

**National Telecommunications and Information Administration  
Broadband Technology Opportunities Program  
Finding of No Significant Impact  
Bristol Virginia Utilities Authority, Southwest Virginia Middle Mile Project**

**Summary**

Bristol Virginia Utilities Authority (BVUA) applied to the Broadband Technology Opportunities Program (BTOP) for a grant to install 388 miles of new fiber. The new middle mile infrastructure will provide last mile service providers the opportunity to connect to 120 community anchor institutions (CAIs), 107,874 households, and more than 3,800 businesses. While the new network will be a hybrid of aerial and buried fiber, approximately 95% of the fiber will be buried. The proposed action passes through eight counties in Virginia, and is referred to as the Southwest Virginia Middle Mile Project (Project).

The National Telecommunications and Information Administration (NTIA) awarded a grant for the Project to BVUA, through BTOP, as part of the American Recovery and Reinvestment Act (ARRA). The funding must be obligated and the Project completed within three years. This timeline is driven by the laws and regulations governing the use of this ARRA grant funding.

BTOP supports the deployment of broadband infrastructure in unserved and underserved areas of the United States and its Territories. As a condition of receiving BTOP grant funding, recipients must comply with all relevant Federal legislation, including the National Environmental Policy Act of 1969 (NEPA). Specifically, NEPA limits the types of actions that the grantee can initiate prior to completing required environmental reviews. Some actions may be categorically excluded from further NEPA analyses based on the specific types and scope of work to be conducted. For projects that are not categorically excluded from further environmental review, the grant recipient must prepare an Environmental Assessment (EA) that meets the requirements of NEPA. After a sufficiency review, NTIA may adopt the EA, use it as the basis for finding that the project will not have a significant impact on the environment, and issue a finding of no significant impact (FONSI). Following such a finding, the BTOP grant recipient may then begin construction or other activities identified in the EA as the preferred alternative, in accordance with any special protocols or identified environmental protection measures.

BVUA completed an EA for this Project in January 2011. NTIA reviewed the EA, determined it is sufficient, and adopted it as part of the development of this FONSI.

The Project includes:

- Installing a hybrid broadband network of aerial and buried fiber through eight counties in southwestern Virginia (Bland, Buchanan, Dickenson, Russell, Smyth, Tazewell, Washington, and Wythe counties);
- Installing the primarily underground fiber network in previously disturbed Virginia Department of Transportation (VDOT) and local rights-of-way (ROWs), as well as approximately five miles along the Virginia Creeper Trail via plowing and directional boring methods;

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- Installing aerial portions of the network by attaching to bridges or existing pole lines, replacing or installing new poles in VDOT ROWs only when necessary; and
- Placing seven prefabricated cabinets in the transportation ROW.

Based on a review of the analysis in the EA, NTIA has determined that the Project, implemented in accordance with the preferred alternative, and incorporating best management practices (BMPs) and protective measures identified in the EA, will not result in any significant environmental impacts. Therefore, the preparation of an EIS is not required. The basis for this determination is described in this FONSI.

Additional information and copies of the Executive Summary of the EA and FONSI are available to all interested persons and the public through the BTOP website ([www2.ntia.doc.gov/](http://www2.ntia.doc.gov/)) and the following contact:

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### **Purpose and Need**

The purpose of the Project is to bring middle mile broadband service to unserved and underserved communities in Virginia. The Project will deploy fiber in areas where, to date, it has not been economically feasible to install telecommunications infrastructure. The middle mile infrastructure will reach approximately 120 CAIs. The network will also pass through eight counties with a combined total population of 233,174, including 107,874 households, and over 3,800 businesses

### **Project Description**

The Project involves installing 388 miles of middle mile fiber and placing seven prefabricated cabinets, to serve as points of presence (POPs), throughout southwestern Virginia. The network will be comprised of both buried and aerial fiber. Approximately 95% of the fiber will be buried in previously disturbed land, and 5% will be installed on overhead utility infrastructure. Construction will take place within VDOT and local ROWs, with the exception of approximately five miles being installed along the Virginia Creeper Trail.

