

Broadband USA Applications Database

Applicant Name: Southern Ohio Health Care Network

Project Title: The Connecting Appalachia Initiative

Project Type: Last Mile Non-Remote

Executive Summary

Introduction: The Connecting Appalachia Initiative is a comprehensive and sustainable plan to expand broadband availability across 34 rural southeastern Ohio counties that serves as a proof-of-concept for the 13-state Appalachian region. Our entire 15,610-square-mile service area qualifies as underserved with over 46% of the area meeting the definition of unserved. Where broadband does exist, access to the metropolitan-class broadband required to meet today's business standards remains unavailable. (See the Service Area Clarification - Supplemental Information 1.) The lack of broadband reduces career options, eliminates critical educational avenues, hampers health care innovation and cripples tourism. For economic development professionals working in the region, this "one-two" punch knocks out most opportunities for attracting and retaining businesses. Challenges of the Region: The broadband gap in Ohio's Appalachian counties perpetuates and exacerbates the region's historic economic disadvantages. Our service area includes: - The eleven poorest counties in Ohio; in some counties over 30% of children live in poverty - A population already suffering from high unemployment prior to the latest spike in joblessness - Fifteen counties designated by the Appalachian Regional Commission (ARC) as either "distressed" or "at-risk" - A higher percentage of elderly and disabled citizens than the rest of the nation due to a net out-migration of young adults Inside the Connecting Appalachia Service Area: The region is 98% rural and contains over 69,000 contiguous census blocks. It has a population of 1,431,363 and includes: + 31 cities, the largest having a population of 25,000 + 236 villages and census designated places with populations as low as 29 + 544,702 households + 2,233 community anchor institutions + 27,822 businesses with multiple employees + 25,459 farms + 85,845 businesses with no employees other than the owner The community anchor institutions, most of which have partnered with the Southern Ohio Health Care Network (SOHCN) in support of the Connecting Appalachia proposal, include: + 264 Health care providers + 622 K-12 schools + 651 Fire, law enforcement and County E-911 locations + 34 Health departments + 38 Higher education facilities + 166 Libraries + 78 Industrial parks + 8 State and Muskingum Conservancy parks + 372 State, county and local government offices Unprecedented Collaboration – Building the Regional Partnership: During the past 18 months of planning, the Connecting Appalachia Initiative has built an unprecedented level of support across the region. These partners include: + The Southern Ohio Health Care Network [Applicant] representing 264 health care facilities and county health departments + All 3 ARC Local Development Districts representing the economic development interests of the counties: - Ohio Valley Regional Development Commission (OVRDC) - Buckeye Hills-Hocking Valley Regional Development District (BH-HVRDD) - Ohio Mid-Eastern Governments Association (OMEGA) + All 3 K-12 Information Technology Centers (ITCs) representing 622 school buildings: - Ohio Mid-Eastern Regional Education Service Agency (OME-RESA) - Southeastern

Ohio Voluntary Education Cooperative (SEOVEC) - South Central Ohio Computer Association (SCOCA) + Higher Education Consortium of Southern Ohio (led by Ohio University) + County Commissioners, with formal resolutions of support from 29 of the 34 counties + The Ohio Public Library Information Network (OPLIN) representing 166 libraries in the service area + The Ohio Department of Natural Resources (ODNR) and the Muskingum Watershed Conservancy District (MWCD) supplying land for towers in exchange for broadband to their lodges and campgrounds

Connecting Appalachia Technology Strategy:

- + Use a hybrid fiber and wireless solution to:
- + Deliver metropolitan-class fiber-based broadband in rural towns using a dense wave division multiplexing (DWDM) foundation with a diverse routing core, allowing us to offer both Layer 2 and Layer 3 services
- + Create inclusive licensed fixed-wireless broadband coverage across the unserved and underserved rural expanse, based on Long Term Evolution (LTE) technology connected directly to the DWDM fabric, providing 0% over-subscription with a single-hop-to-fiber
- + Offer licensed mobile data services in the rural expanse for first responders, visiting nurses, social workers, etc.
- + Support point-to-point wireless links for WISP backhaul and high-speed connections to facilities anywhere in the service area
- + Provide high capacity backhaul to Tier 1 Network Service Providers via redundant 10 Gbps DWDM wavelength connections
- + Peer with Ohio Academic Resources Network's (OARnet) Layer 3 network to provide high performance in-state access to urban health care providers, universities, K-12 and government

