

## Vermont Community Broadband Board Outside Plant Design (OSP) Requirements

*This document covers the Construction Grant requirements. All entities applying for grants must comply with the following:*

1. Grantee must provide before construction begins a clear constructable design with standards that cover the following:
  - a. Fiber sparing and reservation recommendations to assist with outside plant equipment and fiber sizing
  - b. Loss Budgets
  - c. Account for future and/or unplanned growth including public safety and mobile wireless. Grantee must leave no less than 3 tubes of spare fibers on cables between hubs. Grantee must also spare 1 tube on cables from the OLT to the splitter when not between hubs. The smallest size number of fibers on a route will be 48. This does not apply to post splitter fiber (end runs and driveways)
  - d. Power supply and back-up requirements for active locations
2. Grantee design must include every demand point and include:
  - a. Assigned specific and accounted for PON splitter and OLT port for every identified E-911 Address<sup>1</sup> so that provisioning and activation can be done with minimal truck rolls or future design requirements.
  - b. An estimate for drop distance and route for demand point should be known so that the impact to the material requirements and optical budget is understood.
  - c. Identification of slack budgets and loop locations.
3. Grantee's design deliverables prior to close-out must include detailed planned optical measured loss (dB) calculations. These planned losses will be compared to actual losses to ensure they fall within the Optical Extents budget. Loss testing shall be done in accordance with ANSI/TIA/EIA 526-7.
4. Prior to close-out the grantee will provide splice diagrams in GIS format.

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<sup>1</sup> A demand point is defined as a wired structure or a structure to be wired. Structures that are off grid are not "wired". Demand points also exclude any points that are already served at 25/3 or greater





5. Grantee must recommend integration locations for transit to other access points, that consider:
  - a. Geographic redundance
  - b. Connections with adjacent CUD networks
  - c. Connections with private networks, including leased fiber routes
  - d. Future redundancy opportunities
6. Prior to close-out Grantee must provide design mapping deliverables in a single GIS (ESRI Preferred) form including:
  - a. Online and downloadable field engineering data
  - b. Online and downloadable detailed construction maps
  - c. Bills of materials linked to location
  - d. GIS network diagram that reflects what was built
7. Equipment and materials specified must comply with the domestic content requirements of the American Rescue Plan Act

