



Memorandum

TO: PUBLIC SAFETY, FINANCE AND
STRATEGIC SUPPORT COMMITTEE

SUBJECT: FIRE DEPARTMENT CALL
VOLUME STATUS REPORT

FROM: Robert Sapien, Jr.

DATE: March 1, 2023

Approved

Date

3/8/2023

RECOMMENDATION

Accept the status report on Fire Department call volumes, including opportunities to triage calls for service so that departmental resources can be maximized to lifesaving and fire mitigation calls.

BACKGROUND

The San José Fire Department (Department) is a high-volume, all-hazards fire department providing fire suppression and rescue services, Advanced Life Support (ALS), and Basic Life Support (BLS) services, as well as specialized operations resources including Urban Search and Rescue (US&R), Aircraft Rescue Fire Fighting (ARFF), and a Hazardous Incident Team (HIT). SJFD deploys resources from 34 fire stations, protecting 208 square miles including 181 square miles within city limits and approximately 27 square miles of unincorporated areas of Santa Clara County by contract.

Department emergency incident call volume has increased by approximately 40.6% in the past ten years from 73,327 calls in Fiscal Year (FY) 2011-2012 to 103,145 calls in FY 2021-2022. Rising call volume has challenged the Department's ability to meet response time performance standards and to maintain balanced emergency response coverage throughout the City. To begin addressing these challenges, the Department has pursued several strategies as reported to the Public Safety, Finance, and Strategic Support Committee in the Fire Department Emergency Response Times Performance Semi-Annual Report.¹

On June 7, 2016, the City Council received the City of San José - Fire Department Organization Review² which included Standards of Response Coverage (SOC) analysis. The following was included in the report findings:

¹ <https://sanjose.legistar.com/View.ashx?M=F&ID=7809474&GUID=3BC62690-745A-4B72-9F72-39A60839945D>

² https://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2139&meta_id=576578

We find the City's deployment system does not provide City Council-adopted and best-practice desired response times, especially outside of the urban core as fire station spacing increases in the suburban areas. Delivering response times to all neighborhoods at the adopted City goal will require additional resources.

Consistent with the above conclusion, the City Council has taken budget actions to restore some response resources lost following the 2008 recession and advanced The Disaster Preparedness, Public Safety, and Infrastructure Bond measure to the November 6, 2018 ballot. Voters passed the \$650,000,000 general obligation bond measure (Measure T) which included "...construction of Fire Station 37 and the upgrade and/or rebuild of additional fire stations to improve emergency response times based on the Fire Chief's assessment of projects that are critically needed to improve emergency response..." At the June 18, 2019 City Council meeting, the Department's Measure T - New Fire Station Placement Prioritization³ recommendations were accepted by the City Council, initiating the construction of three new fire stations and the replacement of two existing fire stations.

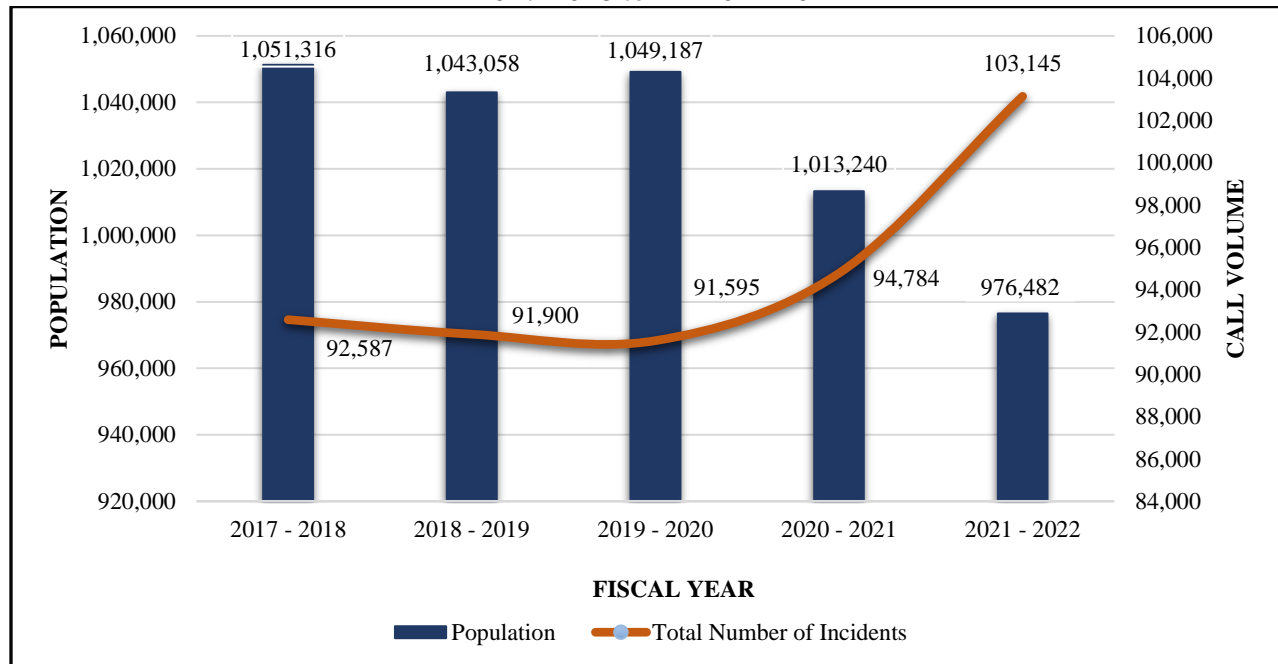
The additional fire stations provided by Measure T and continued advancement of response time performance improvement strategies will, at least temporarily, result in improved response time performance and resource availability. However, continued increases in emergency call volume will continue to challenge Department resources.

