



Environmental Assessment for BVU Authority's Southwest Virginia Middle- Mile Project

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Prepared For:

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TABLE OF CONTENTS

Table 1: List of Acronyms

1.1 EXECUTIVE SUMMARY

1.2 Chapter 1 – Purpose and Need

Figure 1: Proposed Network for Southwest Virginia Middle-Mile Project

1.3 Chapter 2 – Proposed Action

1.3.1 Project Description

1.3.2 Alternatives

1.3.3 Alternatives Considered but Eliminated from Further Discussion

1.3.4 Preferred Alternative

1.4 Chapter 3 – Existing Environment

Figure 2: PM and Ozone Nonattainment and Maintenance Areas for the US

Table 2: Threatened or Endangered Species in Project Area.

Figure 3: BVUA Project Area in National Forest Land

Table 3: Superfund Sites in Build Area

1.5 Chapter 4 – Environmental Consequences

1.6 Chapter 5 – Findings and Conclusions

1.7 Chapter 6 – List of Agency Contacts, EA Preparers, and EA Contributors

1.8 Chapter 7 – Appendices

Appendix A- Maps of Project Build

Appendix B- List of Federally Threatened or Endangered Species

Appendix C- Records for Historic and Prehistoric Sites in Build Area

Appendix D- Agency Correspondence

Appendix E- Best Management Practices (BMPs) for Unmarked Cemeteries

Appendix F- EPA Air Quality Determination for the Project Area

Appendix G- EPA Water Quality and Use Assessments for the Project Area

Appendix H- Letters of Support

Appendix I- Received Permits

Appendix J- Internal EA Approval

Table 1: List of Acronyms

<p>AEP- Appalachian Electric Power</p> <p>BTOP- Broadband Technology Opportunities Program</p> <p>BVUA- Bristol Virginia Utilities Authority</p> <p>CERCLIS- Comprehensive Environmental Response, Compensation, and Liability Information System</p> <p>CPPDC- Cumberland Plateau Planning District Commission</p> <p>CSX- a leading supplier of rail-based freight transportation in North America</p> <p>DOC- Department of Commerce</p> <p>DWDM- Dense Wavelength Division Multiplexing</p> <p>EA- Environmental Assessment</p> <p>EPA- Environmental Protection Agency</p> <p>FONSI- Finding of No Significant Impact</p> <p>FPPA- Farmland Protection Policy Act</p> <p>GBPS- Gigabytes per second</p> <p>HDPE- High Density Polyethylene</p> <p>JPA- Joint Permit Application</p> <p>NFRAP- No Further Remedial Action Planned</p> <p>NHPA- National Historic Preservation Act of 1966</p> <p>NPL- National Priorities List</p> <p>NRCS- Natural Resources Conservation Service</p> <p>NTIA- National Telecommunications and Information Administration</p> <p>OC- Optical Carrier</p> <p>OSHA- Occupational Safety and Health Administration</p> <p>PCB- Polychlorinated biphenyl</p> <p>PoP- Point of Presence</p> <p>ROW- Right-of-Way</p> <p>SHPO- State Historic Preservation Officer</p> <p>TCNS- Tower Construction Notification System</p> <p>THPO- Tribal Historic Preservation Officer</p> <p>USACE- United States Army Corps of Engineers</p> <p>USDA- United States Department of Agriculture</p> <p>USDAFS- United States Department of Agriculture Forest Service</p> <p>USFWS- United States Fish and Wildlife Service</p> <p>VDA- Virginia Department of Aviation</p> <p>VDCR- Virginia Department of Conservation and Recreation</p> <p>VDEQ- Virginia Department of Environmental Quality</p> <p>VDGIF- Virginia Department of Game and Inland Fisheries</p> <p>VDH- Virginia Department of Health</p> <p>VDHR- Virginia Department of Historic Resources</p> <p>VDOT- Virginia Department of Transportation</p> <p>VEDP- Virginia Economic Development Partnership</p>
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1.1 EXECUTIVE SUMMARY

BVU Authority (BVUA) in Bristol, VA has been awarded a grant funded by the American Recovery and Reinvestment Act of 2009, through NTIA's Broadband Technology Opportunities Program, to expand its existing broadband infrastructure in southwest Virginia. The expansion will take place in the following eight counties: Bland, Buchanan, Dickenson, Russell, Smyth, Tazewell, Washington, and Wythe.

The primary issue addressed by this project is to provide the possibility for broadband connectivity to 120 anchor institutions in the service area, including community colleges, universities, hospitals and health care facilities, libraries, public schools, emergency services facilities and government entities. This grant project consists strictly of middle-mile infrastructure, and as such, the objective is to provide broadband data services through a diverse and redundant carrier-class network through eventual last-mile providers (BVUA included). The expansion of the existing fiber-optic network will allow BVUA to reach all of these anchor institutions in the 8-county area, as well as bring connectivity to additional businesses, industries, and residential customers.

