BayRICS Authority
STAFF REPORT

DATE: Thursday August 14, 2014

TO: BayRICS Board of Directors

FROM: Barry Fraser, General Manager

SUBJECT: Item 5 - BayLoop Network Status

RECOMMENDATION:

Information Only

Background

BayLoop is a private microwave network connecting 18 radio sites, as well as numerous Public Safety Answering Points (9-1-1 centers), Emergency Operations Centers (EOCs), and other key public safety facilities and throughout the San Francisco Bay Area. Built largely with UASI grant funding, BayLoop provides a secure, high-capacity platform for data and voice communications between public safety agencies, with a portion of the overall BayLoop capacity designed as a redundant loop to support regional mission critical applications.

BayLoop is owned and operated by the seven Counties (Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Solano) that have agreed to host BayLoop facilities (the BayLoop Counties). In May 2014, a new link was activated connecting the BayLoop loop and Sacramento County. BayRICS Authority currently provides service contracts for maintenance of specified equipment and network monitoring support for the BayLoop Counties.

BayLoop capacity is divided into two distinct sections, one designated for local County voice and data communications, and the second for regional use. BayLoop's regional data capacity had been reserved as backhaul for the BayWEB wireless broadband project. However, now that the BayWEB project has ended, this regional capacity is not being used.

Review and Evaluation of BayLoop

Over the past six months, an advisory group of representatives from each of the BayLoop Counties held a series of meetings to develop policies for management of the regional capacity of BayLoop. As a result of these meetings, a draft *BayLoop User Agreement and Security Policy* was developed, which also included a *Network Application Request Form* designed as a tool to aid the evaluation and approval of regional applications.

The advisory group also identified several public safety applications for BayLoop with potentially significant regional benefits. For example, information sharing applications such as CopLink and AIRES could interconnect Bay Loop Counties via BayLoop (as either a primary or redundant link). Other examples include a "red phone" redundant voice communications network connecting County PSAPs and dispatch centers. In the future, BayLoop may be valuable for connecting P25 voice systems via Inter Sub-System Interface (ISSI) technology. Other future uses may include backhaul capacity for FirstNet broadband wireless networks.

In addition, the activation of the Sacramento link to BayLoop now allows direct connectivity between Sacramento City and County Region, as well as State of California facilities in and around Sacramento. This connectivity could provide primary or redundant connectivity between the Bay Area and a host of State public safety applications and information sharing services.

The most promising application identified by the advisory group is "WebEOC." WebEOC is a multi-functional collaboration tool for emergency incident and event management, current used by several of the BayLoop Counties. Emergency managers and first responders can enter and view incident information in WebEOC status boards, which can then be shared with emergency responders in remote locations via a web-based interface.

Utilizing BayLoop regional capacity, participating agencies would be capable of using WebEOC to communicate interactively with other regional Emergency Operations Centers (EOCs), both on a day-to-day basis and during emergency incidents. Access to WebEOC via BayLoop would provide the following operational benefits:

- Provide a secure and resilient link to enhance emergency response and recovery and potentially replaces more costly existing communications services.
- Improve operational efficiency of individual EOCs, dispatch centers, and command operations
- Enhance communications between counties, cities, and outside agencies, thereby achieving key interoperable communications goals
- Efficiently spread WebEOC costs across multiple counties and cities

In April, San Mateo County submitted a network application request to use BayLoop regional capacity to operate the "WebEOC" application. Several Counties have begun limited testing of WebEOC using existing equipment and minimal optimization to validate the benefits of interconnecting County Emergency Operation Centers via BayLoop. The tests seek to demonstrate that BayLoop can serve as a valuable platform for operating WebEOC, as well as many of the other proposed uses envisioned by BayLoop Counties.

Additional Equipment and Engineering Needs

During the review of the WebEOC network request, the advisory group determined that additional termination equipment and network engineering will be required before WebEOC (or any other IP-based application) can run over the entire network loop. When BayLoop was reserved for the BayWEB project, Motorola agreed to pay for the necessary equipment to optimize the network for broadband data traffic. However, the BayWEB project ended before this work was completed.

Ultimately, BayLoop will require additional equipment and network engineering to be fully functional. Preliminary costs are estimated at approximately $300,000 for the hardware, software and engineering work required to activate up to five County sites. Staff is exploring various funding scenarios, as well as possible technology alternatives to reduce these costs. However, to date no viable solution has been identified. If no regional solution can be found, BayLoop Counties may have to assume future sustainability costs for the network.

The BayLoop advisory group will continue to discuss alternatives and evaluate WebEOC testing, and will develop recommendations for the Board to consider at its October meeting.