ANALYSIS

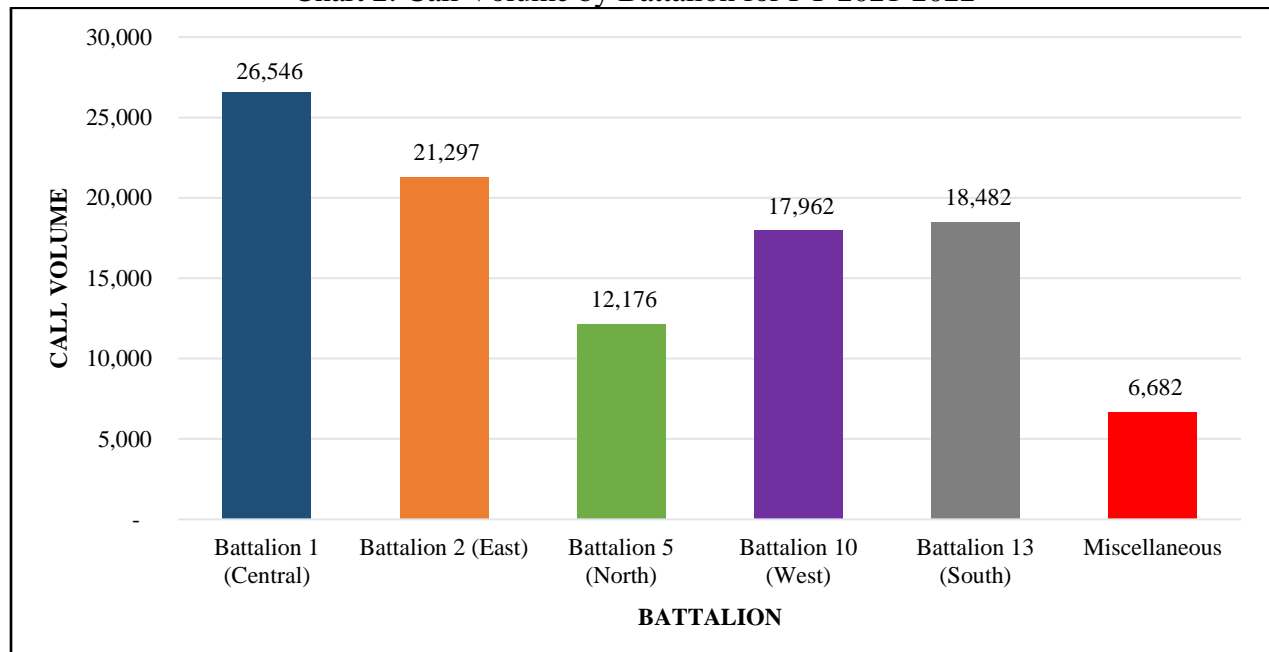
FY 2017-2018 call volume was 92,587 compared to 103,145 in FY 2021-2022, an increase of 11.4% in demand for emergency response. City population decreased by 7.1% over that same 5-year period from 1,051,316 in FY 2017-2018 to 976,482 in FY 2021-2022. This data is reflected in Chart 1 below.

³ <https://sanjose.legistar.com/View.ashx?M=F&ID=7296426&GUID=8097B35E-F3AA-441B-A951-9B6135862F50>

Chart 1: Call Volume and Population
FY 2017-2018 to FY 2021-2022



Generally, call volume is highest in the core of the City and lowest at the perimeter. As indicated in Chart 2 below, Battalion 1, which is centrally located, had 26,546 incidents in FY 2021-2022. At peak periods, resources from other battalions are drawn into the core of the City as Battalion 1 resources are drawn down.

