



# Memorandum

**TO:** PUBLIC SAFETY, FINANCE AND STRATEGIC SUPPORT COMMITTEE  
**FROM:** Robert Sapien, Jr.  
**SUBJECT:** FIRE DEPARTMENT SWORN STAFFING LEVELS ANNUAL REPORT  
**DATE:** October 6, 2021

Approved

Date

10/14/2021

## RECOMMENDATION

Accept the annual report on Fire Department sworn staffing levels for 2020-2021, including filled and vacant position status, the use of relief staffing and overtime to maintain daily staffing levels, and a comparison of San José's apparatus staffing models to other comparable and surrounding agencies.

## BACKGROUND

The San José Fire Department's (Department) mission is to protect lives, property and the environment through prevention and response. The Department deploys resources to provide timely and effective response to all community risks including fire, rescue, hazardous materials releases, and emergency medical services (EMS) requests. The Department's geographical service area is 208.17 square miles including 181.36 square miles within City limits and an additional 26.81 square miles of area serviced by agreement between the Santa Clara Central Fire Protection District and the City of San José (City). The State of California Department of Finance estimates a City population of 1,029,782<sup>1</sup> as of January 1, 2021. In Fiscal Year (FY) 2020-2021, the Department responded to 94,784 incidents, 3.48% more than the prior year.

Staffed response resources are deployed out of 33 fire stations including 5 Battalion Chiefs, 32 Engine Companies, 9 Truck Companies, 1 Urban Search and Rescue Company, 3 Rescue-Medic Units ("Squad"), 1 Aircraft Rescue and Fire Fighting (ARFF) Company, and 1 Paramedic Coordinator.

The Memorandum of Agreement between the City of San José and International Association of Firefighters (IAFF), Local 230<sup>2</sup> specifies the following staffing levels:

<sup>1</sup> <https://www.dof.ca.gov/forecasting/demographics/estimates/e-1/>

<sup>2</sup> July 1, 2018 to June 30, 2023 City of San José and IAFF Local Memorandum of Agreement - <https://www.sanjoseca.gov/home/showpublisheddocument/40510/637068396204500000>

- Each single piece Engine Company shall have a minimum of four (4) line personnel.
- Each three (3) piece Engine Company shall have a minimum of six (6) line personnel.
- Each Truck Company or Urban Search and Rescue vehicle shall have a minimum of four (4) line personnel.
- Each Battalion shall have a minimum of one (1) Battalion Chief or person acting in the capacity per shift.

Additionally, the Squad Program Side Letter Agreement Between the City and IAFF Local 230<sup>3</sup> specifies that Rescue-Medic Units (Squads) will be staffed with two (2) line personnel.

The resulting daily minimum staffing level for regularly deployed resources is 186 personnel working 24-hour shifts. To maintain the minimum staffing levels, position vacancies are backfilled by either on-duty relief personnel or by off-duty personnel on an overtime basis.

### ***Augmented Staffing Levels/Mutual Aid***

The Department continuously monitors conditions and augments staffing levels to meet particular hazards such as high fire danger periods (i.e. Red Flag Warning), flood potential, large events (i.e. sporting events), and others. During these periods, resources that best meet the forecasted hazard are staffed by relief personnel or on an overtime basis in addition to normal daily staffing. For example, when high fire danger is predicted, the Duty Chief may require additional personnel to staff wildland firefighting equipment such as Type 3 and/or Type 6 Engines that have four-wheel drive capability, and/or Water Tenders.

When resources are deployed for extended mutual aid assignments throughout the State of California, similar reserve resources are staffed by relief personnel or on an overtime basis to bring local coverage to normal levels. For example, when 22 personnel are deployed to a significant incident as a Strike Team (5 Engines, 1 Strike Team Leader, 1 Strike Team Leader trainee), 5 additional reserve Engines and 2 Battalion Chiefs are placed into service with equivalent number of personnel to provide standard coverage locally.

