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CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

# Memorandum

**TO:** SMART CITIES AND SERVICE IMPROVEMENTS COMMITTEE

**FROM:** Edgardo Garcia

**SUBJECT:** **SEE BELOW**

**DATE:** November 14, 2020

| Approved | | Date | 23 November 2020 |
|---|---|---|---|

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

## RECOMMENDATION

Accept the annual report on public safety communications 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 and agencies to operate in conjunction with each other during an incident. Successful interoperability means agencies' staffs and data systems seamlessly communicate across all organizational lines.

Following the September 11, 2001 terrorist attacks, public safety agencies across the nation began working to standardize protocols and improve interoperability between agencies. The U.S. Department of Homeland Security provided grant funding through the Urban Area Security Initiative to make investments in communications infrastructure and systems specifically to increase interoperable capabilities.

In the Bay Area, agencies are working on several major projects to make it possible for police, fire, and emergency management personnel to communicate and provide mutual aid in the event of disasters, including earthquakes, fires, floods, or critical law-enforcement incidents.

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

## ANNUAL UPDATE FOR DECEMBER 1, 2019 – DECEMBER 1, 2020

### *Silicon Valley Regional Communications System (SVRCS)*

The Silicon Valley Regional Interoperability Authority (SVRIA), a Joint Powers Authority (JPA) 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 individually 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 due to the digital television transition, is located just above the remaining TV broadcast channels. The radio waves in this portion of the spectrum penetrate buildings and walls more easily and can cover larger geographic areas with less infrastructure. The SVRCS will allow users to share a number of common 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 across all member agencies. That 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 costfor the infrastructure based on number of radios on the shared network 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 SVRCS 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 to the project was decreased from the estimated $10.9 million to $7.5 million. Once SVRCS is complete, the SVRIA has estimated San José's share of ongoing 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 totaling investments over $19M. 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 the City has purchased as of November 2020, which has been amended from the last Public Safety, Finance, and Strategic Support (PSFSS) Committee report on December 12, 2019. The table reflects 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 3,047 radios for use on SVRCS by Police and Fire Departments, Office of Emergency Management, the Transportation, Planning, Building and Code Enforcement, Parks, Recreation and Neighborhood Services, Public Works, and Environmental Services departments.

**Table 1: SVRCS Radio Needs (As of December 2020)**

| Dept. | Type | Radios Needed | | Radios Purchased | | Remaining to be Purchased | |
|---|---|---|---|---|---|---|---|
| | | # | Cost | # | Cost | # | Cost |
| Police | Portable | 1499 | $7,954,879 | 1499 | $7,579,179 | 0 | |
| | Mobile | 657 | $3,301,580 | 657 | $3,153,900 | 0 | |
| Fire | Portable | 502 | $2,562,625 | 502 | $2,290,000 | 0 | |
| | Mobile | 230 | $1,423,619 | 230 | $1,354,704 | 0 | |
| 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** | **3047** | **$15,966,803** | | |

As noted above, the City initially subscribed into the SVRCS 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 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 required the City to obtain supplementary subscriptions and increase the City's portion of the SVRIA maintenance fees, which are based on each member agency's radio

count as a portion of all. The City of San José came to an agreement with the Valley Transit Authority (VTA) to acquire 250 additional annual SCRIA subscriptions, increasing the City's approved subscriptions from 2750 to 3000.

In June 2020, the SVRIA conducted a "True-Up" audit of actual radios each agency has deployed on the system compared to the original base subscriptions. During this process, the City further increased its annual subscriptions to 3,250 due to actual and anticipated additions in the coming years. Because the VTA's radio subscriptions were already in the overall system count for SVRIA and resulting "True-Up" agreement, the City did not need to pay for the initial subscription fees, but will require payment for higher annual costs moving forward. The 2020-2021 maintenance fee was $1,189,686.

