



Memorandum

TO: PUBLIC SAFETY, FINANCE AND
STRATEGIC SUPPORT COMMITTEE

FROM: Edgardo Garcia

SUBJECT: SEE BELOW

DATE: November 30, 2018

Approved

Date

12-6-18

**SUBJECT: PUBLIC SAFETY COMMUNICATIONS INTEROPERABILITY
SEMI-ANNUAL REPORT**

RECOMMENDATION

Accept the semi-annual report on public safety communications and data systems that promote interoperability for first responders in San José and the Bay Area.

BACKGROUND

In public safety, the term “interoperability” refers to the ability of different departments or agencies to operate in conjunction with each other during an incident. Successful interoperability means agencies’ communications and data systems can seamlessly communicate with other agencies.

Following the September 11, 2001 terrorist attacks, public safety agencies across the nation began working to standardize protocols and improve their interoperability with other agencies. The U.S. Department of Homeland Security provided grant funding through the Urban Area Security Initiative that could be used to upgrade systems and make them interoperable.

In the Bay Area, agencies are working on several major projects to make it possible for police and fire personnel to communicate and provide mutual aid in the event of a natural disaster, including an earthquake, fire, flood, or during a critical law-enforcement incident.

The following is an update on the status of projects involving the City of San José.

SEMI-ANNUAL UPDATE

Silicon Valley Regional Communications System

The Silicon Valley Regional Interoperability Authority (SVRIA), a Joint Powers Authority comprised of Santa Clara County agencies, including the City of San José, is tasked with coordinating, managing, and planning regional public safety technology initiatives. Its largest project is the countywide communications system for public safety known as the Silicon Valley Regional Communications System (SVRCS). When completed, SVRCS will replace legacy public safety radio systems operated by agency members throughout Santa Clara County with an interoperable, regional, two-way, Project 25 digital trunked radio system that will operate on the 700 and 800 MHz band. The 700 MHz band, an important swath of broadcast spectrum that has been freed up due to the digital television transition, is located just above the remaining TV broadcast channels, allowing radio signals to penetrate buildings and walls easily and covering larger geographic areas with less infrastructure. The SVRCS will allow users to share a number of communication paths, so agencies throughout the region can communicate with each other across jurisdictional boundaries.

The full cost of the SVRCS project originally was estimated at \$104.5 million; this estimate included the radio network, microwave backhaul, and approximately 8,600 radio devices. The SVRIA relied on grant funding to build out the first part of the SVRCS infrastructure. In 2014, the estimated total required to build out the remaining infrastructure was estimated at \$30 million and San José's proportional share of the cost for the infrastructure was estimated at \$10.9 million.

In 2014 and 2015, the Santa Clara Valley Transportation Authority (VTA) and the Santa Clara Valley Water District joined the system, spreading the cost among the additional user agencies. This resulted in a proportional decrease in each users' cost share for the remaining infrastructure.

Initially, San José had estimated having 5,000 radios on the system. At the time VTA proposed joining the system, San José decreased the number of radios estimated to 2,750 to reflect the current staffing levels and radio needs in each city department. As a result, San José's share of the cost contribution decreased from the estimated \$10.9 million to \$7.5 million. The SVRIA has estimated San José's yearly operations and membership cost at approximately \$1.0 million annually, beginning in 2018-2019.

In addition to the SVRCS infrastructure mentioned above, the City has invested in the purchase of new dual-band portable radios, mobile radios for use on patrol cars and fire rigs, and dispatch console equipment for the Public Safety Answering Point and Alternate Public Safety Answering Point. The dispatch consoles operate the SVRCS radio channels, as well as the current legacy Police and Fire frequencies.

Table 1 below lists the portable and mobile equipment San José has purchased, and the outstanding equipment that still must be procured. Table 1 has been amended from the last Public Safety, Finance, and Strategic Support Committee report to reflect actual radios purchased to date by each department and additional Police and Fire Department portable and mobile radio needs.

To date, San José has purchased a total of 2,706 radios for use on SVRCS by the Police and Fire Departments, as well as for the following departments: Transportation, Planning, Building and Code Enforcement, Parks, Recreation and Neighborhood Services, Public Works, and Environmental Services. The outstanding procurement of the SVRCS radios has been budgeted through the 2021-2022 Communications Capital Improvement Program, General Fund, and through various grant opportunities.

