Applicant Name: DEFENSE, HAWAII DEPARTMENT OF

Project Title: State of Hawaii Broadband Air Interface for Public Safety

Project Type: Comprehensive Community Infrastructure

_______________________ Executive Summary_______________________

The State of Hawaii and its partners, the four counties that represent all of the local government entities in the State, seek to participate in the early deployment of the nationwide interoperable public safety broadband wireless network in the 700 MHz public safety broadband spectrum. Our partnership was granted use of this spectrum, with conditions, by Order of the Federal Communications Commission (FCC) on May 12, 2010 in PS Docket No. 06-229. The system we intend to deploy will meet FCC requirements regarding technical standards, interoperability, equal access, and comparable use terms for all partners in the FCC waiver application. We understand that the new system will follow the technical requirements put forward by the Emergency Response Interoperability Center (ERIC) as required by the FCC. While we are aware that other proposals regarding activities within the State of Hawaii do or may exist, their content is unknown to us. Therefore, we provide herein a system and a supporting network package that will stand on its own. If other proposals mature we will work with the NTIA to excise overlap and adjust as necessary to maximize the efficient use of the funds granted. Where use of certain State Department of Education (DOE) connections assumes successful funding of those connections by other means, we have provided alternate means to achieve the same functionality. The State's use of any commercial facilities will be governed by State law and administrate rules relating to open procurement. Any passive, active, or pass through use of State owned telecommunications facilities and connections is prohibited by Article VII of the Constitution of the State of Hawaii and sections of the Hawaii Revised Statutes. Furthermore restrictions by lease and deed, along with prohibitions enumerated in many site environmental approvals, preclude the use of most remote radio facilities for any commercial purpose. Wherever possible, we expect that the development of government owned infrastructure and connections suggested herein will be selected for funding where a choice exits between it and the development of for profit infrastructure when the sole customer served is the State or local government(s). Our public safety agencies have a responsibility to prepare for and respond to natural disasters and other emergencies. The State of Hawaii has been afflicted with volcanic eruptions, earthquakes, tsunamis, hurricanes, and wildfires throughout its history. Our isolation from the rest of the country and our island geography with four counties spread amongst numerous islands provide our agencies with very unique challenges. Much of the area in which our radio and microwave systems operate is remote and far away from commercial infrastructure. In addition, the sensitive nature of their operation is not adequately secured with commercial networks. As we learned in two recent prolonged power blackouts on O'ahu, the commercial providers do not provide a robust and resilient system for the data needs of our public safety personnel. That is, the commercial broadband data sites are not built to public safety standards, do not provide adequate priority to public
safety users, and do not continue to operate when needed the most. This grant will give us the opportunity to build a broadband data system to address these concerns and provide robust, secure data services to emergency personnel throughout the state. The state of Hawai'i is comprised of only four local governments, the counties of Kauai, Hawai'i, Maui, and the City and County of Honolulu. The proposed system will provide service to a majority of the populated areas of each of these four communities. Our infrastructure and backhaul connectivity will pass over 400,000 households and 30,000 businesses. Each of these businesses and households will benefit from having better data tools available to public safety personnel. Nineteen police and fire stations and ten other state or local government facilities will directly benefit from middle mile connectivity. Public safety institutions throughout the state will benefit from the ability to easily exchange data with their mobile response personnel. The institutions that will benefit include 47 police stations, 92 fire stations and 30 hospitals or emergency medical stations. The primary intent of this network is to allow personnel in the field to access their agencies' databases and automated systems in a reliable and secure manner. Specifically we will encourage law enforcement agencies to develop applications for photo ID, photo and video distribution, CBRNE detection, maritime surveillance, and maritime monitoring. All our State and county criminal justice agencies are currently partnering on the development of a system utilizing a statewide Service Oriented Architecture (SOA) backbone which will enable law enforcement and the courts to easily and securely access criminal records. This project would extend a secure and reliable transmission of that data to field personnel. Our fire departments will gain wireless access to floor plans and drawings, and electronic command boards. Our EMS personnel will improve patient tracking and have the ability for real time transmission of medical data to any hospital in the state. All responders will benefit from supervisory access to computer aided dispatch data, an ability to exchange broadband data in the field, access to the Internet and support of mobile incident command centers. In order to serve the needs of our first responders in a timely and cost-efficient manner we intend to provide secure mobile access for public safety users by maximizing the use of existing government owned facilities and middle mile infrastructure. Our main goal will be to deploy a Long Term Evolution (LTE) broadband air interface system with as large a mobile coverage footprint as is possible using existing infrastructure. A secondary objective will be, only where necessary, to install or lease middle mile connectivity to make the system whole and redundant. Development and leasing of new facilities and towers to augment the network infrastructure will be kept to the absolute minimum required to achieve reasonable coverage goals and meet realistic construction timelines. Although a few of the facilities and connections we propose to use are not public safety grade, most noticeably those involving DOE sites and facilities, we have chosen to maximize the LTE coverage footprint rather than build robust middle mile infrastructure to those locations. The State of Hawai'i will provide overall management and operation of the public safety broadband service. The state and counties have established the Hawai'i Wireless Interoperability Network (HWIN) executive committee with high level representatives from them and federal organizations. The HWIN executive committee will serve as the advisory board to this system and as such will allow all the partners in the system a voice in operation and management. The State Department of Accounting and General Services in partnership with the State Department of Defense has broad experience in operating and maintaining middle mile backhaul and infrastructure. They presently hold over 300 FCC land mobile radio or microwave licenses, all in good standing. Neither the State of Hawai'i nor any of its partner counties have experience in implementing or operating a
sustainable broadband service. We intend to rely heavily on contractor and vendor support to implement and operate the network. We have been assured by numerous large vendors that they are anxious to bid on a competitive contract to provide managed services for this project. Implementation of this project will require $149,950,000 ($115.061 M grant and $34.889 M matching funds). This is our cost to make the system functional for most of our first responders in the majority of the populated area of the state. The State of Hawai‘i and its partner counties are committed to this broadband data system and intend to expand and improve the network using state and local monies in the future, especially with respect to improving sites and middle mile connections that were not originally installed for public safety use. Our initial projections for subscribers to the network are based on public safety and government users throughout the state. At full operational capability, we expect the network to serve about 10,368 public safety users. This includes 3,516 police, 2,007 fire and 4,845 other users. Within the first four years of operation we expect up to 5,000 active subscribers. This grant will provide 1000 subscriber units of those first 5,000. We expect user agencies to acquire the remaining units needed. Jobs saved or create will be 1433 using grant (ARRA)funds. We have projected negative cash flow for operations in years three through eight. We will be requesting those shortfalls from the State Legislature.