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The underground facilities will be installed mainly by plowing or directional boring. A plowing blade, no more than 3 inches wide, acts like a knife slicing a narrow trench into which the new underground conduit and cable will be placed. All underground fiber will be placed in conduit at 30" to 36". The conduit will be marked with warning tape affixed to the top of the conduit. The route will be buried using the plowing method, except when limitations make plowing physically impossible, such as across driveways. In such areas, BVUA will use directional boring to install underground cable. This method involves drilling a horizontal cable pathway from one access point along the route to another, installing conduit to house the cable, and then pulling the cable back through the conduit. Construction crews will return all of the affected area to its original condition. BVUA estimates that 85% of the buried route will be plowed, and 15% will be bored.

When the terrain does not allow BVUA to place the fiber underground, it will be installed aerially. The fiber will be placed on existing power poles or on secondary road bridges when they are available for use. If poles and secondary road bridges are not available, BVUA will install new poles in VDOT ROW on previously disturbed land. When poles need to be replaced, the owner of the pole will replace and dispose of the old pole.

In addition, seven prefabricated cabinets (3 feet by 3 feet by 4 feet in size) will be placed in VDOT ROWs. These POPs will be located in Bland County, Buchanan County, Russell County, Smyth County, Tazewell County, and Washington County (two locations).

### **Alternatives**

The EA includes an analysis of the alternatives for implementing the Project to meet the purpose and need. NTIA also requires that an EA include a discussion of the no action alternative. The following summarizes the alternatives analyzed in the EA.

*Alternative 1 – Hybrid Fiber Installation (Preferred Alternative).* As noted in the Project Description, this effort will include installation of approximately 388 miles of cable. The new fiber optic cable will be installed primarily underground, but will be hung aerially on pole lines and attached to bridges along approximately 5% of the route.

*No Action Alternative.* No action also was considered. This alternative represents conditions as they currently exist in southwestern Virginia. Under the no action alternative, new fiber middle mile infrastructure would not be constructed. Many rural communities would continue to be unserved or underserved with respect to broadband internet access. Additionally, broadband services would not be provided to CAIs in the Project area. The EA examined this alternative as the baseline for evaluating impacts related to other alternatives being considered.

*Alternatives Considered But Not Carried Forward.* BVUA considered the alternative of installing a wireless telecommunications network. However, wireless technology is not feasible because of the high cost, and the hilly terrain in the Project area makes it difficult to propagate a wireless signal. The all-aerial option was also considered infeasible because of the high cost for pole installation and potential severe weather impacts to the network. The all underground

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option was infeasible because there are small sections of land that are environmentally or culturally sensitive and need to be crossed aerially.

### **Findings and Conclusions**

The EA analyzed existing conditions and environmental consequences of the preferred alternative and the no action alternative in 11 major resource areas, including Noise, Air Quality (including greenhouse gas [GHG] emissions), Geology and Soils, Water Resources, Biological Resources, Historic and Cultural Resources, Aesthetic and Visual Resources, Land Use, Infrastructure, Socioeconomic Resources, and Human Health and Safety.

#### ***Noise***

This Project will have no impacts on noise during long-term operation. However, short-term increases in ambient noise levels are expected during the construction period. Noise created by machinery used during installation will be temporary and localized in nature. To reduce the short-term noise impacts, construction activities will occur during VDOT-regulated highway working hours. Based on these considerations, no significant impacts on noise are expected to occur as a result of Project implementation.

#### ***Air Quality***

Potential impacts to air quality associated with this Project will be limited to the construction period. Fiber optic cable installation will result in negligible fugitive dust emissions because plowing and directional boring techniques result in only minor disturbance to the ground surface. There will also be negligible fugitive dust emissions resulting from the installation of seven POPs. A short-term minor increase in the use of fossil fuel and associated GHG emissions will occur as a result of Project construction. Construction of the planned network is not expected to have significant adverse impacts on air quality.

#### ***Geology and Soils***

The Project will be installed primarily in VDOT and local ROWs, along previously disturbed road way ditches and utility corridors. The cable will be installed in these locations to, among other considerations, minimize impacts to geologic and soil resources. In locations where replacement or new poles are required, a small amount of earth will be disturbed for pole placement. Both plowing and directional boring techniques result in very minor, temporary disruption to the soils. There will also be only a minor impact to the soil from the installation of seven 3-foot by 4-foot POPs. In a letter dated April 8, 2010, the Virginia Department of Conservation and Recreation (VDCR) requested that BVUA minimize potential adverse impacts to sensitive karst features and caves through mitigation and avoidance strategies. By remaining in VDOT and local ROW, BVUA will minimize or eliminate any impact on karst features and caves. If karst features such as sinkholes, caves, disappearing streams, and large springs are encountered during implementation of the Project, BVUA will notify and coordinate activities with the VDCR through the Karst Protection Coordinator. Consequently, the Project is not expected to result in significant impacts on geology or soils.

