Summary

The Executive Office of the State of West Virginia, through the West Virginia Department of Commerce (WVDOC), applied to the Broadband Technology Opportunities Program (BTOP) for a grant to install 915 miles of fiber optic cable throughout West Virginia to provide middle mile infrastructure in all 55 counties. This infrastructure will provide direct internet service to up to 1,064 community anchor institutions (CAIs) across the state. The grant provides for installation of redundant fiber within existing utility corridors inside six existing state buildings. The grant also includes installation of 66 miles of fiber to complete a 580-mile circuit between the National Radio Astronomy Observatory (NRAO) in Pocahontas County to the West Virginia University (WVU) campus in Marion County. Buried and aerial fiber optic cable will be installed within West Virginia Department of Highways (WVDOH) rights-of-way (ROW) and along city streets. Finally, this grant includes construction of 12 new self-supporting telecommunications towers to expand the State's wireless network. Telecommunications equipment at the 98 existing towers will also be upgraded to ensure reliability and adequate level of service. This proposed action is referred to as the West Virginia Statewide Broadband Infrastructure Project – Middle Mile (Project).

The National Telecommunications and Information Administration (NTIA) awarded a grant for the Project to the Executive Office of the State of West Virginia, 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 recipient 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.

The Executive Office of the State of West Virginia, through the WVDOC, completed an EA for this Project in February 2011. NTIA reviewed the EA, determined it is sufficient, and adopted it as part of the development of this FONSI.

The Project includes:

- Installation of 915 miles of fiber within existing WVDOH ROWs and along city streets in all 55 counties in West Virginia (815 miles above ground and 100 miles below ground);
- Installation of 66 miles of fiber and equipment to complete a 580-mile circuit from the NRAO in Pocahontas County to the WVU campus in Marion County (51 miles above ground and 15 miles below ground);
- Installation of redundant fiber in existing utility corridors inside six state buildings;
- Construction of 12 new telecommunications tower sites, including the self-supporting tower structures, ground equipment shelters, propane tanks and emergency generators, access roads, and fenced compounds;
- Replacement of radio equipment at 98 existing towers in the Microwave Radio System network; and
- Connection of up to 1,064 CAIs across the state to the network.

Based on a review of the analysis in the EA, NTIA has determined that the Project, if implemented in accordance with the preferred alternative, the executed programmatic agreement (PA), best management practices (BMPs), and other 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/) and the following contact:

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Purpose and Need

The purpose of this Project is to extend the reach and density of broadband network access throughout West Virginia. The entire state of West Virginia is currently categorized as underserved, limiting the potential for growth. This Project will improve access to, and use of, reliable broadband service by residents (including vulnerable populations), schools, healthcare organizations, public safety and law enforcement entities, libraries, governmental offices, and other community support agencies. Up to 1,064 CAIs will be directly connected to the network for immediate access to the internet service. This Project is expected to stimulate the demand for broadband services, efficiency and reliability of communications, economic growth, and employment opportunities.

Project Description

The Executive Office of the State of West Virginia will install approximately 915 miles of fiber optic cable to provide middle mile backbone services throughout the state. This build will include 815 miles of aboveground and 100 miles of underground fiber installation. Approximately 66 miles of fiber will also be installed between the NRAO in Greenbank and the WVU campus in Morgantown, Marion County to complete a network ring of over 580 miles in total length. Approximately 51 miles of this new fiber cable will be installed aerially, and an additional 15 miles of underground fiber will be installed in locations where aboveground cable is prohibited. The new cable will be installed along existing city streets and within previously disturbed WVDOH ROWs.

Buried fiber cable will be installed via excavation, placement of fiber, and backfilling of the excavated soil to bury the cable. The cable will be placed at a depth of approximately one foot below the ground surface, with the surface disturbance limited to six inches in width along the length of the underground route. Tracked plows, vibratory plows, backhoes, horizontal directional drilling (HDD) machines, cable reel trucks and trailers, and lift vehicles will be used for buried fiber installation and aerial placement. Staging areas will be located within previously disturbed areas near the construction sites.