Chart 2: Call Volume by Battalion for FY 2021-2022

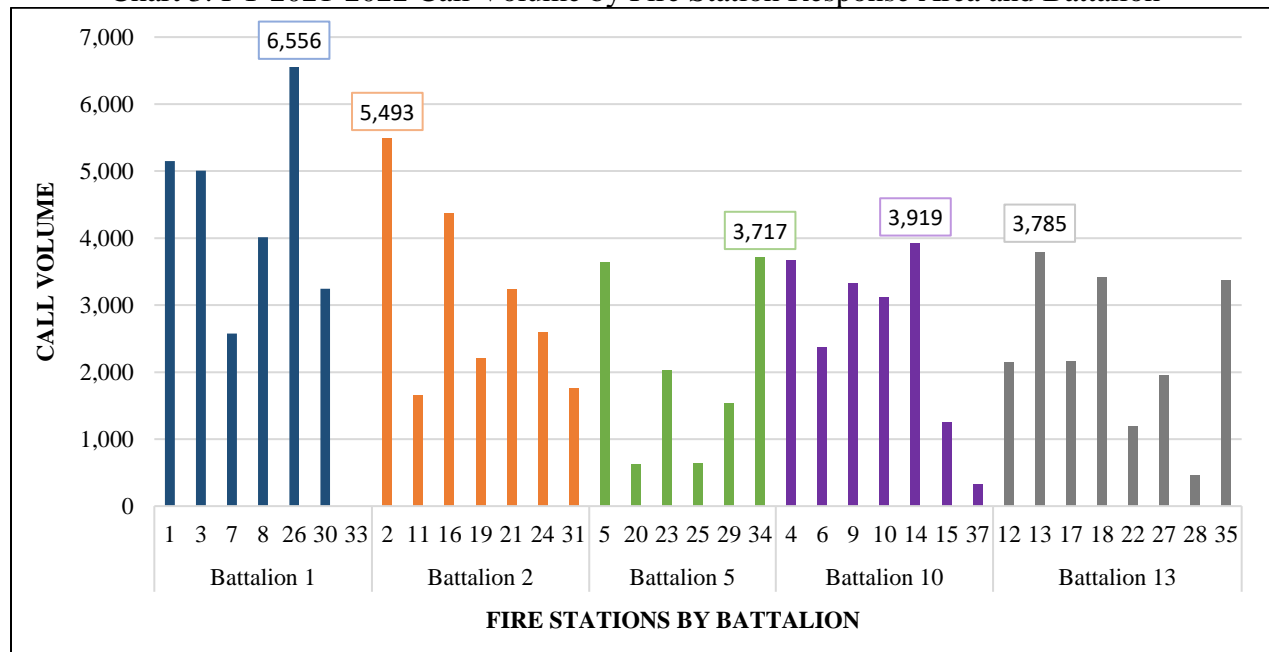
Note: Miscellaneous category captures calls identified within the Computer Aided Dispatch (CAD) system for Mutual and Auto Aid calls received by the City of San José not directly associated with a particular Battalion.

Fire stations are located throughout San José to provide emergency response coverage, however, population densities and service demands can greatly vary for each station's response area, as shown in Chart 3 below. It is important to note that call volume numbers reflect single emergency incidents and not the total number of resources deployed. A single incident may require a single resource response such as a Rescue Medic or Engine Company or can have several resource responses, including multiple alarm incidents. As such, the incident response numbers provided in this report only partially represent the workloads for each fire station. Battalion 1 fire stations and Fire Station 26, in particular, experience the highest call volume annually. Utilizing the proceeds from Measure T, the Department fully operationalized Fire Station 37 to bolster fire protection coverage and improve response time performance within West San José. Additionally, Measure T funding will enable the future construction and positioning of Fire Stations 32 and 36 which is intended to strengthen central response capabilities and improve call volume distribution.

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Chart 3: FY 2021-2022 Call Volume by Fire Station Response Area and Battalion

Note: Fire Station 33 is currently out of service – however, the response area remains in the Computer Aided Dispatch (CAD) system. Closest appropriate resources are dispatched to incidents in Station 33's response area. Fire Station 37 was placed into service on May 10, 2022, thus call volume data reflected represents a partial year of responses.

High call volume centralized in the core of San José negatively impacts the Department's response time performance. As shown in Figure 1 below, the heatmap reflects call volume intensity ranging from lowest (blue) to highest (red). Current station response area call volumes result in reduced resource availability and compromised response time performance. Figure 2 reflects late response (travel times greater than 4 minutes) intensity ranging from the lowest (green) to the highest number of late responses (orange) depicting how resource drawdowns impact response time performance.

