

Broadband USA Applications Database

Applicant Name: City of Madison

Project Title: Madison Broadband Initiative (MBI)

Project Type: Last Mile

Executive Summary

The purpose of the Madison Broadband Initiative (MBI) is to provide free, low-cost or competitively priced broadband service to anchor tenants and vulnerable populations through fiber deployment and a Wi-Fi mesh network. 80 miles of fiber will provide last mile connectivity to 82 anchor public sector facilities and a high-speed Wi-Fi mesh network covering 28 square miles and will reach 35,128 households and 3,703 businesses in areas where 40% or more of the population is underserved. MBI is a collaborative effort between public and private entities including the City of Madison, the Madison Metropolitan School District, Dane County, Xicom (Doing Business As MadCity Broadband (MCB)), University of Wisconsin-Madison and DANenet.

a) Opportunity the proposed system seeks to address For several years, technology staff from the City of Madison, the Madison Metropolitan School District, Dane County, and the University of Wisconsin-Madison had frequent meetings to discuss problems with broadband access, capacity and cost. The group desired to collaborate on fiber runs to connect institutions, provide broadband access for vulnerable, at-risk populations of the metropolitan area, meet rapidly changing needs of public safety and more affordably serve public schools. Until now, only a few small-scale projects have been implemented due to construction and deployment costs and annually declining public sector budgets. Furthermore, insufficient projected short-term return on investment has failed to entice the private sector to meet public sector needs and serve underserved areas. MBI seeks to address the need for consistent, affordable access to broadband services for anchor tenants and vulnerable populations.

b) General description of proposed funded service areas (location, number of communities, etc.) MBI includes 4 service areas supported by a 28 square mile high-speed Wi-Fi Mesh network. The MBI mesh network will include 83,864 people in 35,128 households within 1,070 Census Blocks. These service areas include areas of high-intensity poverty, high participation in income-qualified assistance programs and large numbers of families with children as determined by the City of Madison's Neighborhood Indicators Project. In addition, this project includes 80 miles of fiber including laterals to 82 anchor institution facilities and close access for over 200 non-profit entities.

c) Number of households and businesses passed The 4 service areas for Wi-Fi mesh include 35,128 households and 3,703 businesses. The 80-mile fiber route reaches an additional 60,000 residents, 24,000 households and passes about 3,000 employers.

d) Number of community anchor institutions, public safety entities, and critical community organizations passed and or involved with the project In total, 82 anchor institutions and public safety entities will be served, comprising 43 City of Madison sites including 4 fire houses, a fire training center, 3 police stations, 26 water wells and towers, and 3 city bus transfer sites, plus 35 schools that provide public education and serve as Red Cross emergency shelters, and the Dane County Job Center. The 5 critical organizations involved with MBI design are City of

