

Memorandum



Memorandum

TO: PUBLIC SAFETY, FINANCE AND STRATEGIC SUPPORT COMMITTEE
FROM: Robert Sapien, Jr.
SUBJECT: FIRE DEPARTMENT SWORN STAFFING LEVELS ANNUAL REPORT
DATE: October 5, 2022

Approved

Date

10/11/2022

RECOMMENDATION

Accept the annual report on Fire Department sworn staffing levels for 2021-2022, 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 976,482¹ as of May 2022. In Fiscal Year 2021-2022, the Department responded to 103,145 incidents, 8.82% more than the prior year.

Emergency response resources are deployed out of 34 fire stations including 5 Battalion Chiefs, 33 Engine Companies, 9 Truck Companies, 1 Urban Search and Rescue Company (US&R), 3 Rescue-Medic Units (formerly "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 230² specifies the following staffing levels:

¹ <https://dof.ca.gov/forecasting/demographics/estimates-e1/>

² <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 230³ 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 190 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 periodic 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 the equivalent number of personnel to provide standard coverage locally, restoring the daily local staffing minimum to 190 personnel.

Department Staffing

The Department reached its highest staffing levels in Fiscal Year 2007-2008 with 758 authorized sworn positions. In subsequent years, the Department proposed substantial reductions to meet budget reduction targets as the impacts of the Great Recession challenged City resources. The Fiscal Year 2010-2011 Adopted Operating Budget⁴ 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. Fiscal Year 2011-2012 Adopted Operating Budget⁵ action resulted in the elimination of 28 sworn positions

³ <https://www.sanjoseca.gov/home/showpublisheddocument/40520/637068396235430000>

⁴ <https://www.sanjoseca.gov/home/showpublisheddocument/50625/637152074933900000>

⁵ <https://www.sanjoseca.gov/home/showpublisheddocument/50645/637152094524730000>

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, 2016⁶. 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 the 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).

⁶ <https://www.sanjoseca.gov/home/showpublisheddocument/18961/636683753806870000>

Current Authorized Sworn Positions

The 2022-2023 Proposed Department Operating Budget⁷ authorizes 720 sworn positions. Authorized full-time sworn positions by classification are shown in Table 1 below.

Table 1: Authorized Full-Time Sworn Positions

Sworn Position (Rank)	Authorized Positions
Fire Chief	1
Assistant Fire Chief	1
Deputy Fire Chief	4
Battalion Chief	21
Fire Captain	175
Arson Investigator	4
Fire Prevention Inspector	13
Fire Engineer	234
Firefighter	267
Total	720

Six of the authorized sworn positions are senior management classifications including Fire Chief, Assistant Fire Chief, and Deputy Fire Chiefs. 30 sworn positions are assigned to 40-hour administrative staff roles. One Arson Investigator is on-duty daily on a 24-hour schedule across three shifts. A fourth Arson Investigator position was authorized in the 2022-2023 Proposed Operating Budget to address absences or temporary vacancies for the Arson Unit. The remaining 680 authorized positions are assigned to 24-hour shift field assignments, approximately 226 per shift (A, B, C) to cover the daily 190 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, 2022, actual staffing (filled positions) was 677 personnel. The next Fire Fighter Recruit Academy of 9 recruits began on September 6, 2022.

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 the time of hire. The Department generally conducts one or two 25-person Firefighter Recruit Academies per year. From Fiscal Year 2018-2019 to Fiscal Year 2021-2022, the Department averaged 33

⁷ <https://www.sanjoseca.gov/home/showpublisheddocument/85356/637872546793930000>

sworn employee separations annually, approximately 4.5% per year. The average sworn vacancy rate over that period was 4.96%. Actual Department separations and hiring experience for Fiscal Years 2018-2019 to 2021-2022 are provided in Table 2 below.

Table 2: Separations and Hiring Experience Fiscal Year 2018-2019 to Fiscal Year 2021-2022

Fiscal Year	Retirements (Service and Disability)	Other Separations	Total Separations	Total Hires	Actual Staffing as of 6/30/22	Authorized Positions
2018-2019	21	6	27	50	690	710
2019-2020	19	6	25	22	689	711
2020-2021	27	3	30	24	681	707
2021-2022	36	15	51	47	677	719

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 28.2% in 2021-2022 required 559,553 hours of backfill.