The eight counties included in this proposed project have 107,874 households, with a population of 233,174, and over 3,800 businesses. In addition to the aforementioned community anchor institutions, the area includes other key locations like incubator sites for economic development, industrial and technology parks, a nationally recognized state park, a dam, airport, fairgrounds, and many historical and cultural sites.

BVUA will construct approximately 388 miles of diverse, carrier-class fiber optic backbone with necessary network infrastructure. The construction will take place within VDOT and local rights-of-way, buried in previously disturbed land and installed on overhead utility infrastructure. The network transport system consists of a DWDM (Dense Wave Division Multiplex) optical protected ring. This system is configured for 100Gbps, which can be upgraded to 400Gbps, and supports 2.5Gbps-40Gbps wavelengths, OC3-OC-192 optical bandwidth, 1Gbps-10Gbps Ethernet and fiber channel tributary interfaces. Deep fiber deployment and a state-of-the-art transport solution can provide multitudes of custom access solutions.

The expansion will consist of a 144-count fiber with 7 Points of Presence (PoPs) strategically located along the new routes. This network will continue to be interconnected with diverse and redundant Internet and communications carriers. With this open-access network, multiple data, voice and video providers will be able to provide services to both residential and non-residential customers including the proposed anchor institutions by connecting in at BVUA PoP sites.

BVUA has contacted interested state and federal agencies (environmental, cultural, and tribal), as well as consulted with NTIA Environmental Staff on overall project guidance. Each agency was provided a project description and maps of the route and was given

the opportunity to comment on the project and its potential effect on the resources in question. The agencies contacted were:

- National Telecommunications and Information Administration (NTIA) and the Department of Commerce (DOC)- for guidance on the EA process
- Virginia Department of Historic Resources (VDHR)- State Historic Preservation Officer (SHPO)
 - Gray & Pape, Inc.- Archaeologist to consult on VDHR-identified sites
- All tribes through the Tower Construction Notification System (TCNS)
- United States Fish and Wildlife Service (USFWS)
- Virginia Department of Game and Inland Fisheries (VDGIF)
- Virginia Department of Health (VDH)
- United States Department of Agriculture (USDA)
- Virginia Department of Environmental Quality (VDEQ)
- Virginia Department of Aviation (VDA)
- Virginia Economic Development Partnership (VEDP)
- Virginia Department of Conservation and Recreation (VDCR)
- United States Army Corps of Engineers (USACE)
- Virginia Marine Resource Commission (VMRC)
- Virginia Department of Transportation (VDOT)
- United States Forest Service (USDAFS)

These agencies have subsequently submitted responses or requirements for permits related to the Southwest Virginia Middle-Mile Project. These responses may be found in Appendix D- Agency Consultations.

During the decision-making stage of this project, BVUA considered 5 alternatives: all wireless option, all underground fiber option, all aerial fiber option, a combination of both aerial and underground fiber, and the no action alternative. A no action impact will mean that community anchor institutions, businesses, industries, and residential customers would not have access to broadband data services that could serve their needs for a diverse and redundant network, which this proposed project will provide them. The no action alternative would offer a slightly more positive impact in most resource areas (noise, air quality, geology and soils, water, biological, and land use), but would not accomplish the project objectives. All wireless would not provide a strong middle-mile network, and the network could not be completely aerial or completely underground due to issues of resources, terrain, and cost feasibility. Therefore, the preferred alternative was deemed to be a combination of about 95% underground fiber and 5% aerial fiber, based on the terrain and weather of Southwest Virginia and the necessity of avoid certain cultural and environmental resources. The network will be buried in VDOT rights-of-way or hung on poles. Consequently, no new disturbance will occur where there is not already a roadway. The preferred alternative would have a more positive impact than the no action alternative in the area of socioeconomic

resources, and would have only minimal impact (that would subside after construction) on all other resource area. It will not affect any historic or prehistoric sites and will not impact any tribal lands.

After coordination with these many State and Federal agencies, as well as coordination with an archaeologist on potential historic and prehistoric sites in the build area, BVUA believes the Southwest Virginia Middle-Mile Project will have no significant environmental impact and should proceed as planned after review and Finding of No Significant Impact (FONSI) by NTIA.

** This draft of BVUA's environmental assessment now analyzes impacts to section W4 of the route, a section within the George Washington and Jefferson National Forest. These analyses were not in the original draft of the EA; however, subsequent conversations with the USDA Forest Service have negotiated an alternate course for that route to mitigate impact to National Forest Land. The application has been submitted to and accepted by the USDAFS and the permitting process is now underway.