

EXECUTIVE SUMMARY

Brief Description of the Project

We have selected as a service area, unserved and underserved smaller communities and thinly populated residential areas that are adjacent to Winchester, VA, that currently has only competition-stifling, carrier-dependent DSL connectivity. AOC-XGEN Wireless, LLC currently operates a 3500-mile fiber optic network for federal government customers that terminates within several miles of the service area and proposes to extend this high capacity fiber optic backbone network to Winchester. This provides the only independent broadband connectivity to the unserved and underserved consumers and community anchors located in the region. While terminating in the Winchester BTA, this solution has the potential to extend service into neighboring unserved and underserved areas including the Western Loudoun, Frederick, and Warren Counties of Virginia; as well as the Jefferson and Berkley Counties of West Virginia. This project will eliminate the digital divide imposed on outlying communities and households and other underserved groups by providing the only available broadband Internet backbone to all last mile providers serving this area. The lack of a middle mile backhaul capability has been the primary barrier to the extension of broadband to this under and unserved constituency. Our sound business model utilizes the BTOP grant to expand our existing fiber optic network service to reach otherwise unserved and underserved consumers located in the Winchester BTA.

This middle mile solution can be replicated for other areas within this region.

Opportunity the Proposed System Seeks to Address

AOC-XGEN's proposed system seeks to address specific opportunities that will improve overall community wellness, employment, education, and health by bridging the digital divide. We will help overcome the historic low adoption rate of low-income residents by providing an affordable alternative to current broadband service. Our system will enhance employment opportunities by providing affordable broadband access to businesses in outlying communities. It will provide broadband access at public access centers located in community anchor institutions. By bringing high capacity backhaul capabilities to a central point within the service area, we enable an easy point to link directly from schools, libraries and other educational providers in service area. We propose to provide free public Wi-Fi hotspots to educational and healthcare provider institutions that can aggregate 10MB requirements. This will bring enhanced broadband to underserved and low adoption groups. We will enhance access to broadband for health care providers in outlying, underserved communities by providing true broadband with carrier independent backhaul. Our fiber optic network solution enhances the command and control communications within and between public safety and first responder networks and the national Homeland Security and first responder infrastructure.

General Description of the Proposed Funded Service Areas (location, number of communities, etc.)

Our Service Area centered in the Winchester, VA BTA and spreads into several neighboring counties. This is a historically underserved area that includes approximately 24,553 citizens, over 50% of whom are underserved or unserved. The area encompasses parts of three counties, 512 census blocks, and 3 incorporated communities.

Number of Households and Businesses Passed 10,950 households, 5,119 businesses

Number of Community Anchor Institutions, Public Safety Entities, and Critical Community Organizations Passed and/or Involved with Project: 56

Proposed services and applications for the proposed funded service areas and users

Our proposed fiber optic backbone provides the highest capacity, most secure, stable and reliable backhaul technology available. This network will be made available on a wholesale basis to all providers of last mile services and community anchor who may wish to directly connect to the backbone. The lack of an available backhaul network in this community has been a significant barrier to the provision of competitive broadband connectivity services to the Winchester, VA service area. In addition to reaching unserved and underserved consumers and community anchors, this network will also be available to a number of federal agencies located or seeking to locate in this area. The availability of a secure fiber optic broadband backbone will provide a substantial stimulus to the expansion into the Winchester region of government and other high tech commercial enterprises that rely on secure network connections as well consumers.

Approach to addressing the non-discrimination and interconnection obligations

AOC-XGEN, which is carrier-independent, promises:

1. We will permit consumers to use any lawful device that they want so long as it is compatible with and not harmful to the network
2. We will permit consumers to download and use any software applications, content, or services they desire, subject only to reasonable network management practices and law enforcement and public safety considerations
3. We will offer non-exclusive, carrier-independent, wholesale access to our network
4. We will deploy an advanced fiber optic broadband backbone that will provide connectivity for last mile networks serving up to 24,553 people.

Type of broadband system that will be deployed (network type and technology standard)

AOC-XGEN's proposed technology is the extension of an existing fiber optic network. AOC-XGEN's fiber optic network consists of a mix of TU-T G.655, a NZ-DSF fiber and TU-T G.652, SMF 28 fiber. This allows for a network that will support all wavelengths and required transmission rates with a minimum reach of 150km without electrical regeneration. All fiber optic cable in our network is capable of supporting 10G bandwidth. For longer runs the cable will support DWDM applications as well as CWDM for the shorter runs. AOC-XGEN continually monitors our fiber network for faults, and has a 24-hour, 365 day a year call out team to address any troubles that may arise. We are proud to have maintained a reliability of greater than 99.9999% on all of our owned network elements since 2001.

Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband services provider

AOC-XGEN Wireless, LLC represents a highly qualified team to deploy a fiber optic backbone for BTOP. Our management team averages more than 20 years of experience each in the telecommunications, media and technology sectors. We currently provide the identical services to numerous federal government agencies in the Washington DC area and the Congress of the United States. We are able to leverage these other existing relationships with government customers to provide the highest quality service to this underserved and unserved group of consumers and entities.

AOC-XGEN has over 3,500 fiber-miles deployed in the National Capitol Region, reaching into more than 30 on-network Government buildings and carrier POPs. This existing network only needs a modest extension to reach the selected Service Area. Our entire network is in buried conduit for survivability. All network operations and maintenance are performed by in-house personnel to maintain network security and integrity. Fiber networks, because of their long-life and low operating costs, provide the best value means for middle mile backhaul to a single distribution point, as well as providing the backbone to link community anchors. Additionally, each point on the network may serve as a potential point of interconnection from which independent parties can construct a last mile network. Arlington county has concluded that such a high capacity, secure, wired infrastructure could render significant economic benefits to the community for further business investment, attracting workers, conducting research, training, energy efficiency and public safety.

Overall infrastructure cost of the broadband system: \$16,041,896.

Overall expected subscriber projections for the project: Year 1: 0, Year 2: 0, Year 3: 11. (NOTE: The subscribers are institutions or businesses – the middle mile network does not directly connect to individual users.)

Number of jobs estimated to be created or saved as result of this project

Fiber optic networks have been shown to enhance employment in those areas in which they are deployed. A recent study comparing Waterloo, IA (without fiber) to Cedar Falls, IA (with fiber) showed that from 1990 to 2003 Cedar Falls experienced a 1.9% greater growth attributed to the presence of a fiber network. (Kelly, Doris J., A Study of the Economic and Community Benefits of Cedar Falls, Iowa’s Municipal Telecommunications Network, October 2003.)

The Winchester, VA Service Area has experienced a recent negative job growth of 7.60 percent. Reducing this decline by even 1.5% would mean the saving of 740 jobs over other broadband technology solutions.