Table 3: Fiscal Year 2021-2022 Absence, Vacancy, and Backfill Hours

Rank	Total Hours	Absence Hours	Vacancy Hours	Hours Requiring Backfill
Battalion Chief	52,416	11,089	4,032	15,121
Fire Captain	474,656	121,651	27,440	149,091
Fire Engineer	681,408	170,077	61,488	231,565
Firefighter	774,592	117,185	46,592	163,777
Total	1,983,072	420,001	139,552	559,553

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 Fiscal Year 2021-2022 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 Fiscal Year 2021-2022 baseline hours (lowest absence and vacancy hours that occurred in any pay period) excluding Battalion Chief positions⁸ are as follows:

- Fire Captain = 4,180 hours (in 2017-2018 = 495 hours)
- Fire Engineer = 7,217 hours (in 2017-2018 = 3,411 hours)
- Firefighter = 4,557 hours (in 2017-2018 = 4,375 hours)

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

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 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)
Fiscal Year 2017-2018 through Fiscal Year 2021-2022

Rank	Average Absence and Vacancy Hours Baseline	Coverage Hours by Relief Positions	Coverage Hours by Relief (shortfall)/surplus	Relief Positions Needed to Cover Average Baseline Absence and Vacancy
Fire Captain	2,854	3,136	282	2.5 FTE available
Fire Engineer	4,734	4,032	(702)	6.3 FTE needed
Firefighter	3,885	4,928	1,043	9.3 FTE available
Total	11,473	11,984	623	5.6 FTE available

As reflected in Table 4, the number of relief positions for the Fire Captain and Firefighter positions is adequate to meet the daily minimum staffing level. However, the Fire Engineer position falls short by roughly 6.3 full-time equivalents (FTEs) (702 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 Fiscal Year 2014-2015 Adopted Operating Budget added 12 Fire Engineer positions and deleted 12 Firefighter positions to improve relief staffing levels. In Fiscal Year 2015-2016, 26 sworn positions were added to restore Fire Engine 30 and Fire Engine 34, which were previously eliminated in the Fiscal Year 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 Fiscal Year 2022-2023.

In Fiscal Year 2021-2022, year-end overtime expenditures were \$31,611,627, \$7,336,336 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 2021-2022 increased by approximately 9.6% to 420,001, largely attributable to vacation and disability leave. In Fiscal Year 2021-2022, the combined absence and vacancy rates were 28.2%, requiring 559,553 hours of backfill⁹ covered by a combination of available relief staffing and overtime.

Santa Clara County Fire Company Staffing Models (Fiscal Year 2021-2022)

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 5-8 below provide individual Santa Clara County

⁹ In 2020-2021, combined impact of absences and vacancy hours required 459,903 hours of backfill.

fire agency resource deployment and staffing relative to population, square miles protected, fire stations to population ratios, and fire company staffing levels. Areas protected by CalFire including state responsibility areas, the City of Morgan Hill, and South Santa Clara County Fire Protection District are excluded.

Table 5: Santa Clara County Fire Agencies Staffing to Population (Fiscal Year 2021-2022)¹⁰

Fire Agency	Population Served	Sworn Personnel	Staffing to Population
San José*	976,482	720	0.73 per 1,000
Santa Clara County	225,000	251	1.11 per 1,000
Sunnyvale DPS**	156,234	81	.52 per 1,000
Santa Clara	130,127	137	1.05 per 1,000
Mountain View	83,864	70	.83 per 1000
Milpitas	80,839	72	.87 per 1000
Palo Alto	67,473	91	1.3 per 1000
Gilroy	59,269	42	.70 per 1000

*Excludes population within 26.81 square miles of Santa Clara County Zone 1 Contract coverage area.

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

Table 6: Santa Clara County Fire Agencies Square Miles Per Fire Station
(Fiscal Year 2021-2022)

Fire Agency	Square Miles	Fire Stations	Square Miles per Fire Station
San José	235*	34	6.9
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.

¹⁰ <https://dof.ca.gov/forecasting/demographics/estimates-e1/>

**Table 7: Santa Clara County Fire Agencies Fire Stations to Population Ratio
(Fiscal Year 2021-2022)**

Fire Agency	Population	Fire Stations	Fire Stations to Population
San José	976,482*	34	28,720
Santa Clara County	225,000	15	15,000
Sunnyvale DPS*	156,234	6	26,039
Santa Clara	130,127	10	13,013
Mountain View	83,864	5	16,773
Milpitas	80,839	4	20,210
Palo Alto	67,473	7	9,639
Gilroy	59,269	4	14,817

*Excludes population within 26.81 square miles of Santa Clara County Zone 1 Contract coverage area.