### ***Department Staffing***

The Department reached its highest staffing levels in FY 2007-2008 with 758 authorized sworn positions. In subsequent years, the Department proposed substantial reductions to meet budget reduction targets as impacts of the Great Recession challenged City resources. The FY 2010-2011 Operating Budget<sup>4</sup> eliminated 75 sworn positions resulting in the closure of Fire Engine 30, Fire Engine 33, Fire Engine 34, Fire Engine 35, Truck 3, and reduced the Hazardous Incident Team (HIT 29) from four to two personnel. FY 2011-2012 Operating Budget<sup>5</sup> action resulted in

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<sup>3</sup> *October 1, 2018 Squad Program Side Letter Agreement Between the City of San José and IAFF Local 230* - <https://www.sanjoseca.gov/home/showpublisheddocument/40520/637068396235430000>

<sup>4</sup> *2010-2011 City of San José Adopted Operating Budget* - <https://www.sanjoseca.gov/home/showpublisheddocument/50625/637152074933900000>

<sup>5</sup> *2011-2012 City of San José Adopted Operating Budget* - <https://www.sanjoseca.gov/home/showpublisheddocument/50645/637152094524730000>

the elimination of 28 sworn positions achieved by the reduction of Truck and US&R company daily staffing from 5 to 4 and Truck Company minimum staffing was reduced from 5 to 4 in the IAFF Local 230 Memorandum of Agreement. In that same year, the 6 remaining positions on the HIT 29 were eliminated and hazardous materials response was transferred to Truck 29. While many Department resources have been restored, Truck 3 and Engine 33 remain out of service indefinitely and Truck 29 is placed out of service when HIT 29 is committed to a hazardous materials response. The 2020-2021 Adopted Operating Budget authorized 707 sworn positions and the 2021-2022 Adopted Operating Budget authorized 719 sworn positions, which includes 14 new positions for Fire Station 37 and the elimination of a Battalion Chief and a Fire Captain position (incumbents were placed in vacant frontline positions) that were replaced with civilian positions.

### ***2016 Fire Department Organizational Review***

The Department first presented its City Council directed Fire Department Organizational Review to the Public Safety, Finance and Strategic Support Committee (PSFSS) on February 18, 2016<sup>6</sup>. The Organizational Review, conducted by Citygate Associates, LLC, included a community risk assessment and a Standards of Response Coverage (SOC) assessment that analyzed Department fire crew deployment. The SOC evaluated a variety of factors including response time performance, effective firefighting force (resources) assembly time, call volume, and others. The recommendations contained in Organizational Review have since guided the Department's Strategic Business Plan goals and objectives and recommendations to City Council. On August 10, 2018, Council voted to place the Disaster Preparedness, Public Safety, and Infrastructure Bond Measure on the November 2018 ballot. The passage of Measure T enabled the City to address some of the gaps identified in the Fire Department Organizational Review SOC analysis including construction of new Fire Stations 32, 36, and 37. 42 sworn positions will be required to staff newly deployed Fire Engines 32, 36, and 37 (12 front-line and 2 relief positions per fire station).

### ***Current Authorized Sworn Positions***

The 2021-2022 Adopted Department Operating Budget<sup>7</sup> authorizes 719 sworn positions, 14 of which are effective as of January 1, 2022 to enable staffing of the new Fire Station 37. Authorized full-time sworn positions and classifications are shown in Table 1 below.

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<sup>6</sup> [February 18, 2016 Fire Department Organizational Review report to PSFSS - https://www.sanjoseca.gov/home/showpublisheddocument/18961/636683753806870000](https://www.sanjoseca.gov/home/showpublisheddocument/18961/636683753806870000)

<sup>7</sup> [2021-2022 City of San José Adopted Operating Budget - Fire Department Section - https://www.sanjoseca.gov/home/showpublisheddocument/72255/637556895063500000](https://www.sanjoseca.gov/home/showpublisheddocument/72255/637556895063500000)

