

Broadband USA Applications Database

Applicant Name: CITY OF SEATTLE DEPARTMENT OF INFORMATION TECHNOLOGY

Project Title: Seattle Net

Project Type: Comprehensive Community Infrastructure

Executive Summary

Located between the Cascade and Olympic Mountains and adjacent to both salt and fresh water, the City of Seattle is exposed to hazards associated with natural disasters, including major earthquakes, severe flooding, landslides, and volcanic activity. It also is considered a high risk area for terrorist attacks given its sizeable port operation and close proximity to an international border. Indeed, buildings in Seattle have even shown up on Al Qaeda target lists. Despite these public safety challenges, Seattle lacks a state-of-the-art broadband network for first responders. Instead, first responders are forced to rely upon commercial networks to meet public safety broadband needs, competing with the general public for available bandwidth. The lack of a dedicated public safety broadband network hampers the ability of first responders to respond efficiently to routine emergencies as well as a major disaster. Additionally, although Seattle is a technology-savvy community, community anchor institutions such as community colleges and healthcare providers lack the vibrant broadband connectivity that is essential to deploying the most advanced distance learning and telemedicine applications. For example, many nonprofit health clinics can only afford to lease a single T1 line, which barely provides sufficient capacity to handle email and manual patient record transfers. Recent funding cuts have further constrained the ability of community colleges and healthcare providers to secure high-speed broadband access. Likewise, although the vast majority of Seattle residents have broadband access, survey and focus groups confirm that some of the most vulnerable population groups in Seattle ' including low-income, disabled, minority, and elderly residents ' do not fully enjoy the benefits of broadband. Seattle Net directly addresses these complex broadband challenges. Working in a public-private partnership with the City of Seattle Police and Fire Departments, the University of Washington (UW) Police Department, the Seattle Community College District (SCCD), the University of Washington Department of Information Technology, the Community Health Council of Seattle/King County, the Seattle Housing Authority (SHA), One Economy, Semaphore, and Spectrum Networks Inc. d/b/a Condo Internet, the City of Seattle proposes to deploy a vibrant Middle Mile network that will serve public safety entities, community anchor institutions, and vulnerable population groups in Seattle. The proposed funded service area spans 90 square miles, with a population of approximately 600,000 residents. There are 10,817 community anchor institutions, 6 community colleges, and thousands of end users, including approximately 258,000 households and 51,000 businesses in the proposed funded service area. First, utilizing 700 MHz spectrum and Long Term Evolution technology, the public safety component of the proposed network will improve and enhance the interoperability of public safety communications across the city and give first responders essential broadband access necessary to protect the health and safety of all residents and visitors in the area in a cost efficient manner. This public safety network will feature

two geographically diverse cores as well as 38 radio access node (RAN) sites and will leverage the City's existing fiber network in order to provide backhaul. In addition, Verizon Wireless and AT&T Mobility have both expressed interest in entering into a roaming agreement with the City. Such roaming ability will ensure that public safety users will have broadband access when their duties take them outside of Seattle as well as enjoy access to a commercial wireless network within the proposed funded service area. The network design will provide system resiliency and enable virtual command centers that allow critical systems to be accessed anywhere, which will ensure emergency communications even in the event of a natural or man-made disaster. Seattle Net will expand public safety workers' ability to access dynamic multimedia applications, such as real time mobile video to and from officers in the field. Access to these and other applications will enable first responders to operate in a more seamless and effective manner, thus making the City of Seattle a safer place in which to live and work. Second, the proposed Middle Mile network will provide enhanced broadband connectivity to community colleges and health care providers in Seattle. As designed, Seattle Net will leverage the city's existing 510-mile fiber optic network to provide community anchor institutions with a 10-gigabyte broadband connection. Seattle Net will connect, with a 10-gigabyte broadband connection, local community colleges and related facilities. This enhanced connectivity will significantly upgrade existing broadband capabilities, enabling SCCD to expand digital educational content, increase online learning systems, promote greater digital literacy, and extend its reach within the Seattle community. In addition, Seattle Net will connect, with a 10-gigabyte broadband connection, 23 nonprofit local health care clinics that serve over 200,000 low-income patients each year, linking them together in a 'care network' with other clinics, a regional trauma center, and one of the largest hospitals in the City. This enhanced broadband connectivity will improve health care services by facilitating the use of many critical high-bandwidth health care applications. Third, in partnership with SHA, Seattle Net will facilitate broadband service to 18 low-income housing buildings managed and operated by SHA, which will benefit over 2,000 low-income residents in the City of Seattle. In exchange for SHA's making available sites to serve as connection points between middle mile fiber and 700 MHz cell sites, the City of Seattle will connect low-income housing units operated by SHA to the City's existing fiber network and facilitate interconnection with Internet Service Providers interested in offering affordable broadband service to some of the City's most vulnerable population groups. The public safety, community college, and health care components of the project will provide managed services that use private network connections for enhanced quality of service. For connections to the Internet by the public, the City of Seattle will ensure that Seattle Net is operated in a manner consistent with applicable nondiscrimination and interconnection requirements. The City of Seattle and its partners are highly qualified to implement and operate the proposed Middle Mile network. In addition to deploying and operating a 510-mile fiber network, over the past 20 years, Seattle has deployed and operated a complex, multi-agency public safety two-way radio system with more than 15,000 users and with a 99.999% availability rate. The City currently operates complex layered data networks and a city-owned telephone PBX system, with E-911 capability, serving 11,000 customers. To ensure the success and sustainability of Seattle Net, the City of Seattle will conduct a RFP process if this application is granted, during which it select a vendor with extensive experience in installing, operating, and maintaining an LTE network. The project is otherwise 'shovel ready' as it relies primarily upon existing infrastructure. In addition, various public safety entities, community anchor institutions, and ISPs have already pledged support to this project, allowing for seamless

implementation and rapid utilization once the Middle Mile network is in place. Because Seattle Net utilizes existing infrastructure, the proposed Middle Mile network will be deployed in an efficient and cost-effective manner. The cost of this project is \$27.94 million for which the City of Seattle seeks a grant in the amount of \$19.54 million. The City and its partners propose making both in-kind and cash contributions to the project. The in-kind contributions have a total value of \$4.31 million, which represents approximately 15.4% of the total project budget. The cash contribution will be \$4.09 million, which represents approximately 14.6% of the total project budget. The project will also have a positive effect on the local economy. At present, the city estimates that Seattle Net will create 1,070 jobs, which includes 304 direct jobs, 450 indirect jobs, and 316 induced jobs. Seattle Net is an essential step towards meeting the City of Seattle's broadband needs. Seattle estimates that within five years of the project's completion, users from seven distinct public safety entities will utilize the public safety component of the proposed Middle Mile network. The City also estimates that, in this same time frame, 64 community anchor institutions and 2,000 residential customers will directly benefit from this project.