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***Water Resources***

Project construction activities could result in short-term minor impacts on water resources within the Project area. To address these potential impacts, appropriate measures will be taken to control erosion and sediment discharge in accordance with the current edition of the Virginia Erosion Sediment Control Handbook and the Virginia Erosion and Sediment Control Regulations. At the approximately 400 stream crossings planned for this Project, a joint permit application (JPA) will be submitted to the Virginia Marine Resources Commission, U.S. Army Corps of Engineers, Virginia Department of Environmental Quality (VDEQ), and local wetlands boards. All entities were contacted and are aware of this Project and the JPA for all crossings. In a letter dated March 19, 2010, the VDEQ stated that there were no long-term adverse impacts to water quality anticipated from this Project. By implementing erosion and sediment control BMPs, BVUA will be able to construct the network with little or no impact on water resources in the Project area.

***Biological Resources***

The preferred alternative will result in minor impacts on biological resources. Noise and human activity associated with fiber installation are expected to disturb some wildlife species, but these effects will be minor and temporary. Some disturbance to the ground surface and vegetation will also occur during construction activities. This disturbance will be largely limited to previously disturbed VDOT and local ROWs. In a letter dated December 23, 2010, the U.S. Fish and Wildlife Service (USFWS) concurred with BVUA's determination that the Project is not likely to adversely affect the federally listed species or designated critical habitat identified along the Project route, with the exception of the endangered smooth coneflower (*Echinacea laevigata*). The USFWS requested that BVUA conduct a habitat assessment to determine if there was suitable habitat for the smooth coneflower along the Project route. A habitat analysis was conducted and it was determined that there were no areas where the endangered smooth coneflower habitat appeared to be present. On January 24, 2011, the USFWS stated that the smooth coneflower does not currently occur at the Project site and therefore, the Project is not likely to adversely affect this species. Based on these analyses and following the guidance of the commenting agencies, BVUA will be able to construct the fiber network with no significant adverse impacts on biological resources.

***Historic and Cultural Resources***

A detailed Project description was provided to the Virginia State Historic Preservation Office (SHPO) for review and comment. In a letter dated March 30, 2010, the Virginia Department of Historic Resources (VDHR) stated that the Project would have no adverse effect on cultural resources if outlined protective measures were incorporated. Protective measures were identified to address potential impacts to unmarked cemeteries along the Project route. In lieu of doing an extensive cemetery reconnaissance, BVUA developed BMPs in coordination with the Department of Commerce, VDHR, and VDOT to address these concerns. In a letter dated January 12, 2011, VDHR confirmed these BMPs would be protective. During the course of Project construction, BVUA will adhere to these BMPs to protect unmarked cemeteries. VDHR also identified nine archeological sites of concern along the project route. VDHR requested that an avoidance plan be developed for these sites. BVUA hired a qualified archaeologist to perform

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site assessments and create an avoidance plan for the nine sites. A detailed avoidance plan was provided to VDHR on November 10, 2010 and VDHR responded that, if implemented in accordance with the avoidance plan, the Project would have no adverse effect. BVUA will adhere to the avoidance plan for the nine identified archeological sites of concern. In the event that previously unidentified archaeological resources are discovered (historic, prehistoric, cemetery, etc.), all construction work involving subsurface disturbance will be halted and the Senior Policy Analyst, Division of Resource Services and Review, at VDHR will be immediately contacted.

Through the Tower Construction Notification System, NTIA provided Project details to seven tribes interested in the Project's geographical location (southwestern Virginia). Of the seven tribes notified, three tribes responded that they had no objections or concerns regarding the Project. However, if any human skeletal remains or any protected Native objects are uncovered during construction, construction should stop immediately, and state and tribal representatives should be contacted.

Based on these consultations, guidance from the commenting agencies, and if implemented in accordance with the BMPs and plans, the Project is not expected to have significant adverse impacts on historic and cultural resources.