Table 1: SVRCS Radio Needs (As of December 2018)

Dept.	Type	Radios Needed		Radios Purchased		Remaining to be Purchased	
		#	Cost	#	Cost	#	Cost
Police	Portable	1499	\$7,889,522	1287	\$6,898,485	212	\$991,037
	Mobile	649	\$3,261,601	631	\$3,153,900	18	\$107,701
Fire	Portable	502	\$2,562,625	458	\$2,290,000	44	\$272,625
	Mobile	226	\$1,050,127	171	\$855,000	55	\$195,127
DOT (Parking/Traffic)	Portable	48	\$245,100	48	\$245,100	0	
	Mobile	0		0		0	
PBCE (Code)	Portable	1	\$5,000	1	\$5,000	0	
	Mobile	9	\$45,000	9	\$45,000	0	
PRNS (Park Rangers)	Portable	24	\$144,000	24	\$144,000	0	
	Mobile	12	\$72,000	12	\$72,000	0	
Public Works (Animal Control)	Portable	20	\$56,000	20	\$56,000	0	
	Mobile	17	\$85,000	17	\$85,000	0	
ESD (Muni Water)	Portable	28	\$72,000	28	\$72,000	0	
	Mobile	0		0		0	
TOTAL		3035	\$15,487,975	2706	\$13,921,485	329	\$1,566,490

As noted above, the City bought into the SVRIA with an anticipated need for 2,750 radios. However, current needs have increased this number to 3,035 radios; this number reflects additional radios for Police and Fire to account for additional staffing, Community Service Officers, portable radios for the Training Center, remaining reserve Fire Apparatus, and Fire Station Radios.

The additional radios will require the City to obtain additional subscriptions and increase the City's portion of the SVRIA maintenance fees. The City of San José is currently in discussions with the Valley Transit Authority and Santa Clara County Communications to acquire 300 additional annual subscriptions to the SVRIA. Because the County's radio subscriptions were already in the overall system count for SVRIA, the City will not have to pay for the initial subscriptions and only pay the annual maintenance cost moving forward. The annual maintenance cost is currently 978K and will increase by \$106K in 2019-2020, which will be included as part of the 2019-2020 Proposed Capital Improvement Program budget process.

Management from the Environmental Services Department's Regional Wastewater Facility is exploring the possibilities of joining SVRIA to service their facilities and aging radio infrastructure. The Administration will consider bringing forward a proposal in the 2019-2020 budget process to procure the necessary radios, if appropriate.

Table 2 below provides an overall summary of SVRCS project status:

Table 2: SVRCS Expansion Implementation Project Timeline as of December 2018

Major Milestone Task	Start Date	Current Estimated Finish Date	Status
Contract administration	12/22/15	2/1/16	Completed
System design approval	2/2/16	3/21/16	Completed
Order processing	3/22/16	3/28/16	Completed
Manufacture and Staging of equipment	3/29/16	7/7/16	Completed
Fleetmapping & Subscriber Template Dev	3/29/16	4/25/16	Completed
Site development/improvement (5 sites)	1/1/16	Q2/ 2020	In Progress
Installation			
ASTRO P25 Master Site 7.15 Upgrade	3/22/16	6/30/16	Completed
Install IP Logger	4/26/16	8/30/16	Completed
South Cell Site Installation	5/9/16	Q1 2019	In Progress
Central Cell Site Installation	10/25/16	Q3 2019	In Progress
West Cell Site Installation	4/4/17	Q3 2019	In Progress
Standalone Repeater Site Installation	6/5/17	Q2 2020	In Progress
ASTRO P25 Master Site 7.17 Upgrade	2/26/2018	3/9/2018	Completed
System Optimization	Q2 2020	Q4 2020	Delayed
Audit and Acceptance Testing	Q2 2020	Q2 2020	Delayed
Finalize		5/29/2020	Delayed

As noted in previous reports, this project was originally scheduled for completion by November 2018. It has been delayed due to challenges with the lease agreement, PG&E scheduling, and construction delays. Table 2 above reflects our current timeline for completion.

Completion of the remaining Central Cell site (Coyote Peak) must be accomplished before the City of San José can fully migrate to the new SVRCS system and its anticipated completion date is July 2019. Motorola is required by contract to demonstrate design performance before SVRIA will accept the final build out of each cell and the entire system. Once the Central Cell is complete, the City of San José Radio Shop and public safety personnel will perform additional agency-specific testing to verify adequate radio coverage for public safety personnel. Migration plans, including training for Public Safety personnel, are currently underway to position each department to leverage the new system upon completion. SVRIA anticipates completing the major milestones for the entire system in the second quarter of 2020.