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

**Table 2: SVRCS Expansion Implementation Project Timeline as of September 2020**

| 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 |
| Fleet mapping & Subscriber Template Dev | 3/29/16 | 4/25/16 | Completed |
| Site development/improvement (2 sites) | 1/1/16 | Est. Q1 2020 | Completed |
| 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 | Completed |
| ASTRO P25 Master Site 7.17 Upgrade | 2/26/2018 | 3/9/2018 | Completed |
| System Optimization | 7/12/2019 | 9/5/2020 | Completed |
| Audit and Acceptance Testing | 7/12/2019 | 9/5/2020 | Completed |
| Finalize | 12/22/15 | 9/5/2020 | COMPLETED |

The last two remote SVRCS South Cell sites were in South Santa Clara County and were completed in March and April 2020. The system was finalized and accepted by SVRIA on September 5, 2020.

Post project, the City of San José continues to work closely with SVRIA to ensure the necessary back-up power infrastructure (generators) at each City-owned site was serviced, exercised, and fueled to capacity. Wildfires in 2020 in the Santa Cruz mountains and San Jose's East Foothills threatened multiple remote sites and the resulting loss of power activated multiple generators. The generator on Mt. Frazier, which services multiple sites suffered a catastrophic equipment failure. Santa Clara County responded with a temporary generator and the site was restored in

approximately 10 hours. Building on these lessons will continue to improve the resilience of the network.

The Public Works Department secured funding for a remote monitoring solution to provide visibility on the current status of all critical radio infrastructure sites within San Jose. Real-time fuel levels, generator operation or failure, battery backup health, and climate controls are some of the metrics to be deployed to support continued operations during outages. Implementation is on-going and is slated for completion by June 30, 2021.

The Public Works Department has also secured funding for a consultant to evaluate the need to maintain some portion of the legacy system, which could add costs. The legacy system supports a portion of the overall non-public safety radio program and serves as a backup system to the newer public safety radio system in place. The consultant services are expected to be available in early 2021 and will be responsible in reviewing the current system conditions and provide recommendations to correctly scope and size a new system to ensure the continuity and reliability of operations. The consultant's work will include estimating the cost of the system replacement, which will be brought forth as a future budget proposal for consideration.

**Table 3: SVRCS Site Status Summary as of September 2020**

| SVRCS Site | Status |
|---|---|
| *Master Site* | Completed |
| Carol Drive (County Communications) | Operational Oct. 2014, expanded Jan. 2016 |
| *West Cell Sites (10)* | 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 |
| *Central Cell Sites (11)* | 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 |
| *South Cell Sites (4)* | 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 |
| *Standalone Repeaters (6)* | All sites completed/accepted |
| Mt. Madonna | Operational February 2019 |
| Mt. Chual | Operational April 2019 |
| Copernicus Peak | Operational August 2019 |
| Pacheco Peak | Operational Nov. 2019 |
| Coyote Lake | Operational March 2020 |
| Uvas Canyon | Operational April 2020 |

The Police Department went live and cut over on the SVRCS on March 16, 2020. The Fire Department went live on July 1, 2020. The departments' smooth transition was a result of thousands of hours spent on configuration, testing, back-up system testing, and training of line and dispatch personnel. Staff from Police, Fire, both dispatch centers, and Public Works collaborated to ensure field personnel, dispatch personnel were able to migrate seamlessly to the new system without interruption of Public Safety services.

For the first time in history, SVRCS has achieved 100% interoperability among all Santa Clara County Public Safety agencies. Emergency response and command-and-control between agencies is now seamless. Recent examples of coordinated responses between multiple agencies include the active shooter at the Gilroy Garlic Festival, civil unrest in mid-2020, and Election protests in November 2020.