***Aesthetic and Visual Resources***

The BVUA Project involves primarily burying fiber in VDOT and local ROWs, and attaching fiber to bridges or existing pole lines; poles will be replaced or new poles will be installed as necessary. Therefore, only minor long-term impacts on aesthetic and visual resources are expected from the above-ground portions of the project. The Project route is also located along 5.5 miles of the Virginia Creeper Trail within the George Washington and Jefferson National Forest. BVUA submitted an application to the U.S. Department of Agriculture, Forest Service (USDA-FS) on December 20, 2010 for their NEPA review and approval for this portion of the Project route. Construction will not begin in the National Forest until the USDA-FS completes its review of alternate routes and permits are obtained from that agency for construction in the National Forest. Consultations with USFWS and VDHR determined that installing this portion of the infrastructure within the National Forest will have no significant impact on environmental or cultural resources. The Project will have a short-term, minor, and temporary impact on aesthetic and visual resources due to the presence of construction equipment and limited soil disturbance during installation activities. Accordingly, the preferred alternative is not expected to have a significant adverse impact on aesthetic and visual resources in the Project area.

***Land Use***

This Project will be implemented in previously disturbed VDOT and local ROWs. Although there is prime farmland in the counties the Project will pass through, the Natural Resources Conservation Service (NRCS) conducted a Farmland Conversion impact rating for this Project. The NRCS determined that the Project area does not contain prime, unique statewide or local important farmland. No land use changes will occur as a result of Project implementation. Therefore, the Project will have no significant impact on land use.

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***Infrastructure***

Project construction activities will result in a temporary interruption of traffic flow along roads and at railroad crossings along the Project route. These interruptions are short-term and will subside when installation of the fiber is complete. The Project will improve communications infrastructure and is expected to result in improved transfer of information between CAIs; businesses; and individuals residing within the communities along the Project route. Overall, the Project will have a positive impact on infrastructure in southwestern Virginia.

***Socioeconomic Resources***

The Project will provide improved communications infrastructure to residents who lack access to broadband services in southwestern Virginia. The middle mile fiber backbone will also benefit these communities by providing broadband capabilities to over 120 CAIs. An increase in both short-term and long-term employment opportunities are also anticipated as a result of BVUA's Project. The Project will have positive impacts on socioeconomic resources.

***Human Health and Safety***

Two hazardous waste sites were identified in the vicinity of the Project route; Levisa Fork polychlorinated biphenyl site and Powers Boss Batteries site. BVUA will notify its contractors of these hazardous waste sites and they will be avoided. If contractors encounter anything that appears to be a hazardous waste site, construction activities will cease and the VDEQ and Environmental Protection Agency will be contacted immediately.

All traffic control during this Project will be conducted according to "Work Zone Safety: Guidelines for Temporary Traffic Control," published by VDOT in June 2007. By following VDOT's specifications and regulations, workers and machines should always be on the shoulder of the traffic lane opposite from where the traffic will be routed. This practice will keep the traveling public away from the construction activities. The Project will also use pilot vehicles, flag crews, barrels, lane closures, and signage to protect construction workers and the public.

With implementation of these protocols, the new fiber build will not generate any significant adverse worker or traffic-related health or safety issues.

***Cumulative Impacts***

As described above, the Project will not have significant adverse impacts on any of the environmental resource areas evaluated in the EA. BVUA will work with VDOT and local area water service providers to identify the proposed time periods during which they will be implementing maintenance activities, so as to avoid those timeframes in the project plan and during project implementation. As such, no cumulative impacts on the environment are anticipated.

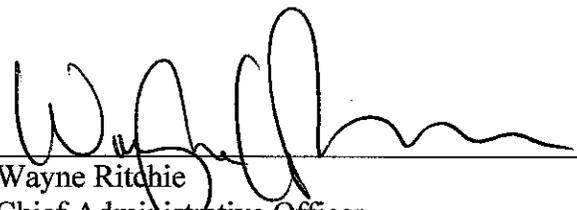
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**Decision**

Based on the above analysis, NTIA concludes that constructing and operating the Project as defined by the preferred alternative, identified BMPs, and protective measures, will not require additional mitigation. A separate mitigation plan is not required for the Project. The analyses indicate that the proposed action is not a major Federal action that will significantly affect the quality of the human environment. NTIA has determined that preparation of an EIS is not required.

Issued:



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2/27/2011  
Date