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Organization:	Motorola, Inc.
Project Name:	The San Francisco Bay Area Wireless Enhanced Broadband Project (BayWEB)
Project Type:	Comprehensive Community Infrastructure/Public Safety
State:	California
Federal Award:	\$50,593,551

ABOUT THE PROJECT

This public-private partnership led by **Motorola, Inc.** aims to deploy a 700 MHz interoperable wireless public safety broadband network and a public access wireless broadband network in the greater San Francisco Bay Area. Examples of advanced public safety applications to be enabled by the network include real-time mobile video for field officers; geolocation information about damage, dangers, hazardous materials, road conditions, and personnel and vehicle location; immediate Amber Alert file transfers; and virtual command centers to support emergency evacuations. The Bay Area Regional Interoperability Communications System (BayRICS) will manage quality-of-service, access, interoperability, policy, and system management issues for the public safety network.

BayWEB also proposes to:

- Deploy broadband services at 200 existing public safety sites that will support almost 50,000 public safety users and over 500 public safety facilities with speeds of up to 6.5 Mbps. The coverage area for this network encompasses nearly 2.5 million households.
- Serve as a demonstration project for national implementation of 700 MHz interoperable public safety wireless broadband networks.
- Offer wholesale wireless capacity to Internet service providers in the Bay Area. Seven small business wireless Internet service providers (WISPs) have already signed on to utilize this system to provide service to community anchor institutions, businesses, and end users.
- Facilitate more affordable and accessible broadband service for up to 2.5 million households and 186,000 businesses by enabling local Internet service providers to utilize the project's open network.

ORGANIZATION'S HISTORY

Motorola has provided advanced communications equipment for the public and private sectors for over 80 years, including the fields of public safety, enterprise networking, mobile computing, 4G broadband and high definition video. It has considerable experience in the deployment of public safety wireless access networks, including operating the Palmetto public safety network in South Carolina and the Starcom public safety network in Illinois.

PROJECT PARTNERS

- Northern California Regional Intelligence Center
- Skyline Broadband Service
- Alameda County Sheriff's Office
- Bay Area Regional Interoperability Communications System
- Cal DSL
- Surfnets Communications
- Internet Free Planet
- 101Netlink
- JAB Wireless
- airCloud Communications

Data provided in the project description is based on information supplied by the applicant. An executive summary of this application can be found on www.ntia.doc.gov/broadbandusa.

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Broadband USA Applications Database

Applicant Name: MOTOROLA, INC

Project Title: The San Francisco Bay Area Wireless Enhanced Broadband Project (BayWEB)

Project Type: Comprehensive Community Infrastructure

Executive Summary

While one of the country's most culturally diverse and aesthetically beautiful areas, the San Francisco Bay area confronts significant challenges. Susceptible to earthquakes, coastal flooding threats, and wildfires, the Bay Area is also one of the highest risk areas for terrorism attacks. Nevertheless, emergency responders currently compete with the general public for bandwidth, and public safety's ability to respond adequately using existing broadband networks is often hampered during normal daily operations, such as a multi-car accident on an area highway, let alone during a major disaster. In addition, these ten counties consist of dense urban, suburban, and very rural areas that are challenging for broadband providers to serve. This area also has been hard hit by the current economic crisis with an unemployment rate in excess of 13%. Numerous communities in the Bay Area are economically distressed, and others lack any access to broadband. The Bay Area Wireless Enhanced Broadband (BayWEB) project directly addresses these complex sets of problems. In partnership with public safety entities in the counties of Alameda, Contra Costa, San Mateo, San Francisco, Marin, Sonoma, Napa, Solano, Santa Cruz, and Santa Clara, California, and multiple wireless broadband providers, Motorola proposes to build and operate BayWEB, which is a vibrant Middle Mile broadband network that will serve public safety entities, community anchor institutions, and end user customers throughout the ten-county Bay Area. This area spans 7,368 square miles, which is close to the size of Massachusetts, with a population of approximately 7 million people living in more than 100 cities and towns, which makes the Bay Area larger than 37 other States. The Bay Area also is visited by nearly 15 million tourists annually. There are 28,490 community anchor institutions, 27 community colleges, and millions of end users, including approximately 2.5 million households and 186,095 businesses in the proposed funded service area. The BayWEB project will feature a vibrant Middle Mile network deployed at approximately 200 unique radio sites across the proposed funded service area. Motorola's network deployment will include both: (i) a Public Safety subsystem to provide wireless broadband service to public safety and government users based on Long Term Evolution (LTE) standards; and (ii) a Public Access subsystem to improve public broadband Internet access by community anchor institutions and business and residential end users. Utilizing 700 MHz spectrum, the Public Safety subsystem will improve and enhance the interoperability of public safety communications across the region and enable emergency responders to have broadband access to mission critical information, which will improve the delivery of health and safety services to millions of California residents. The system is scalable to accommodate public safety networks throughout California and can serve as a model for future public safety broadband build-outs throughout the United States. In addition, Verizon Wireless will be a vendor with which Motorola will have an agreement to ensure that that public safety users will be able to roam