Table 1: Authorized Full-Time Sworn Positions

<b>Sworn Position (Rank)</b>	<b>Authorized Positions</b>
Fire Chief	1
Assistant Fire Chief	1
Deputy Fire Chief	4
Battalion Chief	21
Fire Captain	175
Arson Investigator	3
Fire Prevention Inspector	13
Fire Engineer	234
Firefighter	267

6 of the authorized position are exempt senior management positions, 31 sworn positions are assigned to 40-hour administrative staff roles and the 3 Arson Investigators work 24-hour schedules; however, Arson Investigator absences or temporary vacancies may be left unfilled. The remaining 679 authorized positions are assigned to 24-hour shift field assignments, approximately 225 per shift (A, B, C) to cover the daily 186 personnel minimum staffing level. Daily vacancies are filled by unassigned on-duty personnel (relief) or by off-duty personnel on an overtime basis. Actual staffing levels fluctuate due to attrition and timing of Fire Fighter Recruit academies. As of June 30, 2021, actual staffing (filled positions) was 681 personnel. The next Fire Fighter Recruit Academy of 25-30 recruits is scheduled to begin on November 15, 2021.

## **ANALYSIS**

### ***Filled and Vacant Position Status***

The Department maintains ongoing recruitment processes to keep pace with vacancies in sworn ranks which occur due to retirements, separations from employment, or added budgeted positions. Promotions to sworn ranks below Deputy Fire Chief are filled internally, and new sworn employees are onboarded at the Firefighter Recruit level. Firefighter Recruits must hold either Emergency Medical Technician (EMT) certification or Paramedic licensure at time of hire. The Department generally conducts one or two 25-person Firefighter Recruit Academies per year. From FY 2017-2018 to FY 2020-2021, the Department averaged 28 sworn employee separations annually, approximately 4% per year. The average sworn vacancy rate over that period was 3.82%. Actual Department separations and hiring experience for fiscal years 2017-2018 to 2020-2021 is provided in Table 2 below.

Table 2: Separations and Hiring Experience FY 2017-2018 to FY 2020-2021

<b>Fiscal Year</b>	<b>Retirements (Service and Disability)</b>	<b>Other Separations</b>	<b>Total Separations</b>	<b>Total Hires</b>	<b>Actual Staffing as of 6/30/21</b>	<b>Authorized Positions</b>
2017-2018	23	8	31	24	664	706
2018-2019	21	6	27	50	690	710
2019-2020	19	6	25	22	689	711
2020-2021	27	3	30	24	681	707*

\* 719 authorized sworn positions as of January 1, 2022.

### ***Maintaining Minimum Staffing Levels***

On a daily basis, absences and vacancies in field positions are backfilled with on-duty relief personnel and/or off-duty personnel who are called in on overtime to meet minimum staffing requirements. The total absence and vacancy rate of 23.6% in 2020-2021 required 459,903 hours of backfill.

Table 3: FY 2020-2021 Absence, Vacancy, and Backfill Hours

<b>Rank</b>	<b>Total Hours</b>	<b>Absence Hours</b>	<b>Vacancy Hours</b>	<b>Hours Requiring Backfill</b>
Battalion Chief	52,416	12,099	2,016	14,115
Fire Captain	465,920	106,086	20,272	126,358
Fire Engineer	669,760	146,249	29,344	175,593
Firefighter	757,120	118,637	25,200	143,837
<b>Total</b>	<b>1,945,216</b>	<b>383,071</b>	<b>76,832</b>	<b>459,903</b>

The Department's relief staffing model estimates the number of relief positions needed to backfill absences and vacancies. The baseline is the lowest number of absence and vacancy hours used by the personnel in each rank in any FY 2020-2021 pay period. Once the baseline is established based on the actual absence and vacancy data, it can then be determined, by rank, how many relief positions should be staffed. The FY 2020-2021 baseline hours (lowest absence and vacancy hours that occurred in any pay period) excluding Battalion Chief positions<sup>8</sup> are as follows:

- Fire Captain = 3,699 hours (in 2016-2017 = 2,960 hours)
- Fire Engineer = 4,615 hours (in 2016-2017 = 4,663 hours)
- Firefighter = 4,196 hours (in 2016-2017 = 2,818 hours)

To determine baseline hours by rank, five years of data by rank on absence and vacancy hours are used to smooth out potential anomalies in any given year. Utilizing this methodology, a

<sup>8</sup> Battalion Chief positions are excluded from baseline analysis due to the limited number of duty positions (15 for 3 shifts).

comparison of the vacancy/absence average baseline hours and coverage hours by relief positions is presented in the following table.