Interoperable communications are also now possible with neighboring Alameda County/Contra Costa County, San Mateo County, and City/County of San Francisco. Multiple units in the Police Department have been able to communicate during critical operations while in the above jurisdictions, enhancing situational awareness and first responder safety in those cases. A recent event that started in San José terminated in Pleasanton. Police Personnel were able to switch to the local jurisdiction radio system to coordinate the incident and communicate with the Pleasanton Police Department, which provided support to San José Police personnel. Likewise, cooperating public safety personnel from those other systems, when called into Santa Clara County, will be able to access the SVRCS for communications during a local or regional events. As one example, during the recent civil unrest in San José, California Highway Patrol assisted and were able to communicate quickly and seamlessly with SJPD Incident Command Post and field units, all utilizing their own radios.

On October 12, 2020, the California Department of Justice (CA DOJ) notified law enforcement agencies throughout California of the requirement to encrypt any radio communications that transmit confidential Criminal Justice Information (CJI) and Personally Identifiable Information (PII). This new policy, established by CA DOJ and the Federal Bureau of Investigation (FBI) Criminal Justice Information Services (CJIS), establishes procedures for the handling of sensitive law enforcement information (warrant details, probation and parole information, driver's license, and vehicle registration status).

Generally, PII is information that can be used to distinguish or trace an individual's identity, such as an individual's first name, or first initial and last name in combination with any specific data element. Confidential data elements include Social Security Number, passport number, military identification (ID) number, and other unique identifiers issued on a government document.

The San José Police Department anticipated this directive and ensured the San José-specific SVRCS channels used to transmit sensitive CJIS and PII were encrypted. However, not every Santa Clara County agency on the SVRCS system encrypted their channels. Those agencies will be required to provide CA DOJ their workplan to do so by December 31, 2020. Additionally, the SVRIA JPA initially only chose to encrypt a few of the law enforcement interoperable channels. The SVRIA Workgroup is involved with a countywide effort to coordinate encryption programming on all necessary channels. While the San José Police Department is compliant today, and in order to maintain interoperability, San José Public Works Radio Shop will need to reprogram Police and Fire Department radios over the next 6 to 7 months to ensure a smooth transition of agencies who update to encrypted channels.

In November 2020, SVRIA completed a comprehensive equipment refresh of the radio sites (communications hardware and battery backup components) and microwave infrastructure due to the age of some of the original equipment (vintage 2012-2015). Likewise, the City of San José needs to begin planning for the replacement of SVRCS P25 portable (handheld) and mobile radios (patrol car or fire apparatus) because they are at end-of-support and will no longer be supported by Motorola, which has accelerated replacement schedules for public safety agencies using their technologies. In January 2020, Public Works, Police Department, and Fire Department staff started performing an analysis to finalize the replacement cycle and associated budgetary impacts. Preliminary cost estimates vary based on purchasing commitments with longer terms providing lower per-unit costs. These various purchasing commitments will continue to be discussed with the City Manager's Budget Office and Finance-Purchasing. Table 4, below, provides an early estimate based on shorter commitment/higher unit pricing, as well as a longer commitment/discounted unit pricing.

| Table 4: End-of-Support | | | | |
|---|---|---|---|---|
| Dept/type | Last date of support | Radio Count | 2021 Contract | Long-term Contract |
| PD portable radios | July 31, 2021 | 890 | $7.56M | $5.93M |
| PD mobile radios | September 30, 2022 | 607 | $4.95M | $3.88M |
| FD mobile radios | July 31, 2023 | 171 | $1.51M | $1.2M |
| FD portable radios | December 31, 2023 | 398 | $3.5M | $2.74M |
| | | | **$17.51M** | **$13.75M** |

In the table above, the 2021 Contract is pricing from a cooperative purchasing agreement from the State of Texas at a unit price of approximately $8,500. The long-term contract pricing is approximately $6,700 per unit. However, it requires an 8-year purchase agreement that locks the City in to a long-duration contract. Both options need to be reviewed further to determine which is most advantageous for the City, especially considering budget constraints communicated by the Budget Office.

## COORDINATION

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