

Broadband USA Applications Database

Applicant Name: San Antonio, City of

Project Title: Alamo Wireless Mesh Expansion (AWME)

Project Type: Middle Mile

Executive Summary

Executive Summary: Opportunity the proposed system seeks to address: San Antonio seeks to leverage its existing OC-192/OC-48 SONET core infrastructure and wireless mesh network to extend multi-purpose, high-speed wireless services for end users at all Public Safety facilities and Public Computer Centers. General description of the proposed funded service areas: This grant will enable the City to extend wireless services to end users at an additional 75 public facilities and 724 traffic intersections throughout the City. Each location is identified on the City Facilities with WiFi Access map under Proposed Locations, and on the Traffic Signal Equipment Locations map. Both maps can be found in the Supplemental Information 1 upload. Number of households and businesses passed: San Antonio is applying for a special access Middle Mile grant to provide secure wireless service to public safety entities and free public Internet access at specific anchor institutions. These Last Mile service providers will connect directly to the network. There are approximately 433,122 households and 83,200 businesses within this service area. Number of community anchor institutions, public safety entities, and critical community organizations passed and/or involved with project: The City's 26 libraries and eight Community Initiatives Centers are the partner anchor institutions for this project. Additional partners are: the San Antonio Police, Fire, Emergency Medical Services; the Bexar County Sheriff's Office; and the City's Department of Public Works—Traffic Management Division. The anchor institutions and public safety entities will be providing Last Mile services to end users. Proposed services and applications for the proposed funded service areas and users: The anchor institutions will offer free WiFi Internet Access to the public, plus computer classes, internet training, educational and workforce development programs. The Traffic Management Division will use the new mesh nodes to expand remote communications capability to additional traffic signals in an effort to improve issue response time and reduce maintenance costs and traffic problems. Public Safety entities will have wireless access to the network and Internet while in the field. Public Safety applications may include the ability for Incident Managers and firefighters to view building plans and chemical databases at the incident scene, EMS to send and receive patient information in transit, video surveillance and access to criminal databases by law enforcement, and much more. Approach to addressing the non-discrimination and interconnection obligations: Non-discrimination and network interconnection obligations are met by providing full internet access to Last Mile end users through City anchor institutions serving the public at large, and through city and county public safety entities. Seven of the Community Initiatives Centers and 16 City libraries are located in low-income underserved areas with an estimated rate of broadband subscribership for the area households of less than 40%. Type of broadband system that will be deployed: San Antonio's broadband design consists of multiple fiber optic and wireless components to

provide standards-based wireless service to end users. Wireless users connect to the wireless mesh network using inexpensive and easily obtainable 802.11b/g devices. The stationary dual-purpose mesh access points (nodes) simultaneously provide network connectivity for wireless clients while providing backhaul communication to the primary network. The mesh radio backhaul utilizes 802.11a standards, and provides enough dedicated bandwidth to support voice, video, and data services simultaneously. The core network infrastructure is comprised of multiple SONET rings providing highly resilient and scalable network performance. Multiprotocol Label Switching (MPLS)-enabled routers across the entire system efficiently provide the capability to simultaneously support secure Public Safety network applications and public Internet access over the same infrastructure. MPLS is an open standards-based approach to packet-forwarding which allows a network provider to separate different traffic types across a common network. Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband services provider: In 2008 San Antonio, led by the Information Technology Services Department (ITSD) team, initiated a project to establish remote communication with traffic signals using wireless mesh nodes with wireless bridging and fiber optical backhaul. The ITSD team designed this unique network and has successfully deployed this technology in the first two phases of this project. Currently the City's network infrastructure is operational for 34 city facilities and 535 traffic signals. The construction of this network is on-time and within the proposed budget. Existing municipal personnel and resources are being used to install the City-wide broadband network. Additional phases of the project include expanding services to the remaining 800+ traffic signals and City facilities over more than 400 square miles while continuing to support public safety applications and free Public Internet WiFi. This same ITSD team will be managing the BTOP project. Overall infrastructure cost of the broadband system: The overall infrastructure cost of this BTOP project is \$10,171,470. Overall expected subscriber projections for the project: The overall estimated end-user subscribers for this project are: 5885 City, County, State and Federal public safety end users, 15,600 end users per year accessing the system from the Community Initiatives Centers, and 1,123,276 end users per year accessing the system from the City libraries. Number of jobs estimated to be created or saved as result of this project: This project will create or save an estimated eight City jobs and 16 contracted jobs.