Figure 1: Call Volume Heat Map 2022

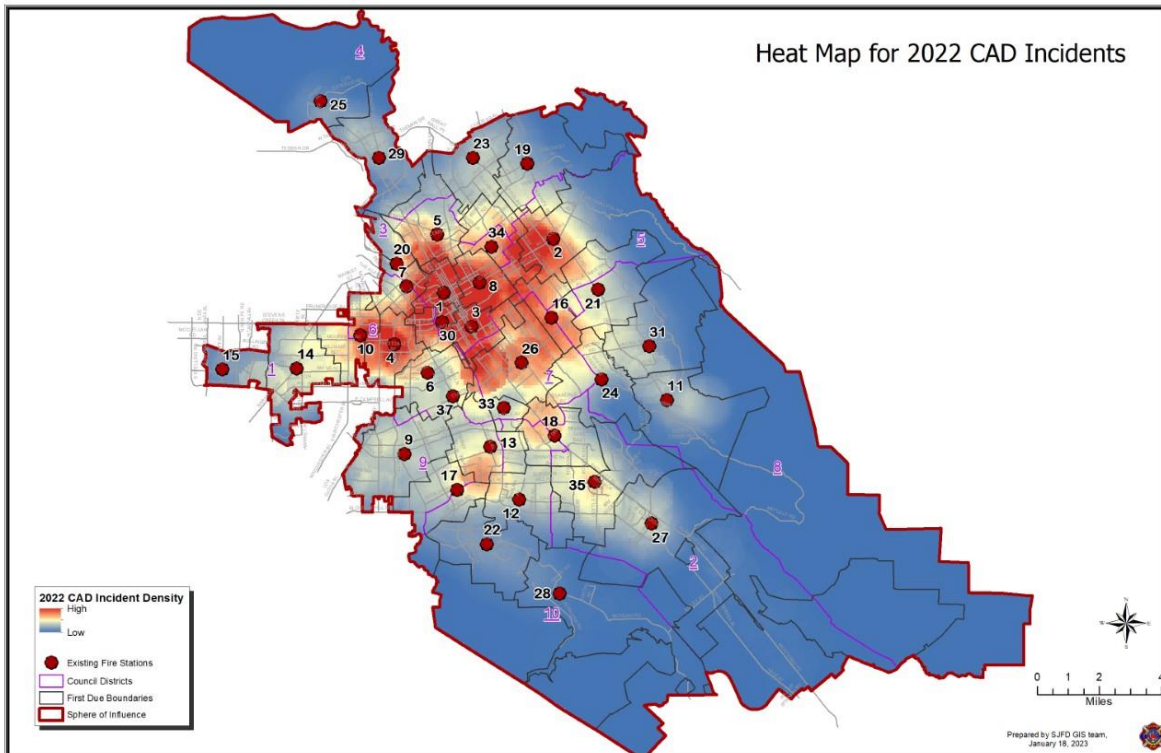
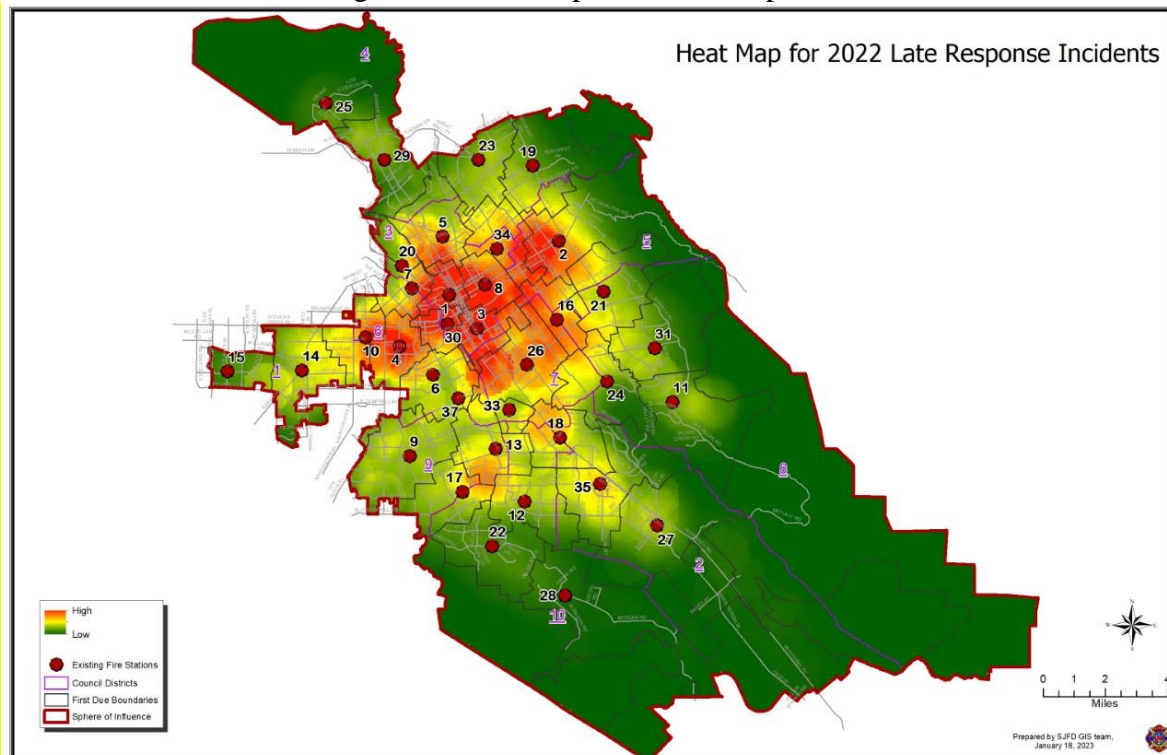