beyond the proposed Middle Mile network when needed as well as enjoy access to a commercial wireless network within the proposed funded service area, if necessary. The Public Access subsystem will utilize unlicensed 5.2, 5.4, and 5.8 GHz spectrum and a broadband Point-to-Multipoint and Point-to-Point solution that will improve public broadband Internet access. It will spur faster and more affordable broadband service to community anchor institutions, community colleges, and residential and business end users. This public broadband network will be completely open, and all local broadband providers will be able to interconnect at any approximately 200 aggregation points. Motorola has commitments from established wireless broadband providers ' airCloud Communications, 101Netlink, Skyline Broadband Service, Cal DSL, Surfnet Communications, Internet Free Planet, and JAB Wireless, Inc. ' to utilize the Public Access subsystem to expand the availability of affordable wireless broadband service throughout the Bay Area. Motorola is extremely qualified to deploy and operate the proposed middle mile network. Motorola is a global communications leader that has been providing communications solutions for more than 80 years. Through other public-private partnerships, Motorola has substantial experience in deploying and operating a multitude of networks around the world, ranging from country-wide commercial cellular systems to state and region-wide voice and broadband networks. For example, in North America, Motorola owns and operates: (i) the South Carolina Palmetto public safety network, with 76 sites and more than 25,000 users; and (ii) the Illinois Starcom public safety network with more than 200 sites and approximately 18,000 users from 1,500 different governmental agencies. Motorola also has deployed the Austria TETRON Nationwide, Denmark Dansk Beredskabs Kommunikation (DBK) Nationwide TETRA Managed Service, Australia MMR Victoria, and Ireland Nationwide TETRA Managed Service networks. The public-private partnership between Motorola and public safety entities in the Bay Area is critical to the success and sustainability of BayWEB. This partnership is embodied in an executed agreement between Motorola and the Alameda County Sheriff as executive sponsor and Regional Mutual Aid Coordinator for Region 2, the Northern California Coastal Region, which includes the entire Bay Area, on behalf of the Policy Group of the Bay Area Regional Interoperability Communications System (BayRICS). The BayRICS Policy Group will work with Motorola to address quality of service, access, interoperability, policy, and system management issues for the Public Safety subsystem of the BayWEB project. The BayWEB project is 'shovel ready' because it will rely upon existing BayRICS facilities. In 2007, the Bay Area embarked upon BayRICS in order to improve interoperable communications throughout the ten counties which comprise the Bay Area Urban Area Security Initiative (UASI). The program involves a multi-jurisdiction and multi-disciplinary approach to interoperability, and includes communications capabilities for first responders and public safety professionals, as well as all other government services including public works, transportation agencies, and critical infrastructure organizations. BayRICS includes land mobile radio for voice interoperability, an interoperable information sharing strategy, and a robust ten county microwave network for backhaul. Because the BayWEB project utilizes existing infrastructure, the proposed Middle Mile network will be deployed in an efficient and cost-effective manner. The cost of this project is \$72,483,637, for which Motorola seeks a grant in the amount of \$50,593,551. Motorola proposes to make in-kind contributions to the project that have a total value of \$21,890,086 million, which represents slightly more than 30% of the total budget for the BayWEB project. The project will have a significant economic impact. Motorola estimates that the BayWeb project will create 1,315 jobs, which includes 374 direct jobs, 553 indirect jobs, and 388 induced jobs. The project will be instrumental in meeting the broadband needs of the Bay

Area. Motorola estimates that 48,000 public safety users will utilize the Public Safety subsystem of the proposed Middle Mile network by the end of the fifth year of the project. Motorola also estimates that broadband operators will utilize the Public Access subsystem to provide broadband service to 1600 community anchor institutions (other than public safety), 12,000 residential customers, and 800 businesses during that same time period. The BayWEB project is wholly dependent upon Motorola's securing funding under the Comprehensive Community Infrastructure (CCI) Program. This funding will permit Motorola to utilize the approximately 200 existing tower sites and other infrastructure in the Bay Area to deploy a state-of-the-art, Middle Mile network that will: (i) give first responders access to wireless broadband services, dynamic multimedia applications, and increased interoperability of data and voice services, and (ii) enable broadband providers access to deliver affordable wireless broadband service to community anchor institutions, community colleges, and end user customers. The BayWEB project meets all of the priorities of the CCI program and would accomplish the larger objectives of the Recovery Act.