Table 4: Average Five-Year Baseline Data and Relief Personnel (Hours) FY 2016-2017 through FY 2020-2021

<b>Rank</b>	<b>Average Absence and Vacancy Hours Baseline</b>	<b>Coverage Hours by Relief Positions</b>	<b>Coverage Hours by Relief (shortfall)/surplus</b>	<b>Relief Positions Needed to Cover Average Baseline Absence and Vacancy</b>
Fire Captain	2,578	3,136	558	5.0 FTE available
Fire Engineer	4,278	3,920	(358)	3.2 FTE needed
Firefighter	4,011	4,928	917	8.2 FTE available
<b>Total</b>	<b>10,867</b>	<b>11,984</b>	<b>1,117</b>	<b>10.0 FTE available</b>

Based on Table 4, the number of relief positions for the Fire Captain and Firefighter position are adequate to meet the daily minimum staffing level. However, the Fire Engineer position falls short by roughly 3.2 FTE (358 hours). It is important to note that this methodology guides the Department in determining the appropriate number of budgeted relief positions to maintain, it does not serve to predict the number of hours that will need to be backfilled on an overtime basis. The FY 2014-2015 Adopted Operating Budget added 12 Fire Engineer positions and deleted 12 Firefighter positions to improve relief staffing levels. In FY 2015-2016, 26 sworn positions were added to restore Fire Engine 30 and Fire Engine 34, which were previously eliminated in the FY 2010-2011 Adopted Operating Budget. The 26 added positions included 11 Fire Captains, 14 Firefighter, and only 4 Fire Engineers. The Department will seek to realign relief staffing levels through the budget process in FY 2022-2023.

In FY 2020-2021, year-end overtime expenditures were \$20,992,324, \$3,957,554 of which was reimbursed by the State of California through the Governor's Office of Emergency Services for mutual aid resources provided by the Department. Total absence hours in 2020-2021 increased by approximately 17.0% to 383,071, largely attributable to administrative leave and disability leave attributable to COVID-19. In FY 2020-2021, the combined absence and vacancy rates were 23.6%, requiring 459,903 hours of backfill<sup>9</sup> covered by a combination of available relief staffing and overtime.

### ***Santa Clara County Fire Company Staffing Models (FY 2020-2021)***

The Department cooperates with other Santa Clara County fire agencies to provide resources when and where they are most needed through local mutual aid and automatic aid agreements. While apparatus types are standardized, each agency is unique relative to how many resources they deploy and how they are staffed. Tables 5, 6, and 7 below provide individual Santa Clara County fire agency resource deployment and staffing relative to population, square miles protected, and fire company staffing levels. Areas protected by CalFire including state

<sup>9</sup> In 2019-2020, combined impact of absences and vacancy hours required 405,287 hours of backfill.

responsibility areas, City of Morgan Hill, and South Santa Clara County Fire Protection District are excluded.

Table 5: Santa Clara County Fire Agencies Staffing to Population (FY 2020-2021)<sup>10</sup>

<b>Fire Agency</b>	<b>Population Served</b>	<b>Sworn Personnel</b>	<b>Staffing to Population</b>
<b>San José</b>	<b>1,029,782</b>	<b>707</b>	<b>.69 per 1000</b>
Santa Clara County	225,000	251	1.11 per 1000
Sunnyvale DPS*	153,827	81	.52 per 1000
City of Santa Clara	130,746	137	.95 per 1000
Mountain View	82,814	70	.90 per 1000
Milpitas	75,663	68	.90 per 1000
Palo Alto	67,657	87	1.3 per 1000
Gilroy	56,599	42	.74 per 1000

\*Sunnyvale Department of Public Safety provides both law enforcement and fire protection.