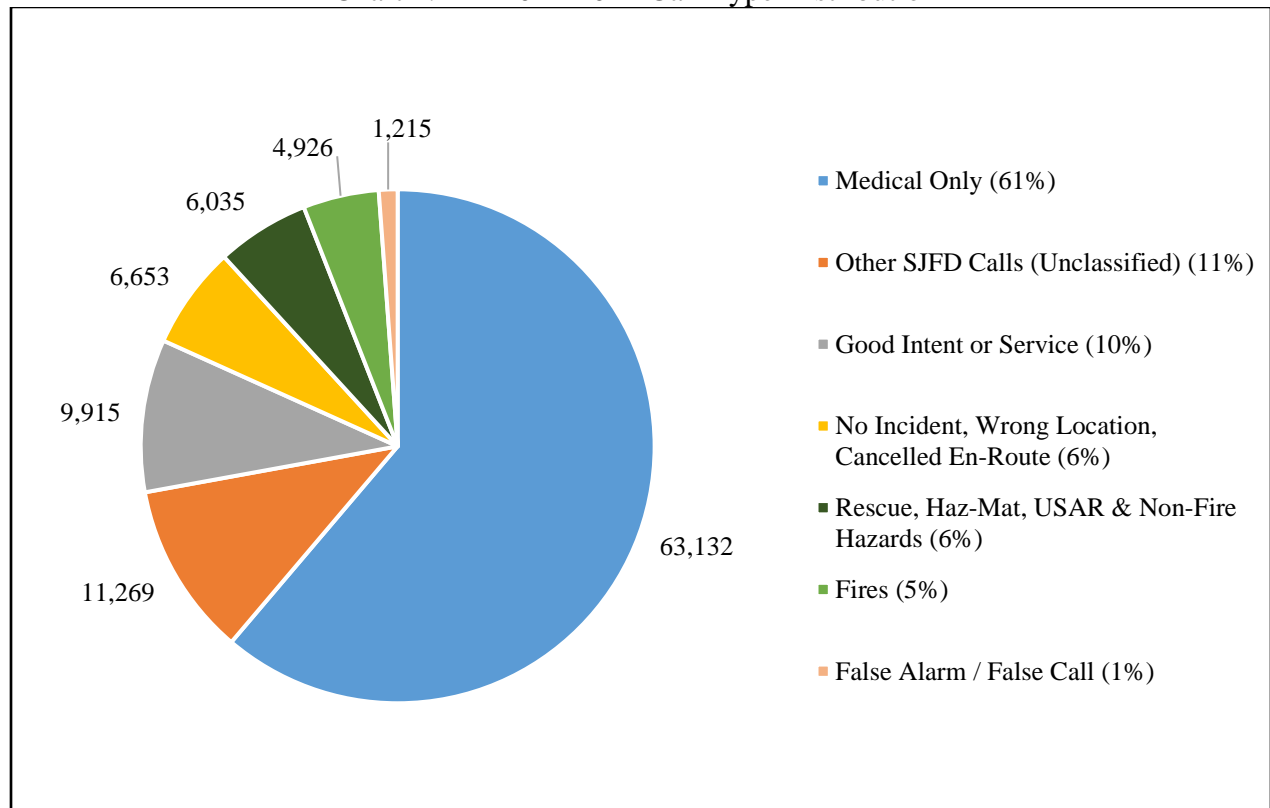
Figure 2: Late Response Heat Map 2022



Call Type Distribution

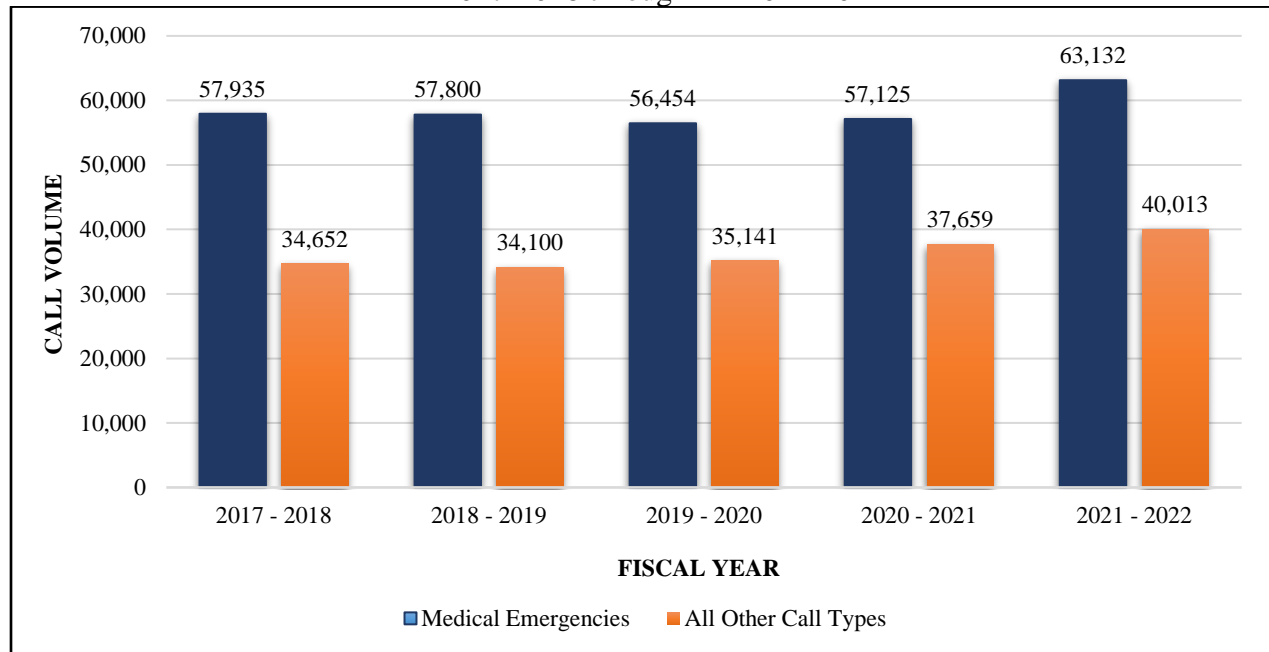
Chart 4 provides the call type distribution of the 103,145 incidents in FY 2021-2022. Each call type was within 1% to 2% from the prior year's distribution, with an increase in the number of fire incidents. Since December 2020, the Department closely monitored emergency medical call volume due to the spike in COVID-19 cases. The Department experienced no significant marked increase in medical call volume percentage, and there was no clearly discernable change in call type distribution.

Chart 4: FY 2021-2022 Call Type Distribution

*Population Impacts*

Prior to 2020, there has been a clear corollary between rising population and rising call volume; however, since 2020 call volume has risen significantly despite a drop in population.