To support new aerial infrastructure, approximately 311 new poles will be erected using a drilling machine, with excess soil either removed or mounded at the base of the new pole. All new poles will be within existing ROWs or along city streets. Signal regeneration equipment will be installed in key locations around the ring network, and termination equipment will be installed in existing server rooms at the NRAO and on the WVU campus. Up to 1,064 end users will be connected to the network using new or existing fiber infrastructure.

In addition to the backbone fiber, redundant fiber cable will also be installed within existing utility corridors at six state buildings. This portion of the Project will increase reliability and interconnection for the most critical nodes on the middle mile backbone. These critical nodes are

located at the PK Mountain Tower in Harrison County; Building 5 at the State Capitol Complex in Kanawha County; the Flatwoods in Braxton County; the Wheeling Courthouse in Ohio County; the Jefferson 911 Center in Jefferson County, and the 911 Center in Welch, McDowell County. No exterior fiber will be required for this portion of the Project.

Finally, this Project includes construction of 12 new self-supporting tower sites in Brooke, Calhoun, Gilmer, Greenbrier, Jackson, Mingo, Nicholas, Pendleton, Pocahontas (two sites), Roane, and Upshur Counties. The towers will range in height between 150 and 400 feet and will be constructed within fenced compounds up to 125 feet by 125 feet in size. Each compound will include a 10-foot by 20-foot equipment shelter, meter board, emergency generator, and 1,000gallon propane aboveground storage tank. Two propane tanks and two emergency generators will be installed at the Sharps Knob 911 site in Pocahontas County. No new fiber will be needed at any of the tower sites, as microwave signals will be transmitted to existing receiving equipment at the nearest existing central office building. Existing access roads and electrical utility corridors will be used where available, but new roads and electric service connections will be constructed at the sites in Brooke, Greenbrier, Mingo, Pendleton, and Roane Counties. Any existing network infrastructure (e.g., towers, fencing, equipment buildings) removed from the Sharps Knob 911 site in Pocahontas County during construction of the new tower facility will be appropriately stored for potential future use. Staging areas for tower construction will be within or immediately adjacent to the disturbed footprint of each tower. Concurrent with installation of new telecommunications equipment at the new towers, additional radio equipment (4DS3, 180 MB capacity, licensed microwave system) at the 98 existing towers in the Microwave Radio System network will be installed.

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 Installation of Underground Fiber, Aerial Fiber, and Microwave Towers (Preferred Alternative). The preferred alternative for this Project involves installing both underground and aerial cable, along with expanding and upgrading the existing Microwave Radio System network, to include 12 new tower sites. This alternative also includes installing interior fiber to ensure redundancy and enhanced interconnection between six critical governmental locations. New or existing fiber will be used to connect up to 1,064 CAIs to the new statewide network backbone or expanded ring infrastructure.

No Action Alternative. No action was also considered as an alternative. This alternative represents conditions as they currently exist throughout the State of West Virginia, with only 11% of the population and 36% of community entities adequately served. The EA examined this alternative as the baseline for evaluating impacts relative to other alternatives being considered.

Alternatives Considered But Not Carried Forward. During planning stages of this Project, the Executive Office of the State of West Virginia considered installation of new towers in each county seat. However, this all-wireless alternative was eliminated based on cost considerations and anticipated environmental and cultural resource impacts. The Executive Office of the State of West Virginia also considered eliminating the new wireless components altogether and completing the Project using only aerial and buried fiber infrastructure. This option was eliminated due to difficult terrain in the state, severe weather conditions that would negatively impact aerial fiber, the lack of coverage by the existing Microwave Radio System network, cost, and installation time. Based on these considerations, only the preferred alternative and no action alternative were carried forward for further evaluation in the EA.

Findings and Conclusions

The EA analyzed existing conditions and environmental consequences of the preferred alternative in 11 major resource areas, including Noise, Air Quality (including greenhouse gas 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. Cumulative impacts were also evaluated.

Noise

This Project involves installation of fiber along existing highways and city streets, and construction of towers in rural areas. Minor increases in ambient noise will occur during the Project's construction phase, but will not be significantly greater than routine construction or utility line projects in these locations. Periodic operation of backup power generators at the new tower sites will result in minor and intermittent increases in noise levels around those sites. Operation of the cable for data transmission across the network will create no new long-term sources of noise. However, periodic operation of backup power generators at the new tower sites will result in long-term, but minor and intermittent noise impacts. Based on this evaluation, the Project will have minor effects on noise in the area. No significant impacts are anticipated.