Table 6: Santa Clara County Fire Agencies Square Miles Per Fire Station (FY 2020-2021)

<b>Fire Agency</b>	<b>Square Miles</b>	<b>Fire Stations</b>	<b>Square Miles per Fire Station</b>
<b>San José</b>	<b>235*</b>	<b>33</b>	<b>7.1</b>
Santa Clara County	132	15	8.8
Sunnyvale DPS	24	6	4
City of Santa Clara	20	10	2.0
Mountain View	12	5	2.4
Milpitas	14	4	3.5
Palo Alto	52	7	7.4
Gilroy	16	4	4

\*Includes 26.81 square miles of Santa Clara County Zone 1 Contract coverage area.

<sup>10</sup> <https://www.dof.ca.gov/forecasting/demographics/estimates/e-1/>

Table 7: Santa Clara County Fire Agencies Fire Company Staffing (FY 2020-2021)

Fire Agency	Engine Staffing	Truck Staffing	Daily Staffing
<b>San José</b>	<b>4</b>	<b>4</b>	<b>186</b>
Santa Clara County	3	4	66
Sunnyvale DPS	2	2	26
City of Santa Clara	3	4	36
Mountain View	3	3	21
Milpitas	3	4	17
Palo Alto	3	3	24
Gilroy	3	3	9

On February 18, 2016, the PSFSS Committee requested that the Department evaluate conducting a pilot study for three-person staffing on Fire Engine Companies. The Three-Person Staffing Pilot<sup>11</sup> was not recommended by the Department. The Fire Department Organizational Review evaluated company staffing and determined that changes were not advisable. The Review's analysis was based on several factors including existing deployment levels, response times, risk assessment, applicable Occupational Safety and Health Administration (OSHA) law, and National Institute of Standards and Technology (NIST) information.

### *National Staffing Levels*

The City of San José is the tenth largest in the U.S. with a population of 1,029,782. Amongst cities with populations of 800,000 or greater, all but one provides 4 or more personnel per Engine Company. In that same cities group, staffing to population ratios range from 0.69 to 1.84 per 1,000 residents in FY 2020-2021. San José and San Diego ranked lowest at approximately 0.69 per 1,000 residents. Chicago and New York City ranked highest at 1.83 and 1.84 respectively. Table 8 below details the 17 most populous U.S. cities.

<sup>11</sup> [March 8, 2016 Fire Department Organizational Review Supplemental Memorandum to PSFSS - http://sanjose.granicus.com/MetaViewer.php?meta\\_id=562289](http://sanjose.granicus.com/MetaViewer.php?meta_id=562289)



Table 8: Staffing to Population in Largest U.S. Cities (Population >800,000)<sup>12</sup>

City Fire Department (Engine Staffing)	Estimated Population	Sworn Personnel	Staffing to Population
New York City (5)	8,253,213	15,225	1.84 per 1000
Los Angeles (4)	3,923,341	3,518	.90 per 1000
Chicago (5)	2,677,643	4,900	1.83 per 1000
Houston (4)	2,316,120	3,667	1.58 per 1000
Phoenix (3)	1,708,127	1,669	.98 per 1000
Philadelphia (4)	1,578,487	2,629	1.66 per 1000
San Antonio (4)	1,567,118	1,766	1.13 per 1000
San Diego (4)	1,411,034	984	.69 per 1000
Dallas (4)	1,343,266	2,002	1.49 per 1000
<b>San José (4)</b>	<b>1,029,782</b>	<b>707</b>	<b>.69 per 1000</b>
Austin (4)	995,484	1,138	1.14 per 1000
Fort Worth (4)	927,720	950	1.02 per 1000
Jacksonville (4)	920,570	1,600	1.74 per 1000
Columbus (4)	903,852	1,555	1.72 per 1000
Charlotte (5/4)	900,350	1,072	1.19 per 1000
Indianapolis (4)	877,903	1,231	1.40 per 1000
San Francisco (4)	875,010	1,384	1.58 per 1000