**Table 8: Santa Clara County Fire Agencies Fire Company Staffing
(Fiscal Year 2021-2022)**

Fire Agency	Engine Staffing	Truck Staffing	Daily Staffing
San José	4	4	186
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	21
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 Pilot¹¹ 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

According to a National Fire Protection Association (NFPA) U.S. Fire Department Profile 2019 (published December 2021), from 1986 to 2019 the rates of career firefighters per 1,000 people have remained in the range of 1.54 to 1.81 in mostly-career or all-career departments¹².

¹¹ http://sanjose.granicus.com/MetaViewer.php?meta_id=562289

¹² <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osfdprofile.pdf>

Amongst cities with populations of 800,000 or greater, all but one provides 4 or more personnel per Engine Company. In that same group, staffing to population ratios range from 0.69 to 1.88 per 1,000 residents in Fiscal Year 2021-2022. San José and San Diego ranked lowest at slightly over 0.70 per 1,000 residents. Philadelphia and New York City ranked highest at 1.88 and 1.80 respectively. NFPA 1710 5.2.3 requires that engine companies be staffed with a minimum of four on-duty personnel¹³. 16 of the 17 most populous U.S. cities meet this requirement. Table 8 below details the 17 most populous U.S. cities.

Table 9: Staffing to Population in Largest U.S. Cities (Population >800,000)¹⁴

Rank	City/Town (Engine Company Staffing)	Estimated Population	Sworn/Responders (Budgeted)	Staffing to Population
1	New York, New York (5/4)	8,467,513	15,252	1.80
2	Los Angeles, California (4)	3,849,297	3,510	0.91
3	Chicago, Illinois (5)	2,696,555	4,766	1.77
4	Houston, Texas (4)	2,288,250	3,648	1.59
5	Phoenix, Arizona (3)	1,624,569	1,671	1.03
6	Philadelphia, Pennsylvania (4)	1,576,251	2,960	1.88
7	San Antonio, Texas (4)	1,451,853	1,781	1.23
8	San Diego, California (4)	1,381,611	996	0.72
9	Dallas, Texas (4)	1,288,457	2,305	1.79
10	San Jose, California (4)	976,482	720	0.73
11	Austin, Texas (4)	964,177	1,266	1.31
12	Jacksonville, Florida (4)	954,614	1,690	1.77
13	Fort Worth, Texas (4)	935,508	963	1.03
14	Columbus, Ohio (4)	906,528	1,582	1.75
15	Indianapolis, Indiana (4)	882,039	1,249	1.42
16	Charlotte, North Carolina (5/4)	879,709	1,104	1.25
17	San Francisco, California (4)	815,201	1,395	1.71

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 the 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

¹³ https://www.nfpa.org/~media/Files/Code%20or%20topic%20fact%20sheets/NFPA_1710_Fact_Sheet.pdf

¹⁴ [City and Town Population Totals: 2020-2021 \(census.gov\)](https://www.census.gov/popest/data/totals/2020-2021/cityandtownpopulations.html)

maintains a 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 10: 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 the construction of new Fire Stations 32, 36, and 37. The addition of Engine 32, Engine 36, and Engine 37 will stretch the Battalion Chief span of control 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 the 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 4 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. To ensure 24-hour availability for investigation and prosecution of arson crimes, the 2022-2023 Proposed Operating Budget added 1 additional Arson Investigator to address absences and vacancies.

EMT Certification and Paramedic Licensure

To deliver advanced life support services on all response resources, the Department maintains 94 EMTs and 173 paramedics in the Firefighter rank. At the end of Fiscal Year 2021-2022, there were 56 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 available paramedics to reduce mandatory overtime assignments.

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, the Department's top priority is to address paramedic recruitment challenges and to continue

recruitment, hiring, and training efforts to keep pace with retirement attrition and the addition of Fire Stations 32 and 36.

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.

COORDINATION

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

A handwritten signature in black ink, appearing to read "Robert Sapien, Jr.", with a stylized flourish at the end.

ROBERT SAPIEN, JR.
Fire Chief, Fire Department

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