THE ARKANSAS HEALTHCARE, HIGHER EDUCATION, PUBLIC SAFETY, AND RESEARCH INTEGRATED BROADBAND INITIATIVE FINAL ENVIRONMENTAL ASSESSMENT

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SUBMITTED TO:

U.S. Department of Commerce
National Telecommunications and Information Administration
Broadband Technology Opportunities Program
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Executive Summary

Under the American Recovery and Reinvestment Act of 2009 (Public Law 111-5, 123 Statute 115), the National Telecommunications and Information Administration (NTIA) solicited proposals for the Broadband Technology Opportunities Program to expand broadband infrastructure to underserved populations. The University of Arkansas System proposed a project to expand two existing state-owned and -managed networks: the Arkansas Telehealth Oversight and Management (ATOM) network and the Arkansas Research and Education Optical Network (ARE-ON).

The proposed project would integrate isolated community anchor networks to expand the broadband capabilities and geographic reach of the ATOM network and ARE-ON. By doing so, the proposed project would expand ARE-ON fiber connectivity to reach 22 state-supported 2-year colleges and one 4-year university. This 900-mile network expansion would involve both leasing existing fiber and installing new fiber. Fifty miles of new fiber would need to be constructed and the remainder would be leased fiber. The project would substantially upgrade broadband services and/or equipment for the ATOM network, upgrading more than 100 new network sites to create a comprehensive statewide network of 441 healthcare sites. This would permit high-speed delivery and transmission of the broadband benefits at the 474 *integrated network* sites.

The installation of new fiber would be accomplished with underground fiber optic cable construction in rights-of-way along roads, under paved urban streets, and along private easements. The project would not require any installation of aboveground structures other than fiber optic equipment huts. Eighteen fiber equipment huts (12 by 30 feet or 24 by 30 feet) would be required: one at 15 of the two-year colleges and one each in Hindsville, Malvern, and North Little Rock.

The preferred alternative in this Environmental Assessment (EA) is the buried alternative, whereby all fiber optic cable would be placed beneath the ground. The University of Arkansas examined the possibility of installing aerial fiber or partially constructing the system using aerial installation to provide connectivity between the targeted system end points. However, aerial cable is susceptible to outages during storm events caused by falling tree limbs and branches, excessive ice buildup, or high-speed wind gusts. Aerial cable is also much more susceptible to temperature-caused signal degradation than is buried cable. Therefore aerial cable was dismissed from further consideration. Various wireless internet technologies were alsoevaluated as an alternative to the proposed fiber optic network. Wireless data transport does not have the data carrying capacity that is required for the needs of the community anchor institutions. Although construction of wireless facilities may result in a larger initial area served than would the proposed project, the level of service that these systems are capable of accommodating is insufficient to address the purpose and need of this project; consequently, this alternative was eliminated from further consideration. A no action alternative is examined in the EA. Under the No Action Alternative, NTIA would not provide a grant to the University of Arkansas System to construct the proposed project. The ARE-ON fiber optic communication system would not have the capacity to support future demands for high-speed bandwidth and internet-based services, and the ATOM network would not have the capacity to support its partners. If the new upgrades were not provided, customers in the service areas along the proposed project route would not benefit from the enhanced services, including a full range of long-distance transmission and data transmission.

After a review of potential environmental impacts and consultations with the Arkansas Historic Preservation Program and the U.S. Fish and Wildlife Service, it was determined that a number of

environmental impacts are possible, although none are likely to be significant. Based on the analysis presented in this EA, implementation of the proposed project would have no impact or a minimal impact on air quality, geology and soils, biological resources, land use, infrastructure, and minority or low income populations. The proposed project would impact other resources, as described below.

Noise – Noise would be generated by construction equipment during the approximately 12-month construction period. Construction noise was evaluated using thresholds recommended by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The proposed project would not exceed these thresholds in any of the locations but noise levels in the area would temporarily increase. Given the anticipated installation rates (1,800 feet per day for vibratory plow installation and 500 feet per day for directional drilling), it is unlikely that construction equipment would be located adjacent to a sensitive noise receptor for more than 1 to 2 days.