Chart 5: EMS Call Volume and All Other Call Types
FY 2017-2018 through FY 2021-2022

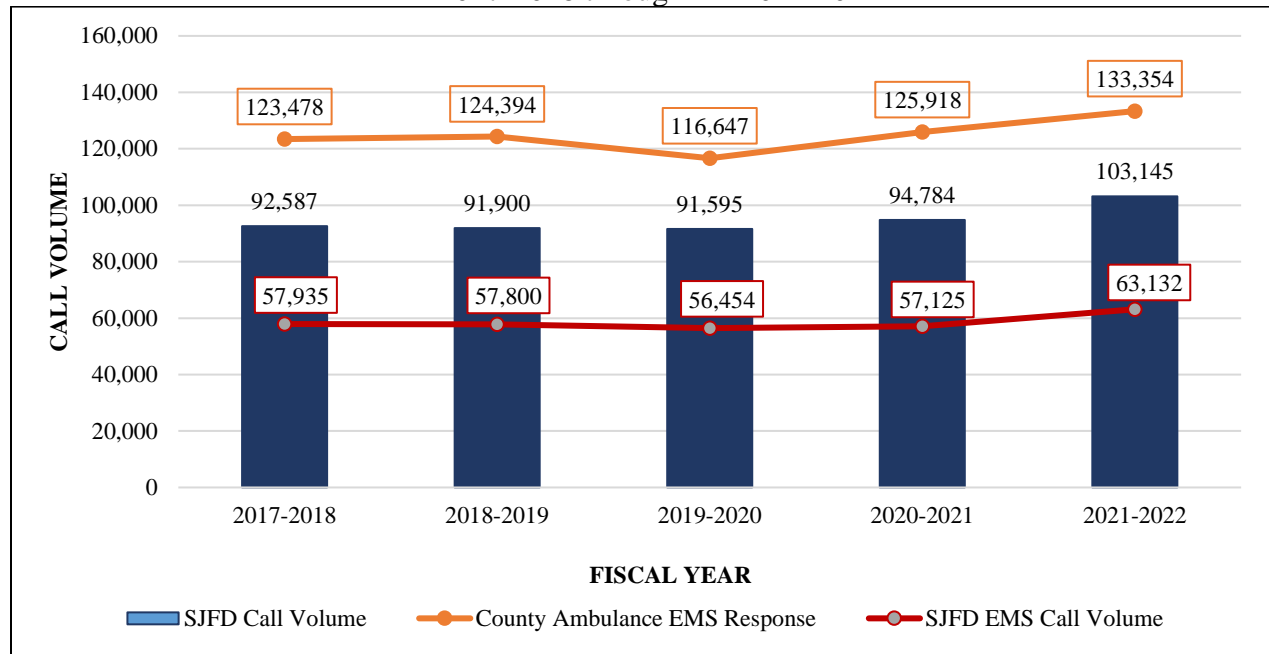


In Fiscal Year 2021-2022 Emergency medical services (EMS) call volume increased disproportionately against other call types (fire, rescue, hazardous materials emergencies, non-fire hazards, service requests and good intent, false alarm/false call, wrong location, canceled en route, and other) compared to the previous years. Chart 5 data reflects relatively static EMS call volume from Fiscal Year 2017-2018 to Fiscal Year 2020-2021; however, an increase of 10.5% in Fiscal Year 2021-2022 from the previous year. The Department is seeking to identify drivers of the increased EMS activity in this period. Total responses for all other call types increased by over 15.5%, from 34,652 calls to 40,013 calls from Fiscal Year 2017-2018 to Fiscal Year 2020-2022.

Call volumes are increasing countywide, however, the activity observed in the City's EMS call volume has slightly outpaced Santa Clara County's Emergency Medical Services (County EMS) Ambulance responses on a countywide scale. The Santa Clara County Emergency Medical Services: County Service Area Response Time Performance Report for 2021⁴ (page 135) provides 9-1-1 ambulance call volume history from calendar year 2016 to 2021. As depicted below in Chart 6, County EMS 9-1-1 Ambulance responses increased by 8.0% from 123,478 calls in 2018 to 133,354 calls in 2022. Within that same time period, total responses for the City had increased by approximately 11.4%, from 92,587 calls to 103,145 calls, and City EMS call volume increased by approximately 9.0%, from 57,935 to 63,132 calls.

⁴https://emsagency.sccgov.org/sites/g/files/exjcpb266/files/general/EMCC_Agenda_November_Packet.pdf

Chart 6: City Call Volume and Countywide Ambulance Call Volume
FY 2017-2018 through FY 2021-2022