Air Quality

Installation of fiber along unpaved ROWs, grading of the tower sites, and use of unpaved staging areas will result in increased fugitive dust emissions within the Project area. Use of heavy equipment (e.g., plows, HDD units, backhoes) during network construction and system maintenance will also result in minor and temporary increases in air pollutant levels in the Project area. These emissions will be transient and temporary. Nevertheless, appropriate BMPs will be implemented to minimize potential impacts on air quality. These BMPs will include limiting travel speeds on unpaved roads, cleaning equipment to reduce tracking of soil, maintaining equipment in good working order, and seeding to reestablish ground cover on construction sites.

It is estimated that 17,000 gallons of diesel fuel and 24,000 gallons of gasoline will be used during Project construction, resulting in the release of approximately 382.9 metric tons of greenhouse gas (GHG) emissions. The Council on Environmental Quality (CEQ) has established a presumptive effects threshold of 25,000 metric tons of carbon dioxide equivalent emissions from an action. Because the anticipated volume of GHG emissions to be generated is well below the CEQ threshold, this Project will not contribute appreciably to climate change or global warming. Operation of the cable for data transmission will create no new, permanent sources of air pollution. However, periodic operation of backup power generators at the new tower sites will result in long-term, but minor and intermittent air quality impacts. Based on these analyses, no significant impacts on air quality are expected to result from this Project.

Geology and Soils

This Project will involve three components of soil disturbance: grading for tower construction, placement of new or replacement poles, and burial of underground cable. The area of disturbance for each tower will be approximately 0.36 acre or less. Fiber and poles will be installed within existing ROWs and along city streets, limiting disruption of previously undisturbed native soil profiles. Soil removed during installation of the fiber cable will be backfilled into the trench after placement of cable. Appropriate BMPs will be used to minimize soil erosion or sedimentation during and after the Project construction period. Based on these considerations, the Project will not result in significant impacts on geology and soils.

Water Resources

The Project is expected to have minimal impact on water resources because: (1) the towers will be located on upper elevations outside of wetland or floodplain areas; (2) fiber will be placed within existing ROWs and along city streets; (3) poles will be placed within existing ROWs and along city streets; and (4) where existing power lines cross large water bodies, the new cable will be passed through existing conduit on bridges. In a letter dated October 26, 2010, the U.S. Army Corps of Engineers (USACE) indicated that Project activities in the vicinity of water resources will likely be covered by Nationwide Permit 12 for utility line activities and subject to the terms and conditions therein. In addition, appropriate BMPs (e.g., placement of sediment barriers, seeding, and mulching) will be implemented in accordance with the West Virginia Department of Environmental Protection's Erosion and Sediment Control Manual. If wetlands must be traversed to access a pole, temporary mats will be placed in the wetland to minimize damage. Based on the shallow depth of fiber installation (i.e., less than two feet below the ground surface), this Project will not intercept groundwater. By following USACE guidance and implementing appropriate erosion control measures, no significant impacts on water resources are expected.

Biological Resources

This Project will require limited clearing of trees at the tower sites and minor, temporary noise due to construction activity at all Project locations. However, because most of the Project activity will occur within and along road ROWs, significant disruption of animal movement and

migration patterns are not expected. Negligible potential disturbance to fish and mussels may result due to minor, localized turbidity, but no permanent impacts to aquatic resources or wetlands would occur and temporary impacts will be minimized through the use of proper BMPs. Where any sensitive resources (not identified on the project sites) are involved, appropriate timing of crossings would be employed as directed by WVDNR and WVDEP.

Several endangered and threatened species have been identified in the Project area. In a letter dated March 9, 2007, the U.S. Fish and Wildlife Service (USFWS) indicated that the planned tower construction should have no effect on Federally-listed species provided that: (1) each tower site and associated access roads and staging area require alteration of less than one acre of habitat; (2) the Project does not include clearing trees, grading, placement of gravel/fill, or other alteration to habitats above 2,600 feet mean sea level in Randolph, Tucker, Pendleton, Pocahontas, Grant, Greenbrier, or Webster Counties; (3) the Project route avoids specifically listed streams; and (4) if the towers are to be lit, only white strobe lighting be used. In numerous letters provided between June and September 2010, the West Virginia Department of Natural Resources (WVDNR) indicated that they have no record of state-listed rare, threatened, or endangered species or sensitive habitats at the planned tower sites. Nevertheless, the WVDNR did recommend use of minimal lighting on the towers themselves.

