Standards and Technology (NIST) framework, or a comparable standard framework and must be reevaluated annually.

iii. Usability and Scalability:

a. All assets shall be designed and architected as appropriate for the immediate anticipated customer needs and expandable to accommodate future growth to the greatest reasonable extent of the expected life of the asset for that region or network segment.

b. Grantee shall comply with or provide written substantiation of all proposed deviations from the OSP Requirements. (https://publicservice.vermont.gov/vt-community-broadband-board-vcbb/outside-plant-design-osp-requirements). Examples:

i. Example1: Fiber plant with an expected 25-year life span would have additional fiber available for the area served including future expansion opportunities within the expected 25-year life including interconnection of other CUD's, wireless carriers, and ISPs.

ii. Example2: Active electronic devices with an expected 8-year life span would have an installed capacity appropriate for immediate customer needs and expandable for not less than 100% of that region or network segment anticipated for the lifespan of the devices.

iv. Performance monitoring and reporting:

a. Grantee must demonstrate that the network is operating as designed and the speed delivered to the customer meets the requirement of 100mb/100mb and further aligns with the specific requirements of customer subscriptions. Grantee's compliance with the performance

monitoring standards described in FCC WC Docket No. 10-90 as amended and administered by Universal Service Administrative Company (USAC) (https://www.usac.org/high-cost/annual-requirements/performance-measures-testing), measured semi-annually, meet this requirement. Grantees shall report network performance results annually.

c. Construction Standards: Grantee shall maintain a safety program in accordance with OSHA requirements. Grantee shall maintain construction oversight for field construction activities.

i. Project management metrics: VCBB staff shall compile a quarterly progress report. To facilitate, Grantees shall report monthly performance on a quarterly basis to VCBB staff construction metrics that include:

a. The initial grant request and financial construction forecast and the project baseline schedule;

b. Forecasted and actual:

i. Miles under construction/miles lit[10];

ii. Cost per mile completed;

iii. Number of addresses passed;

iv. Average cost per passing;

v. Total number Unserved/Underserved addresses completed; and

vi. Average cost per customer drop.

ii. Implementation: The VCBB or its designee shall review the Construction design to ensure compliance with this policy prior to grant approval and commencement of construction.

a. **Design Review:** Grantees may request exceptions, including modifications, to this policy at the time of the grant application or if a change arises during construction. For such exceptions, Grantee shall provide design rationale or a remediation plan. Modifications consistent with the intent of this policy shall be approved by the VCBB.

[10] Miles are treated as pole miles rather than total miles, which can include slack loops). Constructed means fiber ready to be lit. Lit means customers can get connected (ready for drops) "not later than 10 business days after the date of which the service request is submitted" as required under the Broadband Data Act, 47 U.S.C. § 641(14).

b. **Final Inspection** – A final inspection will be conducted by the VCBB within 30 days of completion of agreed upon project areas prior to the release of final payment and close-out.

c. **Enforcement** - At any time during construction of a broadband network funded by a VCBB grant, the VCBB will accept credible information of non-compliance with this policy. Grantee shall have a reasonable opportunity to respond, and if necessary, remediate. The VCBB may determine, upon review and deliberation, that a material failure to meet the obligations of this policy is a breach of the grant agreement and may trigger remedies available under the terms of the grant, whether imposed by the terms of the federal funding program or the VCBB award agreement.

d. **Duration**: The provisions of the VCBB Construction Standards policy shall apply to all projects that are the subject of a grant awarded by the VCBB for a period from the date of the grant agreement to December 31, 2034, unless a longer period is adopted by the Board.