

Broadband USA Applications Database

Applicant Name: FiberLight

Project Title: FiberLight Virginia Expansion

Project Type: Middle Mile

Executive Summary

FiberLight Virginia Expansion Executive Overview FiberLight is seeking an NTIA grant to expand its existing terrestrial based, middle mile network in Central Virginia (the Central Virginia Network) and to light FiberLight's existing dark fiber network from Culpepper County to Prince Williams County Virginia (the Culpepper Network) and Northern Virginia (the Northern Virginia Network). FiberLight currently owns and operates a 300 route mile (432 fiber count) general-purpose network that links together the metropolitan areas of Washington DC, Baltimore, McLean, Vienna, Reston, Herndon, Sterling and Culpepper. FiberLight would leverage that existing network to deploy and operate the proposed Central Virginia Expansion. The proposed Central Virginia Network will connect to the recently completed Culpepper Network and span a total of 121.4 route miles through the northwestern half of Virginia connecting back to Northern Virginia through Leesburg to the existing FiberLight network in Ashburn. FiberLight will initially establish open network interconnection points in eleven (11) communities along the 121 mile route and the Culpepper network. Moreover, Central Virginia Network will directly pass through an additional forty-eight (48) towns and unincorporated communities that could rapidly and easily be added to the network in the future. The existing FiberLight Culpepper and Northern Virginia Networks are primarily dark fiber middle mile networks that provide lit services on an individual, customer specific basis. Therefore, it is vital that FiberLight purchase and install the requisite electronics needed to "light" the Culpepper and Northern Virginia Networks in order to provide the broadband users in the rural expansion communities a network path to the various Internet and broadband service providers' interconnection points. FiberLight would use the NTIA grant to construct the 121 route mile network expansion as well as purchase the necessary electronics required to light the existing Culpepper and Northern Virginia Networks. Hence the serving areas accessed by those networks would be included in the overall Central Virginia project. FiberLight would contribute as part of the overall expansion project 144 strands of backbone fiber from the recently completed Culpepper Network. The Central Virginia Expansion will initially provide open interconnection points in seven communities; Front Royal, Winchester, Leesburg, Ashburn, Washington, Purcellville and Sperryville. In addition, FiberLight will be lighting and contributing a portion of the existing Culpepper Network backbone to the overall project. As a result, the communities of Culpepper, Manassas, Gainesville and Warrenton will be included in the project. The communities that are considered to be both rural and underserved are Warrenton, Front Royal, Sperryville, Purcellville and Washington. Moreover, FiberLight's middle mile network will pass directly through an additional forty-eight (48) rural and unincorporated communities that could rapidly and easily be added to the network in the future. The total number of households and businesses located in the Central Virginia Network communities where FiberLight will initially establish open

interconnection points are 56,458 households and 15,823 businesses passed. The total number of all households and businesses passed including communities that are served by FiberLight's existing network that is being contributed to the overall project are 28,673 total households and 8002 total businesses passed. The combined total of community anchor institutions located in the communities where FiberLight will establish open interconnection points is 1,884. Accounted for in the total are 1,310 healthcare facilities; 406 schools and libraries; and 168 public safety institutions. FiberLight will provide for this project both high capacity lit fiber and dark fiber solutions on a wholesale and retail basis over the proposed Central Virginia Network. These solutions will be available to any service provider, commercial enterprise, web services firm, and federal and state government agency. FiberLight also will provide engineering, design, construction and installation services for its customers in support of its metro optical transport products. In addition, FiberLight will provide managed services over the proposed network on both a wholesale and retail basis, to include Wavelengths, Optical Carrier Bandwidth, Metro Ethernet and IP Transit on a private fiber backbone. FiberLight's Metro Ethernet product provides native Ethernet connectivity while the Managed Wavelength and SONET services provide OC-N; 2.5 Gigabyte, and 10 Gigabyte connectivity respectively. FiberLight deploys open, general-purpose networks capable of providing crucial basic infrastructure with unrestricted access to service providers. FiberLight is committed to providing networks that are technology and platform neutral, affordable, and accessible. FiberLight networks are open to Federal and State government agencies, commercial entities, and the full range of existing service providers, regardless of use -- wireline, wireless, or satellite services. FiberLight also adheres to the principles contained in the Federal Communication Commission's Internet Policy Statement (FCC 05-151, adopted August 5, 2005), and does not favor any lawful Internet applications or content over others. The proposed Central Virginia Network will consist of one (1) 432-strand single-mode fiber cable and span a total of 121 route miles through Central Virginia. FiberLight utilizes enhanced single-mode optical cable for both its backbone and distribution networks. This cable is fully compatible with commercially available splicing and connector products and can be spliced to other commercially available single-mode fibers. The step index glass fibers are coated with dual acrylate protective coatings to provide the necessary bending and tensile strength required for handling in the field and to ensure maximum fiber lifetime through increased reliability. Moreover, single-mode optical cable meets or exceeds the highest industry standards set by organizations such as Bell Communications Research (Telcordia), Telecommunications industry Association (TIA), International Electrotechnical Commission (IEC), American Society for Testing and Materials (ASTM), Insulated Cable Engineers Association (ICEA), and the Rural Utilities Service (RUS). FiberLight will utilize Fujitsu 9500 Packet Optical Networking integrated ROADMs to function as the core interconnection devices for enabling broadband Internet and transport. In addition to the core, two aggregation devices will be interconnected to the Fujitsu 9500 at each node location. The first will be the Fujitsu 4500 which is the SONET ADM capable of delivering DS1 to OC-192 circuits. The second device interconnected to the Fujitsu 9500 will be the Brocade CES, which is capable of delivering Layer 2 and Layer 3 connectivity via Ethernet interfaces. Design, engineering, construction, and the operation of high-capacity facility based networks, combined with broad adaptability and openness to innovation, have been hallmarks of FiberLight since its inception in 1993. FiberLight has designed, engineered, and installed over 500,000 duct and fiber miles that include more than 5,300 access points. Moreover, FiberLight has designed and constructed hundreds of laterals extending from the backbone networks to

access various customers and points of interconnection. As a provider of network infrastructure solutions and strategic network design services, FiberLight owns, operates, and maintains extensive networks in the metro areas of Atlanta, GA; Baltimore, MD; Dallas, TX; Houston, TX; San Antonio, TX; Miami, Florida; Tampa, FL; and Washington D.C. FiberLight has existing customer relationships with Qwest, XO, Level 3, Global Crossing, NTT, Orange, Telefonica, Cogent, Verizon Business, Paetec, Nuvox, TW Telecom, Deltacom, Host.Net, 1Vault, WBS Connect, Mzima and expects these companies may utilize the proposed South Florida network. The total cost of the network expansion and the purchase of electronics for lighting the Northern Virginia and Culpeper Networks \$33,246,750. FiberLight will provide a 20% matching cash contribution of the total cost, amounting to \$6,649,350. In addition, FiberLight will contribute 144 fiber-strands from the newly constructed 432 fiber-strand 136 route mile Culpepper Network. The contributed fibers have a non-depreciated fair market value of \$1,000 per fiber mile equivalent to \$19,584,000. FiberLight's combined cash contribution and in-kind payment would total \$26,233,350. a matching contribution equal to 79% of the total project. FiberLight will add ten (10) incremental employees to its current Virginia staff in support of the expanded network presence. In addition, FiberLight's primary contractor has forecast that nineteen (19) jobs will be retained as well as ten (10) incremental jobs created for a total of 39 total jobs retained or created. Intuitively, the service providers that offer services in the expanded FiberLight service areas will add incremental employees to support their operational and sales efforts.