Key Advantages of the Holistic Connecting Appalachia Initiative:

- + Addresses availability, affordability and adoption
- + Demonstrates a clear path to sustainability
- + Brings strong and experienced project leadership from within the service region
- + Benefits from unprecedented support of key constituent groups
- + Offers "shovel-ready" projects that can commence immediately
- + Utilizes designs that translate well across large geographic areas with similar physical features

Non-Discrimination and Interconnection: Private telecommunications companies will deploy and operate the networks under contract to the SOHCN. Connecting Appalachia leadership will ensure that the public policy objectives of the program are fully met. To encourage and support competition, the resulting network will:

- + Offer the full range of wholesale services
- + Build numerous fiber "meet-me" points
- + Offer tower co-location and backhaul capacity
- + Offer a mobile virtual network operator (MVNO) service enabling cell phone providers to offer service without building their own infrastructure

Further, the SOHCN will enter into any reasonable interconnection agreements to expand the reach and/or reduce the costs for all parties. The SOHCN network management will be non-discriminatory, using only industry standard best practices to manage service levels. Maintaining capacity for critical life-safety traffic will remain a top priority.

Making It Happen: Connecting Appalachia benefits from an experienced management team that lives in and is committed to rural Ohio. 100% of the actual network deployment will be conducted by private companies. The key players and their roles include:

- + Southern Ohio Health Care Network [Applicant]: The SOHCN represents the 264 health care facilities across the region, with support from partners in economic development, K-12, higher education and tourism. The SOHCN will oversee the project, own the assets and ensure public policy objectives are met.
- + Adena Health System: The SOHCN, a 501(c)(3), benefits from the fiduciary oversight and financial backing of the Adena Health System, a regional medical system operating in 8 counties, earning \$291 million in annual revenue.
- + Horizon Telcom [Sub-Applicant], a 115-year-old independent telecommunications company located in the region, has a strong track record of serving rural Ohio. Horizon will construct and operate the network, offering both wholesale and retail services.
- + Ohio Academic Resources Network [Sub-Applicant]: Expanding on existing relationships with the SOHCN

and Horizon, OARnet will provide backhaul to Tier 1 ISPs, in-state bandwidth and high-caliber engineering talent. + Reid Consulting Group: Bringing decades of experience and a long track-record of successfully managing multi-year, multi-million dollar projects, RCG will provide overall project management services under its existing contract with the SOHCN. + SiteExcell Tower Partners: Providing deep expertise in communications tower development, SiteExcell will handle tower site acquisition, design, permitting and construction oversight. Tower construction contracts will be awarded on a competitive basis. + Alpina Capital: Alpina has been engaged to provide expert support in acquisition of licensed spectrum and will negotiate the remaining licensing and MVNO agreements. + Wireless Internet Service Providers (WISPs) will retail the fixed-wireless services, providing marketing, installation and repair. WISP partners will be selected through a competitive bidding process. + Numerous other contractors and suppliers have already been engaged (See Q36 Essay). Project Costs: Because of the lack of existing infrastructure and the difficult terrain, both the fiber and wireless components of the project require significant investment. However, the overall cost per square mile and cost per household remains reasonable for deployment of a carrier-class network of this size. Fiber Infrastructure \$107,679,552 Wireless Infrastructure + \$112,233,434 Total Network: = \$219,912,986 ARRA Broadband Funding Requested: \$188,947,569 Subscriber Projections: We have been conservative in our take-rate assumptions to assure the proposed network will be sustainable, forecasting service by the end of Year 5 to: + 95,116 residential and small business fixed-wireless subscribers + 5,589 business fiber subscribers + 911 community anchor institution fiber subscribers Economic Impact: Using the Information Technology & Innovation Foundation model, Connecting Appalachia will create and/or retain 1,277 direct jobs plus another 2,718 indirect and induced jobs. The total number jumps up to 8,669 when the Network Multiplier Effect is factored in. The SOHCN will contract with private carriers, contractors and engineers to deploy and operate the required networks. Once completed, the job creation engine of entrepreneurial innovation will take over, leveraging broadband to improve the economic conditions.