Table 4 provides a status summary for the various SVRCS cell sites:

Table 4: SVRCS Site Status Summary as of December 2018

SVRCS Site	Status
<i>Master Site</i>	
Carol Drive (County Communications)	Operational Oct. 2014, expanded Jan. 2016
<i>West Cell Sites (10)</i>	9 of 10 sites installed, 8 sites operational
Santa Clara EComm – Prime	Operational Oct. 2014, expanded Jan. 2016
Sunnyvale DPS	Operational Oct. 2014, expanded Jan. 2016
Carol Drive (County Communications)	Operational Oct. 2014, expanded Jan. 2016
Mt View PD	Operational Oct. 2014, expanded Jan. 2016
Sunnyvale Fire Station 5	Operational Oct. 2016
Palo Alto Civic Center	Operational Jan. 2016
San José - Doyle Road	Operational Jan. 2016
Valley Medical Center	Operational June 2018
Los Gatos - Stickney Cell	Agreement to proceed signed by Site Manager: Pending electrical, A/C upgrade, equipment relocation, tower space
Mt. Rodoni	Pending PG&E and easement agreement
<i>Central Cell Sites (11)</i>	10 of 11 sites operational
San José City Hall – Prime	Operational Jan. 2016
San José PD Substation	Operational Nov. 2016
San José Fire Station 29	Operational Jan. 2016
Carol Drive (County Communications)	Operational Jan. 2016
Cadwallader	Operational July 2017
Milpitas PD	Operational Nov. 2017
Eagle Rock	Operational Nov. 2017
Sierra Azule	Operational Nov. 2017
Good Samaritan Hospital	Operational July 2018
Mission/Frazier	Operational Aug. 2018
Coyote Peak	Lease agreement and permits in process; Pending PG&E and A/C
<i>South Cell Sites (4)</i>	1 of 4 sites operational
Gilroy Target Range	Operational June 2016
Holiday Lake – Prime	Operational Feb. 2018
Gilroy Reservoir D	PG&E planned to energize 11/13/18; Delayed due to fires
Woodland Acres	Easement agreement in place; Pending PG&E design
<i>Standalone Repeaters (6)</i>	1 of 6 sites operational
Mt. Madonna	Operational; Pending testing
Copernicus Peak	Site design rejected, new design in process
Mt. Chual	PG&E contract signed 11/15/2018
Uvas Canyon	Site identification pending

Coyote Lake	Equip rec'd, site walk done; location updated; working on backhaul issues
Pacheco Peak	Equip rec'd, site walk done; working on-site access and power Issues.

Silicon Valley Regional Interoperability Authority Data Exchange:

The goal of the Silicon Valley Regional Interoperability Authority Data Exchange (SVRIA-Dx) project is to improve regional interoperable information data sharing between 15 Public Safety Answering Points by integrating 11 disparate Computer Aided Dispatch (CAD) systems operating in Santa Clara County and neighboring counties. Specifically, there are three key objectives to the design, development, and implementation of the project, which include:

- Create the ability and capacity for each participating Public Safety Answering Point CAD system to export, import, and display event and resource data created for or received from one or more other Public Safety Answering Point CAD systems;
- Enhance the sharing of information and facilitate interoperability across agencies; and
- Provide better access to and improve the display of event and resource status data for improved situational awareness and decision making by dispatch and field personnel.

In October 2015, San José was one of 13 Public Safety Answering Points that executed Service Level and Memorandum of Understanding agreements for the SVRIA-Dx project. Santa Clara County Information Services Department agreed to serve as the point of contact for the disparate CAD system integrations and coordinate the integration efforts with a third-party vendor. After several attempts to move the project forward, the County determined the solution being provided by the vendor would not be a long-term comprehensive solution.

