Broadband Technology Opportunities Program

NTIA NEPA Environmental Assessment for the Vermont Telephone Company, Inc. Revised VT BELL Project

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Executive Summary

The Vermont Telephone Company, Inc. (VTel) was awarded a Broadband Technologies Opportunities Program (BTOP) grant for a comprehensive community infrastructure project known as the Vermont Broadband Enhanced Learning Link (VT BELL). As proposed, VT BELL will stimulate and support economic growth throughout VT, and nearby Plattsburgh, NY and Lebanon, NH by effectively connecting community partners to the rest of the world via reliable, efficient, and affordable high-speed Internet access (broadband).

The purpose of VT BELL is to address an Internet bandwidth and transport capacity shortage in the existing middle-mile infrastructure within VT. In the broadband Internet industry, the middle-mile is the segment linking the broadband network operator's core network to the local network plant, and this is typically the most expensive segment of the network. This lack of bandwidth impedes the deployment of needed distance learning networks and limits access to Internet2 (the research and education network consortium), large databases and libraries, and health and safety resources necessary to keep VT current comparative to other states in the region. The VT Virtual Learning Cooperative, a consortium of public schools providing online learning opportunities for teachers and students, has limited functionality in many areas due to the lack of bandwidth. VT BELL proposes expanding VTel's 1,400-mile fiber network with a statewide, middle-mile fiber network to increase bandwidth and reduce broadband costs. This network will be capable of delivering GigE (i.e., billion bits-per-second) broadband to more than 108 community anchor institutions, including high schools, hospitals, colleges, universities, community colleges, rural independent telephone companies, larger telephone companies, and public safety entities such as police barracks, thereby addressing the statutory purposes of the BTOP. The project also proposes to build high speed network connectivity to two of VT's highest peaks to enhance the VT Department of Public Safety's existing statewide microwave network for improved emergency communications in mountainous areas. VT BELL will provide reliable broadband to bridge the current rural technology gap and connect to partners and competitors for open access to the VTel network.

Specifically, VT BELL proposes to:

- Install a total of 132 new miles of new fiber optic cable to supplement its existing network and complement the project of another BTOP-funded entity, Vermont Telecommunications Authority, to provide a robust, high speed network statewide with short segments in nearby Plattsburgh, NY and Lebanon, NH;
- Spur affordable broadband access for local consumers and businesses, including as many as 46,372 households and 7,791 businesses, by enabling local Internet service providers to connect to the project's open network;
- Expand services to schools participating in the VT Virtual Learning Cooperative, a program that allows students and teachers across the state to participate in classes not offered in their geographic area; and
- Create an estimated 48 direct full-time job years, 44 indirect job years, and 650 induced full-time jobs. These will be in the form of direct VTel hires, hires of (or work being

performed by) contractors and consultants, and work being generated for all stages of the project, ranging from material manufacturing to project implementation.

VTel will install the proposed 132 miles of new fiber optic cable on existing utility poles and within existing utility rights-of-way (ROWs) by attaching fiber optic cable to existing utility poles carrying telecom and power cables. The project does not require acquisition of real estate, nor does it involve construction of any new telecommunication towers or satellite dishes. VTel will utilize its new Wallingford, VT data center and existing buildings and structures for the placement of necessary electronics and other related equipment. If necessary, aged wooden utility poles will be replaced in kind, concurrent with cable installation. All equipment will be stored and operated from existing roads and ROWs. Because existing utility ROWs will be utilized for the entire length of the project, adverse environmental impacts will be minimized and are anticipated to be minor and only temporary.

The following three alternatives are evaluated in this Environmental Assessment (EA).

1. Preferred Alternative. This involves using the existing utility infrastructure to install 132 miles of fiber optic cable throughout VT, with short segments in Plattsburgh, NY and Lebanon, NH. Installation will be provided by connecting fiber optic cable to existing utility poles in existing ROWs. A total of four 10-foot by 10-foot repeater buildings will be constructed in existing ROWs. These will be placed on a concrete slab, with minimal ground disturbance. Their locations are flexible to ensure avoidance of resource impacts.

2. Buried Cable Alternative. This involves burying approximately 132 miles of fiber optic cable in excavated roadside trenches and within existing utility ROWs. This alternative also includes four 10-foot by 10-foot repeater buildings constructed on concrete slabs within the ROW.

3. No Action Alternative. This alternative does not require any action or construction.

The Preferred Alternative has significantly less environmental impact than the Buried Cable Alternative across the suite of environmental resources evaluated for the purpose of this EA (noise, air quality, geology and soils, water, biological, historical/cultural, and land use). The Preferred Alternative has a greater positive impact on socioeconomic and human health/safety resources due to its relatively simpler installation. Potential impacts to aesthetic and visual resources as well as infrastructure are similar. The Buried Cable Alternative is significantly more expensive and disruptive, and likely would not be attainable within the time constraints of the project. The No Action Alternative does not meet the project goals/objectives. Following is a summary of the potential effects of each alternative on the resources evaluated.

RESOURCE	PREFERRED	BURIED CABLE	NO ACTION
Noise	Minor, temporary impacts	More significant impacts	No change
Air Quality	Minor, temporary impacts	Minor, temporary impacts	No change
Geology and Soils	minor, temporary impacts	More significant impacts	No change
Water Resources	Minor, temporary impacts	More significant impacts	No change
Biological Resources	Minor, temporary impacts	More significant impacts	No change
Historic/Cultural Resources	No effect	More significant impacts likely	No change
Aesthetic/Visual	No effect	No effect	No change
Land Use	No effect	No effect	No change
Infrastructure	No effect	More significant, temporary impacts possible	No change
Socio-Economic	Positive effect	Positive effect	Negative effect due to continued lack of access to broadband
Human Health and Safety	No adverse effect	Minor effects possible	No change
Climate, Greenhouse Gases, and Global Warming	Minor effect	Minor effect	No effect
Cumulative	Minor impacts	More significant impacts	No change