



Client: Vermont Telecommunications Authority (VTA)

Project: "Middle-Mile" Fiber Optic Broadband Network

Location: Vermont

Background

The VTA, an independent agency of the State of Vermont, was created in 2007 for the purpose of expanding access to broadband and mobile telecommunication services for Vermont residents. As a small, rural state with rugged terrain, Vermont has difficulty attracting broadband Internet providers, who are often unable to build profitable business models for serving the state. The VTA's goal was the development of a 773 "middle-mile" fiber-optic network in Southern, Central, and Northeastern Vermont. The project would connect over 340 community anchor institutions in the project area, encompassing seven of Vermont's fourteen counties.

In 2011, the National Telecommunications and Information Administration (NTIA) awarded VTA with a \$33.4 million dollar grant from the Broadband Technology Opportunities Program. This accomplishment allowed VTA to start soliciting Engineering and Design firms to design open fiber optic networks that would provide data transport services up to 1 Gbps to community anchor institutions, government agencies, and "last-mile" providers throughout the project area.

Solution

Matrix Design Group was selected as an engineering and design consultant to design 27.4 miles of fiber optic infrastructure from Hardwick to Irasburg. In addition to the design of the fiber optic network, Matrix provided additional support services including verification of pole line and underground routes, GIS data collection of pole stock and potential customer sites, preparation of make-ready applications, make-ready joint walk services, utility ride-out with all pole attachments, verification of utility make-ready estimates, material selection and budgeting, construction specifications for a draft RFQ, and optical fiber loss budget calculations.

With the help of Matrix, the VTA was able to offer wholesale data transport services to providers such as Internet Service Providers (ISP's), telecommunications organizations and cellular companies. Matrix designed a network that provides 1 Gbps connections, allowing increased build-outs to additional community anchor institutions such as K-12 schools, libraries, colleges, state government offices, and public safety communications networks throughout the state of Vermont.

Results

The network now brings upgraded broadband and cellular service to areas of the state.

This "middle-mile" network gives educational institutions increased opportunities through media-rich on-line learning.

Brings improved patient care through the support of Electronic Health Records, including transfers of large medical imaging files.

Supports an increase in web-based interactions from state residents to state agencies and reduces state costs of travel and data center space through video conferencing and data center consolidation.

Gives the public access to super high-speed broadband service at public libraries and educational institutions.