In April 2017, the County advised the SVRIA agencies that a new approach would be taken to integrate the various disparate CAD systems, which would utilize the County's new Enterprise Services Bus, or Information Service Exchange, to build the adapters/connectors to interface directly with each agency's CAD system using the native application programming interface. The new design eliminated the need for a third-party vendor to create the environment that allowed data transfer directly from each agency through the County's system and then out to the other systems. Santa Clara County completed Phase I of development and demonstrated effectiveness using the City of Santa Clara's publicly consumable data elements by pulling them from the City of Santa Clara's CAD system and displaying them on both the Haystax/CalCOP (a Police operations software) and on Innterra (a fire operations software). Staff from San José Police and Fire departments are currently reviewing the proposed design and applications. From a law enforcement perspective, once Santa Clara County secures Department of Justice certification, more sensitive, non-public consumable criminal justice information will be shared as the project progresses.

First Responder Network Authority & Bay Area Regional Interoperable Communication Systems Authority:

Signed into Federal law on February 22, 2012, the Middle-Class Tax Relief and Job Creation Act created the First Responder Network Authority (FirstNet). The law gave FirstNet the mission to build, operate, and maintain the first nationwide high-speed wireless broadband network dedicated to public safety. The goal of the broadband network is to fulfill a fundamental need of the public safety community for reliable and secure broadband in emergencies, as well as to implement the last remaining recommendation of the federal 9/11 Commission. FirstNet seeks to bring 21st-century tools to millions of organizations and individuals responding to emergencies at the local, state, tribal, and federal levels.

On March 30, 2017, FirstNet announced AT&T was selected as the public-private partner to build the network. U.S. Department of Commerce Secretary Wilbur L. Ross advised that the value of the public-private partnership was \$46.5 billion, in which AT&T agreed to contribute \$40 billion to build and operate the network over the 25-year contract.

In California, the Governor's Office of Emergency Services (CalOES) represented the State's interests and assisted the Governor in improving the California plan prior to the deadline to opt in. Governor Brown opted in to the FirstNet/AT&T solution on December 28, 2017, after negotiations between CalOES and AT&T significantly improved the network proposal statewide.

CalOES has established a Broadband Services Division within the 9-1-1 Emergency Communications Branch, as well as the California First Responder Network Authority Board to manage the ongoing relationship with AT&T. These two organizations will provide coordination and recommendations for FirstNet infrastructure and coverage improvements in California based on outreach and input from each stakeholder. CalOES has provided AT&T the first 30 site locations for development based on initial feedback. Nationally, AT&T completed the FirstNet core at the end of March 2018, creating a physically separate network for public safety.

The broadband spectrum allocated to FirstNet, also known as Band 14, is not yet widely available to public safety agencies due to network hardware requirements that must be deployed throughout the nation. Currently there are 27 Band 14 sites in San José and 64 within the County. AT&T currently offers public safety agencies access to their existing 4G LTE network system. For public safety day-to-day operations, as well as in disaster situations, public safety would be given the highest priority to access AT&T's existing commercial cellular network to achieve the best possible speeds and connectivity. As the FirstNet network is fully built out through March of 2022, AT&T plans to migrate public safety users to the FirstNet broadband spectrum to receive the full feature set under their contract.

Currently, there are very few mobile devices (including phones and modems) or other hardware that can access the future FirstNet spectrum. During the build out of FirstNet, AT&T is offering FirstNet accounts with current public safety subscribers who have existing AT&T devices. The City of San José is currently testing devices on FirstNet, both Band 14 and legacy commercial devices, to ensure network performance will support the needs as promised by FirstNet/AT&T through each phase of the build out. City Staff and AT&T are working to provide a robust test

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environment in the two major upcoming downtown events, the College Football Championship, and the NHL All-star game.

San José continues to monitor FirstNet and evaluate the network performance and its progress through the Interoperability Communications Manager, our Federal Region 9 FirstNet Authority Public Safety Advocate, and through its seat on the Bay Area Regional Interoperable Communications System Authority. The Bay Area Regional Interoperable Communications System Authority was established in August 2011 with responsibility for planning, policy, and oversight of regional public safety communications projects, including FirstNet in the San Francisco Bay Area. Members include the State of California, City and County of San Francisco, City of Oakland, City of San José, Counties of Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Sonoma, and cities in the East Bay and South Bay. Each member jurisdiction has appointed a representative to the Authority's Board of Directors.

COORDINATION

This memorandum was coordinated with the Fire Department, Public Works Department, and the City Manager's Budget Office.

/s/

Edgardo Garcia
Chief of Police

For questions, please contact Rudy Yeung, Police Department, Bureau of Technical Services Acting Deputy Director, at (408) 537-1745.