Madison, Madison Metropolitan School District, Dane County, University of Wisconsin-Madison, DANenet and Xicom/MCB. e) Proposed services and applications for proposed funded service areas and users MBI will provide the following services: 1) free or reduced broadband rates for 45 small businesses specifically identified by the City of Madison Department of Civil Rights as minority and small disadvantaged businesses (SDBs), as defined by the 1974 Small Business Administration's (SBA) 8(a) Program; 2) free or reduced broadband rates for socially and economically disadvantaged students and their families; 3) reduced broadband rates for students of the Madison Metropolitan School District and college students attending the University of Wisconsin and the Madison Area Technical College; 4) ability to deploy live video and telemetry equipment within ambulances and other first responder vehicles to improve patient care and enable the efficient and remote management of public emergencies; 5) significant upgrades in video surveillance capabilities for the City of Madison [value demonstrated in 2009 by crime captured on video, leading to quick plea-bargain] as well as expansion of this system for school district facilities. In addition to high speed Wi-Fi, this proposal provides 80 miles of fiber connecting 82 facilities including 43 City sites including 4 fire houses, a fire training center, 3 police stations, 26 water wells and towers, and 3 city bus transfer sites, plus 35 schools that provide public education and also serve as Red Cross emergency shelters, and the Dane County Job Center. f) Approach to addressing non-discrimination and interconnection obligations MBI will offer wired and wireless services via fiber optic cable and wireless radio consistent with the NTIA BTOP NOFA non-discrimination and network interconnection obligations with ubiquitous and pervasive network access that is open and affordable using open, standard protocols. MBI supports network neutrality and will not limit, restrict, prioritize or otherwise hinder system users' access to any lawful Internet content, applications or services of their choice except for reasonable system preservation purposes (e.g. security events). MBI will offer services on a best effort basis with all services subject to the legal needs of law enforcement. MBI provides a multi-function network infrastructure with the capability of providing high-speed broadband service to different customer equipment types that use a Wi-Fi connection such as computers, laptops and netbooks, PDAs, smart phones, etc. This project also provides an open network infrastructure platform capable of supporting applications that require Internet broadband access. As an example of technical openness, MadCity Broadband currently has signed agreements with nation-wide roaming ISPs including iPASS and Boingo and wholesale agreements with a local ISP, Merrimac Communication, Inc. (non-discrimination and interconnection obligations are addressed in detail in response to Questions 22 and 38). g) Type of broadband and system that will be deployed (network type and technology standard) MBI will use standards-based Wi-Fi (2.4GHz b/g/n) and FTTx (Fiber To The Home/Office) to provide multi-megabit broadband service to underserved areas of Madison. All anchor tenant locations will be connected through "dark fiber" creating a Metro-Area-Network (MAN) between all locations capable of 10 Gbps data transport speeds. h) Qualifications of applicant demonstrating ability to implement and operate a broadband infrastructure and/or be a sustainable broadband services provider MBI is a collaborative effort between public and private entities wherein Xicom (Doing Business As MadCity Broadband (MCB)) will build, operate, and act as the service provider for the network and City of Madison, Madison Metropolitan School District and Dane County will be anchor tenants with Right to Use agreements with MCB. MCB, the current service provider and network operator of the 11-square-mile indoor and outdoor Madison metropolitan Wi-Fi network, is organizationally ready to implement and manage the MBI network. MCB has built and manages indoor

and outdoor multi-function networks in Wisconsin and Florida and manages a country-wide wireless network in the Dominican Republic. MCB now provides Wi-Fi services to over 2,200 Madison apartment units, Dane County Regional Airport, University of Wisconsin Hospital and Clinics, and the Federal Bankruptcy Court House. MCB has an operations support infrastructure with established network management procedures and trained staff that provides services to business travelers, residential, apartment complexes, small and medium businesses, and City of Madison government agencies. This includes primary and backup customer and network operation centers with multiple trained and experienced staff serving 3 overlapping shifts and redundant communications and network monitoring systems. MCB has sales, operations and billing support systems in place and effectively serving 2,200 residential and business customers. MCB outsources 24/7 level 1 and level 2 billing and customer support to Customer Direct, a St. Louis based company specializing in customer services for the Internet Service Provider and Hospitality Industry, and E&A, a company specializing in temporary labor skilled in outside plant installation and maintenance services. MCB's core competency, network design and application integration, is kept in-house. MCB has 3 network-IP engineers, 2 business application integration engineers, and 2 network infrastructure engineers with over 55 years combined experience(response to Question 38 contains additional details on readiness). The free and reduced-cost broadband services available through MBI to underserved populations are sustainable per the MBI financial forecast (5-year pro forma provided in response to Question 50) which demonstrates that a portion of revenue generated from subscribers will be used to continue free and reduced-cost services to vulnerable populations. i) Overall infrastructure cost of broadband system MBI's overall infrastructure cost (fiber and Wi-Fi broadband system) is \$20,598,625 for which we seek 77.9% of the funding through BTOP. j) Overall expected subscriber projections for project Within Wi-Fi service areas in vulnerable high-intensity neighborhoods described in b) above, service subscription rates are predicted to be 29.3% for households and 27% for businesses in 5 years. k) Number of jobs estimated to be created or saved as a result of project 1,026 jobs will be created from this \$20,598,625 MBI project. Computations are based on the work of Atkinson, et al. Jan.2009.