Water Resources – The proposed project would cross 10 perennial streams, 22 intermittent streams, and 17 ephemeral drainages, but no in-water work would occur. All surface water crossings would be constructed using horizontal boring or other techniques (e.g., bridge hanging) to avoid disturbing rivers and streams. There would be no project-related ground-disturbing activities within 50 feet of any stream or river.

Multiple floodplains would be crossed by the proposed project. Construction of fiber optic cable would take place below grade, and would result in no substantial fills or other grading revisions. As a result, no fill would be placed in any FEMA-designated floodplain, no floodplain capacity would be lost, and areas upstream and downstream of a floodplain crossing would not experience changes in flood flows.

There would be no impact on wetlands because all wetlands would be avoided by directional bore drilling and no structures (such as huts) would be placed in wetlands. Directional boring allows fiber optic cable to be placed beneath wetlands to avoid impacts. Because all waters of the United States, including wetlands, would be avoided by directional bore or bridge attachment, there is no need to obtain a Section 404 permit from the U.S. Army Corps of Engineers (Corps of Engineers), and therefore no consultation is required. In addition, a Section 10 permit will not be required from the Corps of Engineers because no navigable waters of the United States will be crossed. No further consultation with the Corps of Engineers is required.

Historic and Cultural Resources - The Arkansas Historic Preservation Program agreed that implementation of the avoidance measures discussed in this section would prevent damage to historic properties and significant cultural resources. The State Historic Preservation Officer (SHPO) concluded under Section 106 of the National Historic Preservation Act (NHPA) that the proposed project would result in no adverse effect on historic properties. Because the NTIA's NEPA compliance procedures rely on Section 106 consultations to assess the effects of its projects on cultural resources, the proposed project would also not result in a substantial adverse change under NEPA.

Aesthetic and Visual Impacts – The proposed project would run adjacent to portions of Crowley's Ridge Parkway National Scenic Byway and runs adjacent to and crosses portions of the Great River Road National Scenic Byway and the Interstate 530 Scenic Byway. This would result in temporary impacts to the visual quality of these areas during the construction period. However, given the anticipated installation rates (1,800 feet per day for vibratory plow installation and 500 feet per day for directional drilling), it is unlikely that construction equipment would be present in the same

location for more than 1 to 2 days. Therefore, these impacts are considered minor. Long-term impacts to the visual quality of these byways would result from the right-of-way (ROW) markers placed at each handhole location. Marker poles are typically 5 feet tall, made of white plastic with orange caps, and have appropriate identifying information inscribed. These makers would have a minimal impact on the visual quality of these scenic byways.

Human Health and Safety – In accordance with Arkansas State Highway and Transportation Department traffic control standards, work within urban areas would maintain safe pedestrian routes. Work in and around school zones would be coordinated with school district officials to ensure that safe, functional routes are available for pedestrian and bus traffic. A traffic control plan would be adopted for the project that details standard traffic control and flagging measures to be implemented around construction sites. Adherence to the plan would minimize any potential impacts, such as vehicular accidents in construction zones, and would reduce the impact of construction on the traveling public by eliminating or greatly reducing safety concerns. Trained and qualified workers would perform all work in accordance with Occupational Safety and Health Administration (OSHA) regulations. As part of the contractor selection process, bidders would be asked to provide a detailed work plan and a list of the qualifications and training records of each worker proposed by the contractor to work on the project.

Socioeconomic Resources – Twelve management and engineering employees directly employed and the 35 construction workers recruited during project implementation would likely be supplied locally. The maximum annual average number of indirect and induced jobs estimated to be generated in the state would be 348. This total would be generated in a variety of industries, and the labor required to fill these jobs would be expected to be locally available.

Once in operation, the project would directly connect 474 integrated network sites, almost 90% of which are medical and healthcare providers, the remaining being mostly colleges and other institutions of higher education and public facilities. These anchor institutions serve the entire state population (The University of Arkansas System 2010). Improved broadband access to these institutions is expected to improve services in clinical consultations, distance education, research, and virtual communication, with benefits to state competitiveness. In addition, existing internet service providers have expressed interest in integrating the proposed network and could benefit from improved services to their clients (The University of Arkansas System 2010). Although estimates of the total job creation associated with the potential benefits of the project are currently not available, six full-time-equivalent (FTE) workers would be directly employed annually in maintaining project operations after funding ends.