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National Telecommunications and Information Administration
Broadband Technology Opportunities Program
1401 Constitution Avenue, N.W.
Washington, D.C. 20230

NEPA ENVIRONMENTAL ASSESSMENT

For

Virginia Tech to Bedford Broadband Project

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ACRONYM LIST

ACRONYM	DESCRIPTION
APE	Area of Potential Effect
DNH	Department of Natural Heritage
FEMA	Federal Emergency Management Agency
HUC	Hydrologic Unit Code
MBC	Mid-Atlantic Broadband Cooperative
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NPL	National Priorities List
NTIA	National Telecommunications and Information Agency
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Administration
SCU	Stream Conservation Unit
SHPO	State Historic Preservation Officer
US ACOE	United States Army Corps of Engineers
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VCI	Virginia Council on Indians
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDHR	Virginia Department of Historical Resources
VDOT	Virginia Department of Transportation
VMRC	Virginia Marine Resources Commission
VTIA	Virginia Telecommunications Industry Association

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1.0 Executive Summary

The Virginia Tech to Bedford fiber optic line installation is part of the Middle Mile Expansion for Southern Virginia. It will allow for high speed internet service to currently unserved and underserved populations of southwestern Virginia. The project is approximately eighty-five miles long through the counties of Bedford, Botetourt, Craig, Giles, and Montgomery. The Proposed Fiber Optic Line Route Map is located in Appendix A.

There are two alternatives examined in this assessment:

- Not installing the fiber optic line (no action alternative)
- Installing the line in the public right-of-way along the determined route (preferred alternative).

The impact of each alternative is examined on eleven resource areas: noise, air quality, geology and soils, water resources, biological resources, historical and cultural resources, aesthetic and visual resources, land use, infrastructure, socioeconomic resources, and human health and safety. Impacts on each alternative are summarized in the following table. Full descriptions of resources can be found in Section 4.0 and impacts in Section 5.0.

Summary of Findings		
Resource	**Preferred Alterative**	**No Action Alternative**
Noise	Temporary associated with construction activities Possibility for less traffic noise if high speed internet leads to less driving.	No change in current noise levels.
Air Quality	Short-term increase in emissions from construction equipment and vehicles used by workers to access work site. Dust from installation. After installation, possibility for less traffic emissions due to telecommuting.	No increase in emissions or dust creation. No opportunity for reduction in air emissions.
Geology and Soils	Soil disturbed for buried portions of the fiber optic line in previously disturbed public right-of-way. Portions of proposed route located in potential karst areas that will require special care if encountered.	No effect on soil erosion or underlying geology.

Summary of Findings		
Resource	**Preferred Alterative**	**No Action Alternative**
Water Resources	Runoff from disturbed soil and contamination from construction equipment may affect surface water. Virginia Marine Resources Commission permit for crossing navigable waterways required. Permit from Army Corps of Engineers required; if wetlands encountered, delineation required.	No effect on surface water, groundwater or wetlands.
Biological Resources	Land disturbance during buried installation may eliminate habitat temporarily until vegetation regrowth. Potential during construction for sediment runoff into surface water that may affect aquatic habitats. Requires strict adherence to erosions and sediment controls per plan. Construction design to protect endangered species.	No adverse effects on habitat and biological resources.
Historical and Cultural Resources	No effect on historical resources.	No effect on historical resources.
Visual and Aesthetic Resources	Temporary disturbance due to installation and vegetation regrowth. Buried portions will not be visible and overhead pole installation will not significantly add to view obstruction. Huts are located in areas with existing development and not expected to adversely impact visual resources.	No impact on visual and aesthetic resources.

Summary of Findings		
Resource	**Preferred Alterative**	**No Action Alternative**
Land Use	Installation to occur on existing public or utility rights-of-way. MBC to enter into an agreement to attach to existing overhead utility structures. MBC to amend the current MOU with VDOT regarding the use of public right-of-way. MBC to enter into a resource sharing agreement with VDOT for areas with limited access right-of-way. Acquire land for hut locations.	No impact on land use.
Infrastructure	Accessibility of high speed internet to an underserved area. Construction waste along route and the hut sites. Use accepted practices for marking construction activities for motorists. Care must be taken to protect power, telephone and cable lines on overhead poles and all utilities buried in the right-of-way during installation.	No benefit of high speed internet access. No impact on waste generation, roads or other utilities.
Socioeconomic Resources	Provide jobs during installation and for maintenance. Distance learning opportunities for K-12 and post-secondary education. Attract businesses to area, leading to job creation.	No benefits from installation or access to high speed internet.