In a letter dated February 9, 2010, the USFWS indicated that fiber installation portions of the Project are "not likely to adversely impact any Federally-listed species," provided that the Project is implemented in accordance with protective measures outlined in contractor letters dated December 27, 2010; January 28, 2011; and February 8, 2011. These commitments include, but are not limited to:

- Completion of fiber installation aerially in sensitive areas;
- Completion of stream crossing using aerial installation, mounting on existing structures (e.g., bridges), or HDD techniques to bore underneath the water feature;
- Use of existing poles in areas where sensitive habitats may be present;
- Completion of tree trimming and clearing activities between November 15 and March 31 to avoid impacts to the Indiana bat (*Myotis sodalis*).

In a letter dated October 22, 2010, the WVDNR indicated it "does not anticipate significant impacts upon fish and wildlife resources resulting from the installation of new fiber within existing ROWs." However, the WVDNR also requested that the WVDOC submit detailed maps and descriptions of the proposed new fiber paths prior to installation for final permitting decisions. The Executive Office of the State of West Virginia will be responsible for implementing any additional Project stipulations identified during subsequent WVDNR reviews. Based on these analyses and consultations, no significant impacts on biological resources are anticipated to result from this Project.

Historic and Cultural Resources

Numerous architectural and archaeological sites have been identified across the state of West Virginia, some of which may be in close proximity to the Project route or planned tower sites. The West Virginia State Historic Preservation Office (WV SHPO) was consulted on the Project, and provided tower-specific letters between the months of April and July 2010, indicating no need for further consultation on planned activity at most of those sites. In a letter dated December 1, 2010, the WV SHPO determined that construction of the planned tower in Greenbrier will have no adverse effect on The Greenbrier, a National Register of Historic Places (NRHP) property and National Historic Landmark based on the dense forest that exists between the two sites. In a letter dated September 16, 2010, the SHPO also determined that tower construction will have no adverse effect on any NRHP-listed or NRHP-eligible architectural resources in the Spencer historic district. In letters dated July 29 and September 3, 2010, the WV SHPO also made a no adverse effect determination regarding the Weirton tower and Hancock County historic areas. Accordingly, the WV SHPO found no need for further consultation on these towers.

The WV SHPO also provided comment on the fiber portion of the Project. On September 28, 2010, the WV SHPO entered into a PA with the WVDOC (acting as Administrator for the Executive Office of the State of West Virginia) and NTIA. This PA outlines requirements for identification, evaluation, and treatment of historic properties. It emphasizes avoidance as the preferred treatment for historic properties, and establishes alternative treatments and procedures to be implemented if avoidance is not possible. These alternative procedures are intended to mitigate impacts on cultural resources below the threshold of significance.

NTIA posted notification of the planned tower-related Project activity on the Tower Construction Notification System (TCNS) on January 22, 2010. In correspondence issued between June 2010 and January 2011, the Shawnee Tribe's Tribal Historic Preservation Office (THPO) determined that no known historic properties will be negatively impacted by the towers. In multiple emails issued between May and September 2010, the Cherokee Nation THPO documented a similar conclusion for their historic, cultural, and sacred sites. Several other tribes (including the Eastern Shawnee Tribe of Oklahoma, the Catawba Indian Nation, the Wyandotte Nation, the United Keetoowah Band of Cherokee Indians in Oklahoma, and the Eastern Band of Cherokee Indians) also responded to the notice, indicating no interest in further consultation on the Project. However, all of the aforementioned Tribes requested immediate notification in the event that archaeological remains, Native American artifacts, human remains, or other cultural or historic resources are inadvertently discovered during the construction phase.

Through implementation of and compliance with the executed PA, Project-related adverse impacts on historic and cultural resources are not expected to be significant.