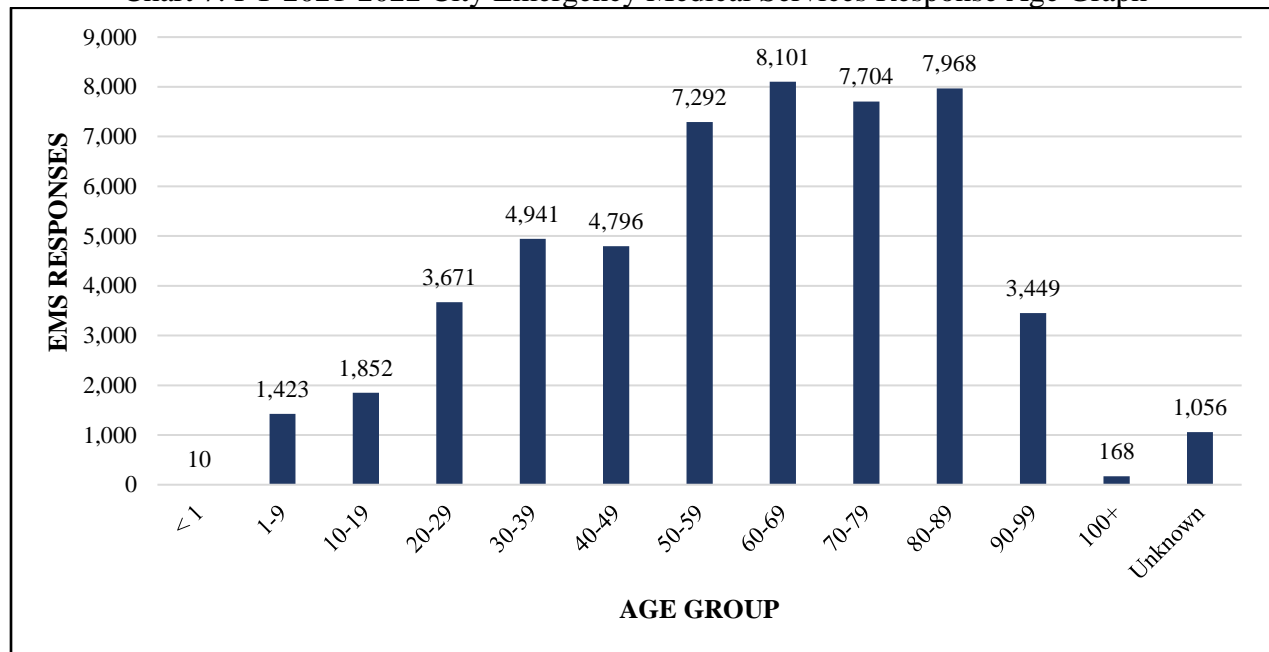
Aging Population

According to the California State Plan on Aging 2017-2021⁵, the number of Santa Clara County residents above the age of 65 years will increase by 99.3%, from 277,700 in 2010 to 553,409 in 2030, and residents aged 85 years and older are estimated to increase by 84.6%, from 28,039 in 2010 to 51,772 in 2030. The California State Plan on Aging makes the following statement regarding health care demands of persons aged 85 and over:

The current size of the population age 85 and over, and the projected increase in this age group, is notable. Those 85 and older have a significantly higher rate of severe chronic health conditions and functional limitations that result in the need for more health and supportive services. The rapid growth of this age group has many implications for individuals, families, communities, and government.

In FY 2021-2022, the available patient age data from the Department's Medical Priority Dispatch System (MPDS) indicated that 52% of patients were age 60 years and over and 66% of patients were age 50 years and over. Chart 7 below provides emergency medical response distribution across patient age groups for FY 2021-2022.

⁵ <https://aging.ca.gov/download.ashx?IE0rcNUV0zbUy1iwYmWKng%3d%3d>

Chart 7: FY 2021-2022 City Emergency Medical Services Response Age Graph

Medical Priority Dispatch System

The Department utilizes the Medical Priority Dispatch System (MPDS) and Fire Priority Dispatch System (FPDS) to triage incoming 9-1-1 calls to dispatch the best appropriate resources. The MPDS is a unified system used by many dispatch centers to dispatch appropriate help to medical emergencies. MPDS starts with the dispatcher asking the caller questions which then allows the dispatchers to categorize the call and set a priority level ranging from minor to life-threatening, depending on the severity of the patient's condition. The line of questioning also guides the dispatcher to provide appropriate medical instructions to the caller before the Department's emergency resources arrive on scene. The MPDS determinants include Omega, Alpha, Bravo, Charlie, Delta, and Echo classifications. Fire resources respond to all determinant levels except for Omega-related calls, which are the lowest acuity level.

