



Memorandum

TO: PUBLIC SAFETY, FINANCE AND
STRATEGIC SUPPORT COMMITTEE

FROM: Edgardo Garcia

SUBJECT: SEE BELOW

DATE: December 4, 2019

Approved

Date

12-5-19

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

RECOMMENDATION

Accept the 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 those belonging to 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.

ANALYSIS

Silicon Valley Regional Communications System (SVRCS)

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 (P25) 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 will be able to 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 projected 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.

The Santa Clara Valley Transportation Authority (VTA) and Santa Clara Valley Water District joined the system between 2014 and 2015; this spread the costs across additional user agencies and 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. However, when 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 had 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 (hand pack), mobile radios (patrol car/fire apparatus), and dispatch console equipment for the Public Safety Answering Point (PSAP) and Alternate PSAP. The dispatch consoles operate the SVRCS radio channels, as well as the current legacy Police and Fire frequencies.

Table 1 (below) lists the specific portable and mobile equipment San José has purchased and the outstanding equipment that still needs to be procured. Table 1 has been amended from the last

Public Safety, Finance and Strategic Support (PSFSS) Committee report on December 13, 2018¹, to reflect actual radios purchased to date by each department and additional Police and Fire Department portable and mobile radio needs.

To date, the City has purchased a total of 2,901 radios for use on SVRCS by Police and Fire, as well as the Departments of 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 in the 2020-2024 Communications Capital Improvement Program (CIP), General Fund, and through various grant opportunities.

| Table 1: SVRCS Radio Needs (As of December 2019) | | | | | | | |
|--|----------|---------------|---------------------|------------------|---------------------|---------------------------|------------------|
| Dept. | Type | Radios Needed | | Radios Purchased | | Remaining to be Purchased | |
| | | # | Cost | # | Cost | # | Cost |
| Police | Portable | 1499 | \$7,954,879 | 1434 | \$7,579,179 | 65 | \$ 375,700 |
| | Mobile | 657 | \$3,301,580 | 631 | \$3,153,900 | 26 | \$ 147,680 |
| Fire | Portable | 502 | \$2,562,625 | 458 | \$2,290,000 | 44 | \$ 272,625 |
| | Mobile | 230 | \$1,423,619 | 219 | \$1,354,704 | 11 | \$ 68,915 |
| DOT (PTCO) | 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 | | 3047 | \$15,966,803 | 2901 | \$15,101,883 | 146 | \$864,920 |

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 3,047 radios; this number reflects additional radios for Police and Fire Departments to account for additional staffing, Community Service

¹ <https://sanjose.legistar.com/View.ashx?M=F&ID=6822289&GUID=DA8A6635-C4FB-46DE-8AD8-1F7DB3BD5A7D>

Officers, portable radios for the Fire Training Center (Fire Academy Recruits and Staff), remaining Reserve Fire Apparatus, Fire Station Radios, and an increase in the Police Department fleet.

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 came to an agreement with the Valley Transit Authority (VTA) to acquire 250 additional annual subscriptions to the SVRIA therefore, increasing City of San José approved licensing from 2,750 to 3,000. Because the VTA's radio subscriptions were already in the overall system count for SVRIA, the City does not need to pay for the initial subscription fees but will require payment for the annual maintenance cost moving forward. FY 2019 - 2020 maintenance costs are budgeted at \$1.1 million.

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

| Table 2: SVRCS Expansion Implementation Project Timeline as of December 2019 | | | |
|---|-------------------|--------------------|---------------|
| Major Milestone Task | Start Date | 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 (2 sites) | 1/1/16 | Est. Q1 2020 | In process |
| 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 | 7/12/2019 | Completed |
| Central Cell Site Installation | 10/25/16 | 11/1/2019 | Completed |
| West Cell Site Installation | 4/4/17 | 10/09/2019 | Completed |
| Standalone Repeater Site Installation | 6/5/17 | Est. Q1 2020 | In process |
| ASTRO P25 Master Site 7.17 Upgrade | 2/26/2018 | 3/9/2018 | Completed |
| System Optimization | 7/12/2019 | Est. Q1 2020 | Ongoing |
| Audit and Acceptance Testing | 7/12/2019 | Est. Q1 2020 | Ongoing |
| Finalize | | Est. 5/29/2020 | Delayed |

Completion of the remaining SVRCS Central Cell site, which included Coyote Peak, was accomplished November 1, 2019. City of San José staff along with Motorola, Inc. tested the Central Cell performance during the week of November 18th, 2019. The Central Cell passed the acceptance testing and is officially completed.