### *Span of Control*

*National Fire Protection Association (NFPA) 1561(2020 Edition): Standard on Emergency Services Incident Management System and Command Safety* states that “an effective span of control shall be determined by the ability of each supervisory position to monitor the activities of assigned subordinates and to communicate effectively with them.” NPFA fire officer instructional texts define span of control as “the maximum number of personnel or activities that can be effectively controlled by one individual (usually three to seven).” The Department maintains 3 to 1 span of control on Engine and Truck companies with a Fire Captain (company officer) assigned to each deployed resource. Five Battalion Chiefs supervise 43 company officers with a span of control of 8-10 as indicated in table 9 below.

Table 9: Current Battalion Chief/Company Officer Span of Control

	Battalion 1	Battalion 2	Battalion 5	Battalion 10	Battalion 13
Company Officers	8	9	8	8	10

In 2018, San José voters passed Measure T: Disaster Preparedness, Public Safety, and Infrastructure Bond which will enable construction of new Fire Stations 32, 36, and 37. The addition of Engine 32, Engine 36, and Engine 37 will stretch Battalion Chief span of control

<sup>12</sup> <https://www.census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates/2020-evaluation-estimates/2010s-cities-and-towns-total.html>

further beyond the 3 to 7 range to approximately 9.2 to 1. The Department is evaluating the addition of a sixth battalion to improve Battalion Chief/company officer span of control to 8 to 1.

### ***Arson Unit Staffing***

The Arson Unit is the sole law enforcement division within the Department and is staffed with 3 Arson Investigators and 1 Fire Captain (supervisor). Arson Investigators are assigned to 24-hour shifts (A, B, C) to maintain around-the-clock response availability and the Arson Fire Captain is assigned to a 40-hour work week. Arson Investigator absences and vacancies are left unfilled which results in periods of unavailability. To ensure 24-hour availability for investigation and prosecution of arson crimes, the Department is evaluating options for strengthening Arson Unit staffing.

### ***EMT Certification and Paramedic Licensure***

To deliver advanced life support services on all response resources, the Department maintains 90 EMTs and 170 paramedics in the Firefighter rank. At the end of FY 2020-2021, there were 16 Firefighter/paramedic vacancies. Firefighter Recruit EMT applicants far exceed paramedic applicants and the Department is hearing of Firefighter/paramedic recruitment challenges across the state from other fire agencies. Shelter in place orders across the state slowed paramedic development as both classroom, clinical instruction, and internships were temporarily halted by many paramedic schools. Presently, the Department is evaluating recruitment and internal staffing options to increase the number of paramedics.

## **CONCLUSION**

The Department deploys resources to provide timely and effective response to all community risks including fire, rescue, hazardous materials, and emergency medical services (EMS). As the City's emergency response demands and physical environment evolves, the Department must evaluate and adjust resource and staffing levels to maintain its effectiveness. In the short term, a combination of high retirement eligibility rates and the addition of new positions required to staff new Fire Engines 32, 36, and 37 will require accelerated hiring. Additionally, the Department must address Battalion Chief/company officer span of control ratios, achieve uninterrupted Arson Investigator response capability, and address paramedic recruitment challenges.

## **EVALUATION AND FOLLOW-UP**

The Department evaluates recruitment and hiring needs on an ongoing basis. Information provided in this report will be revised and reported to the PSFSS Committee annually.

October 6, 2021

**Subject: Fire Department Sworn Staffing Levels Annual Report**

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**COORDINATION**

This memorandum was coordinated with the City Attorney's Office and the City Manager's Budget Office.

/s/

ROBERT SAPIEN, JR.

Fire Chief, Fire Department

For questions, please contact Robert Sapien, Jr., Fire Chief at (408) 794-6952.