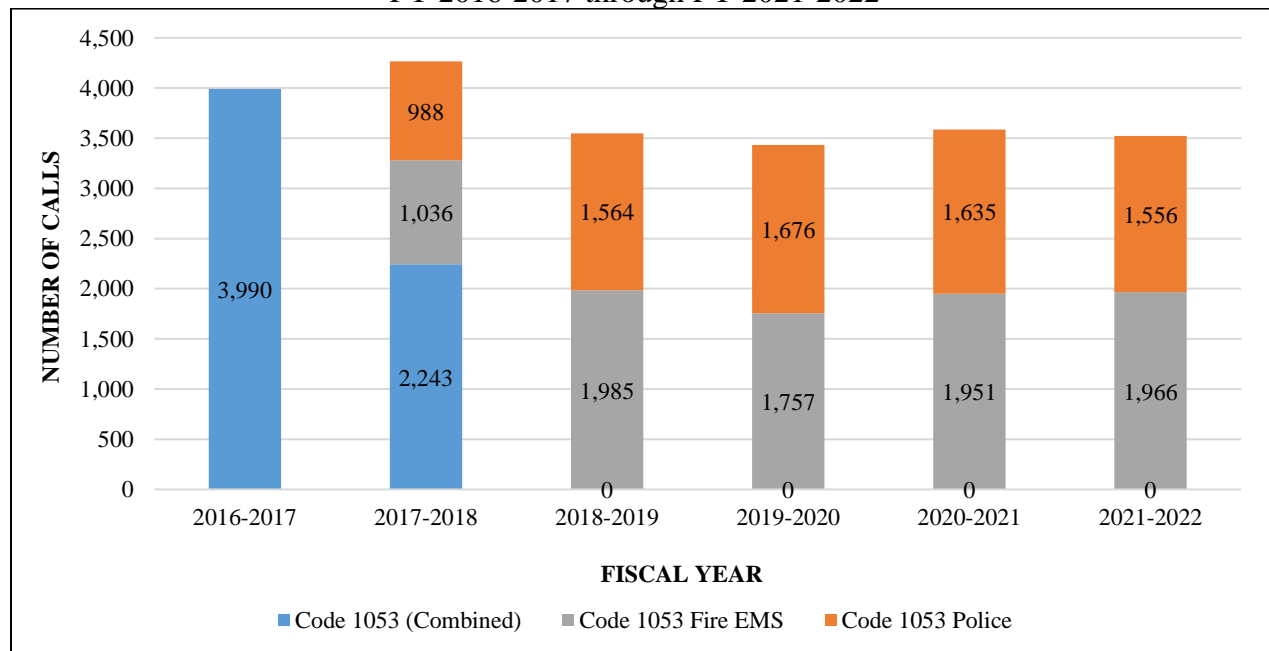
High EMS Demand Facilities

To reduce EMS calls to high-demand facilities including the Santa Clara County Jail, Valley Medical Center, and others such as managed care, assisted living, and shelters, the Department has been working with the Santa Clara County Emergency Medical Services Agency (County EMSA). New procedures have been adopted at the County Jail to reduce unnecessary 9-1-1 calls where non-emergency interfacility ambulance services are more appropriate. Additionally, the Department continues to engage with County EMSA to evaluate response data and identify appropriate and sustainable service delivery options for other high EMS-demand facilities.

Dispatch Procedures

The Department received feedback from frontline personnel regarding the frequency of being dispatched to calls that only require law enforcement to respond. The Department engaged with the Police Department to better understand the issue and to identify an amenable resolution. Beginning January 1, 2018, the Police Department modified their dispatch policy which resulted in a reduction of over 1,500 Fire Department incidents. This change eliminated a “combined event” type code (1053) and replaced it with two other codes which specified the need for police response only or EMS response needed.

Chart 8: Fire Department Response to Assist Police Department
FY 2016-2017 through FY 2021-2022



As seen in Chart 8, there were 3,990 dual responses (both Police and Fire) under the 1053 type code in FY 2016-2017. The partial year change in FY 2017-2018 resulted in 988 calls where the Department did not need to respond, and in FY 2021-2022, Department response was eliminated from 1,556 Police Department incidents.

Bay Area Rapid Transit

Based upon conversations with other fire agencies with experience serving areas with BART services, the Department anticipated an increase in call activity proximal to BART stations, particularly located at end-of-line stations. With the opening of the Berryessa/North San José BART Station in 2020, the Department is experiencing frequent calls for service at that location. The Department will evaluate response patterns and seek to identify mitigations. The proposed

BART service extension to downtown will further impact calls for service along that new corridor.

Local Mutual Aid

Call volume is increasing throughout the county and particularly in areas south of San José, including Morgan Hill and Gilroy. San José has historically provided mutual aid support within the county and beyond. Locally, this is achieved through automatic aid and mutual aid agreements. Automatic aid is established to assign the closest station to areas regardless of jurisdictional boundaries, within specified limits. Automatic aid is generally designed to be reciprocal and has minimal, or no impact, on participating agency call volume. Comparatively, in-county mutual aid is provided on an as-needed basis. As call volume increases and response time performance continues to be challenged, mutual aid becomes increasingly challenging to support. In past years, as resources were released to provide mutual aid support for other agencies, other resources would be moved up to provide coverage to the vacated areas. Currently, as resource availability decreases due to higher call volume, it is increasingly challenging to provide backfill resources and maintain response time performance levels while providing mutual aid support. The Department will continue to monitor these types of impacts and utilize mutual aid during significant incidents throughout San José.

Public Education and Safety

The 2019-2020 Adopted Operating Budget included the addition of a Public Information Manager and a Video/Multimedia Producer. Outreach and education efforts target diverse community members as best as possible to provide relevant and timely safety information with a goal to reduce fires, illness, and injuries. A Junior Firefighter Safety video series was created in FY 2020-2021 and provides safety messaging geared towards children and families on important topics such as smoke and carbon monoxide detectors, exit drills in the home, and electrical safety. The Department faced challenges reaching community members in person due to the COVID-19 pandemic and put great effort into developing educational materials available on the Department's website and social media channels. The Department continued to support City and County-wide public safety messaging to minimize the spread of novel coronavirus and continues to work with partners to curb other causes of fire and injury, including fireworks abatement and Vision Zero traffic safety efforts. Overall, the investments made towards public education to reduce the number and severity of fires, illness, and injury align with the Department's efforts to reduce calls for emergency services when such emergencies can be prevented.

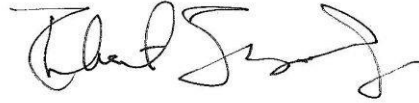
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COORDINATION

This memorandum has been coordinated with the City Attorney's Office.

A handwritten signature in black ink, appearing to read "Robert Sapien, Jr.", with a stylized, cursive script.

ROBERT SAPIEN, JR.
Fire Chief, Fire Department

For questions, please contact Robert Sapien, Jr., Fire Chief, at robert.sapien@sanjoseca.gov or (408) 794-6952.