The two-remaining remote SVRCS South Cell sites are in the South Santa Clara County and are scheduled to be completed in Q1 2020. These two sites will have no impact to San José City department services as they are outside of the City limits in rural areas in the SVRCS South Cell which San Jose Public Safety do not access routinely.

Police and Fire Department radios have been programmed with the new SVRCS talkgroups. SVRIA has scheduled preventative maintenance and other systemwide upgrades that will occur over the next 60 days. Final migration preparatory tasks, including training for public safety and communications personnel are nearly completed. Once the above is complete, the City of San José will be positioned to fully migrate to the new SVRCS system after the first of the year. The Police Department is currently targeting late January or early February 2020 to cut over to SVRCS. The Fire Department will migrate on or before July 1, 2020.

In preparation for the recent Public Safety Power Shutdowns, the City of San José worked closely with SVRIA to ensure the necessary power back-up infrastructure at each city owned site was serviced and fueled to capacity. City of San José Public Works Department continues to partner with SVRIA on preventive maintenance protocols and record keeping ensuring redundant energy sources are functional; including battery backup systems and site cooling measures. During outages, generator fuel levels were monitored and refueling occurred as needed for continuity of performance at each critical radio site. Public Works Department is currently researching remote monitoring solutions and funding sources that will provide visibility on the current status of all critical radio infrastructure sites. Real-time fuel levels, generator operation or failure, battery backup health and climate controls are some of the metrics necessary to ensure future continued operations during outages.

Table 3: SVRCS Site Status Summary as of December 2019

| SVRCS Site | Status |
|-------------------------------------|---|
| <i>Master Site</i> | Completed |
| Carol Drive (County Communications) | Operational Oct. 2014, expanded Jan. 2016 |
| <i>West Cell Sites (10)</i> | Completed/Accepted Oct. 2019 |
| Santa Clara E Comm – Prime | Operational Oct. 2014, expanded Jan. 2016 |
| Sunnyvale DPS | Operational Oct. 2014, expanded Jan. 2016 |
| Sunnyvale Fire Station 5 | Operational Oct. 2016 |
| Mt View PD | Operational Oct. 2014, expanded Jan. 2016 |
| Palo Alto Civic Center | Operational Jan. 2016 |
| Mt. Rodoni | Operational Sept. 2019 |
| San José - Doyle Road | Operational Jan. 2016 |
| Los Gatos - Stickney Cell | Operational Sept. 2019 |
| Valley Medical Center | Operational June 2018 |
| Carol Drive (County Communications) | Operational Oct. 2014, expanded Jan. 2016 |
| <i>Central Cell Sites (11)</i> | Completed/Accepted Nov. 2019 |
| San José City Hall – Prime | Operational Jan. 2016 |
| Mission/Frazier | Operational Aug. 2018 |
| Milpitas PD | Operational Nov. 2017 |
| Eagle Rock | Operational Nov. 2017 |
| San José Fire Station 29 | Operational Jan. 2016 |

| | |
|-------------------------------------|--|
| Cadwallader | Operational July 2017 |
| Carol Drive (County Communications) | Operational Jan. 2016 |
| Good Samaritan Hospital | Operational July 2018 |
| Sierra Azule | Operational Nov. 2017 |
| San José PD Substation | Operational Nov. 2016 |
| Coyote Peak | Operational Nov. 2019 |
| <i>South Cell Sites (4)</i> | Completed/Accepted July 2019 |
| Holiday Lake – Prime | Operational Feb. 2018 |
| Woodland Acres | Operational July 2019 |
| Gilroy Reservoir D | Operational July 2019 |
| Gilroy Target Range | Operational June 2016 |
| <i>Standalone Repeaters (6)</i> | 4 of 6 sites operational |
| Copernicus Peak | Operational August 2019 |
| Mt. Chual | Operational April 2019 |
| Uvas Canyon | Land identified, construction package submitted for permit |
| Mt. Madonna | Operational Feb. 2019 |
| Coyote Lake | Land identified, construction package submitted for permit |
| Pacheco Peak | Operational Nov. 2019 |