Aesthetic and Visual Resources

Installation of buried fiber will have short-term visual impacts due to the presence of heavy equipment along the Project route during construction. However, these impacts will be temporary and limited to the period of construction and regrowth of vegetation. Neither inside plant nor buried fiber optic cables to be deployed by the Project will be visible to the public after installation. This Project will result in the addition of a single cable on existing utility poles and approximately 311 new poles along existing road ROWs. The long-term effect of these improvements is expected to be small and easily assimilated into an already existing picture of development, even on rural road corridors. The new towers will result in minor visual impacts in the immediate vicinity of each site. Furthermore, existing towers are already present in the vicinity of several planned tower sites. Based on these considerations, the Project will have no significant impacts on aesthetic or visual resources.

Land Use

The fiber portion of this Project will be constructed within existing road ROWs and along city streets. Any disturbance associated with the cable routing will meet local, state, and Federal requirements to protect designated land uses. The tower sites will impact approximately 4.3 acres of forested land and shrubland/woodland, which is a negligible percentage of the nearly five million acres of such lands across the state. On August 27, 2010, the U.S. Department of Agriculture – Forest Service (USDA-FS) issued a special use permit (SUP) decision for the planned tower site at Sharps Knob in Pocahontas County, based on its proposed location within the Monongahela National Forest. This decision document outlined required land lease agreements and indicated that, "there are no extraordinary circumstances that may result in a significant individual or cumulative effect on the quality of the human environment." None of the other tower sites are located on USDA-FS land. Accordingly, this Project will have no significant impact on land use.

Infrastructure

This Project will bring high speed internet and communications connectivity to areas of West Virginia that are populated but presently underserved. The Project will result in a minor and temporary increase in traffic during the construction period, but existing roadway infrastructure is capable of handling these short-term changes. In addition, West Virginia has adequate capacity to manage the volume of waste expected to be generated during Project implementation. Based on these analyses, the Project will have no significant adverse impacts on infrastructure.

Socioeconomic Resources

Completion of this Project will offer new and improved broadband access for West Virginia residents and CAIs including schools, healthcare organizations, public safety and law enforcement entities, libraries, governmental offices, and other community support agencies. Expanded internet access will have positive impacts on jobs (both short- and long-term), educational opportunities, and economic growth. The Project will have no significant impacts on

socioeconomic conditions in the targeted service area, and moreover is expected to have no negative impacts on socioeconomic resources.

Human Health and Safety

Construction activities planned for this Project will have minimal impact on human health and safety. Because construction will be limited to ditches and utility corridors along highways and roads, contractor staff will not be located directly in the path of traffic. Because there is no need to close or redirect traffic lanes, only minor impacts will be experienced by vehicles traveling on highways and roads adjacent to the Project route. Nevertheless, the Executive Office of the State of West Virginia and its contractors will provide warning and guidance to all elements of traffic, and will wear high-visibility safety apparel when appropriate. An accident prevention program will also be implemented to include regular inspection of job sites, materials, and equipment. All applicable Federal Highway Administration (FHWA), OSHA, and other state regulations will be adhered to during construction activities. Finally, there are no known Superfund sites within the vicinity of planned tower sites, and no contact with contaminated media is expected. Furthermore, because buried fiber will be installed within existing road ROWs, it is unlikely that contractors will encounter contaminated soil from any known hazardous waste or Superfund site while implementing that part of the Project. In the event that such situations are encountered however, construction workers will follow proper and customary safety requirements. Based on these considerations, this Project will have no significant impacts on human health and safety.

Cumulative Impacts

As described above, the Project will not have significant adverse impacts on any of the environmental resource areas evaluated in the EA. Although statewide current or future projects relating to roadways, infrastructure, and development are anticipated, the Project is not expected to significantly add to cumulative impacts because of its localized nature during project construction. Accordingly, no significant adverse cumulative impacts are anticipated with regard to the Project as currently planned.

Decision

Based on the above analysis, NTIA concludes that constructing and operating the Project as defined by the preferred alternative, the executed PA, identified BMPs, and other 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.

National Telecommunications and Information Administration Broadband Technology Opportunities Program Finding of No Significant Impact

Executive Office of the State of West Virginia

West Virginia Statewide Broadband Infrastructure Project - Middle Mile

Issued:

Wayne Ritchie

Chief Administrative Officer

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