SVRIA-Dx (Data Exchange, CAD-to-CAD):

The goal of the SVRIA-Dx project is to improve regional interoperable information data sharing between each of the 15 PSAPs in Santa Clara County by integrating 11 disparate Computer Aided Dispatch (CAD) systems into a single information sharing environment. 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 PSAP CAD system to export, import, and display event and resource data created for or received from one or more other PSAP 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 PSAPs that executed Service Level and Memorandum of Understanding agreements (SLA/MOU) for the SVRIA-Dx project. Santa Clara County (County) Information Services Department (ISD) 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. The County completed Phase I of development and demonstrated effectiveness using the City of Santa Clara publicly consumable data elements by pulling them from the City of Santa Clara's CAD system and displaying them on both the Haystax/CalCOP and on Innterra, a fire operations software that allows agencies to display real time apparatus and incident locations as well as perform analytics on their respective CAD data.

In September 2019, staff from the San José Police Department discussed, with the new County ISD team, the development of the current iteration of an information sharing environment. County ISD staff advised that all previous SVRIA-Dx CAD development work has been abandoned as it is no longer viable in the latest environment. City of San José staff is working with the County staff to develop a new scope of work to redevelop the connection to the new County platform.

First Responder Network Authority (FirstNet) & 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 specific broadband spectrum allocated to FirstNet, also known as Band 14, is now in the second year of a five year build out plan. To date, FirstNet has added Band 14 to over 70 cellular sites in the City of San José and over 170 sites within Santa Clara County. FirstNet currently offers public safety agencies access to their existing 4G LTE network system along with Band 14 through the FirstNet Core, which includes special features of “Priority” and “Preemption.” These features support public safety day-to-day operations, as well as during disaster situations to ensure that public safety will have the highest priority to access the FirstNet network for mission critical communication capabilities and data requirements. As the FirstNet network is fully built out, through March of 2022, public safety users will continue to benefit from the continued FirstNet expansion of Band 14 sites and the full feature set guaranteed under their contract.

Currently, many mobile devices (including phones and modems) or other hardware that are able to access the FirstNet spectrum are in the market place. The City of San José continues to test devices on FirstNet to ensure network performance will support the needs as promised by FirstNet/AT&T through each phase of the build out.

On June 25, 2019², the San José City Council approved a contract with FirstNet/AT&T to begin implementation of FirstNet services throughout multiple City departments. Beginning in November 2019, a pilot program of 20 phones per department was launched in the Police Department, Fire Department, Office of Emergency Management, City Manager’s Office, Public Works Department and Information Technology Department to initiate Phase 1 of the FirstNet Project Charter. The scope of Phase 1 will include deployment of FirstNet phones and beginning development work for Public Safety mobile solutions and data connectivity.

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 (BAYRICS). Additionally, BAYRICS is developing a regional memorandum of understating for interoperability between each of the five 700 MHz trunked radio systems currently in the Bay Area. These systems include SVRCS, East Bay Regional Communications System (Alameda and Contra Costa Counties), San Mateo County, San Francisco County, and Marin County. The agreement will outline interoperability protocol for regional mutual aid responses, special use cases, notifications and data sharing, and required security measures between authorized users.

EVALUATION AND FOLLOW-UP

Updates on the Silicon Valley Regional Communications System and on FirstNet evaluation and migration are also being provided through the Smart City Roadmap Update, an item heard by the Smart Cities and Service Improvements Committee on a monthly basis. Given the substantial progress made on these projects, staff recommends that the Public Safety Communications

² <https://sanjose.legistar.com/View.ashx?M=F&ID=7319019&GUID=258BEDB3-0EEC-4E54-A7B4-A24C8C923187>

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Subject: Public Safety Communications Interoperability Annual Report

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Interoperability Annual Report be removed from the PSFSS workplan and that future updates on these topics be provided through the monthly Smart City Roadmap Update item.

COORDINATION

This memorandum was coordinated with the Fire Department, Public Works Department, the City Attorney's Office, The City Manager's Office of Innovation and Digital Strategy and the City Manager's Budget Office.

/s/

Edgardo Garcia
Chief of Police

For questions, please contact Judith Torrico, San José Police Department, Bureau of Technical Services Deputy Director at (408) 277-5176.