



Memorandum

TO: PUBLIC SAFETY, FINANCE &
STRATEGIC SUPPORT COMMITTEE

FROM: Robert Sapien, Jr.

SUBJECT: FIRE DEPARTMENT CALL
VOLUME REPORT

DATE: March 4, 2020

Approved

Date

3-4-20

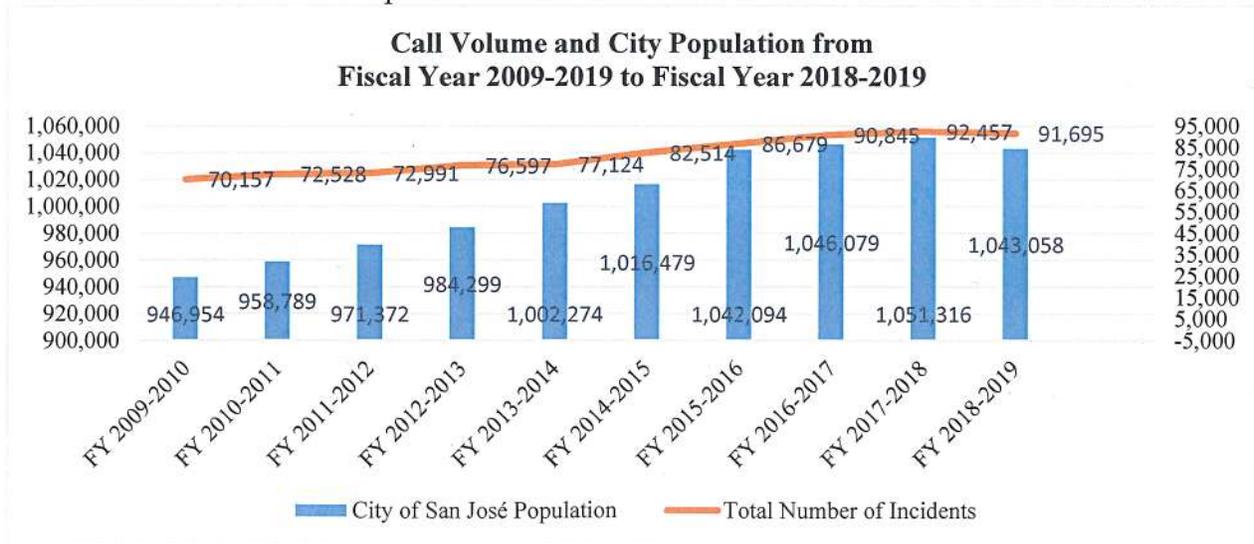
RECOMMENDATION

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

BACKGROUND

The Fire Department provides “all-hazard” emergency response in pursuit of its mission to protect life, property, and the environment through prevention and response. Predictably, incident responses, or call volume, has steadily increased with City population growth reaching a high point in Fiscal Year 2017-2018 of 92,457. Fiscal Year 2009-2010 call volume was 70,157 compared to 91,695 in Fiscal Year 2018-2019, an increase of over 30%. City population increased by more than 10% from 946,954 in Fiscal Year 2009-2010 to 1,043,058 in Fiscal Year 2018-2019. This data is reflected in Chart 1 below.

Chart 1: Call Volume and Population from Fiscal Year 2009-2019 to Fiscal Year 2018-2019



The Mayor's March 8, 2019 Budget Message, as approved by the City Council, included the following direction:

The City Manager is directed to conduct an internal review of opportunities to triage rising call volumes and maximize our scarce SJFD resources on life-saving and fire mitigation. That report should be provided to the Council prior to our next budget cycle, and should inform the City in its upcoming negotiations with the County over the provision of medical transport services. The City Manager is further directed to engage in discussions with VTA and BART regarding financial responsibility for the increases in anticipated call volume resulting from the opening of the Berryessa-North San Jose BART Station, and whether 2008 Measure B should fund additional response.

Increased 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 to address these challenges, the Department has pursued several strategies as reported annually to the Public Safety, Finance, & 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:

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 action 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 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

¹ [Fire Department Emergency Response Times Performance Semi-Annual Report, October 9, 2019](#)

² [Fire Department Organizational Review, June 7, 2016](#)

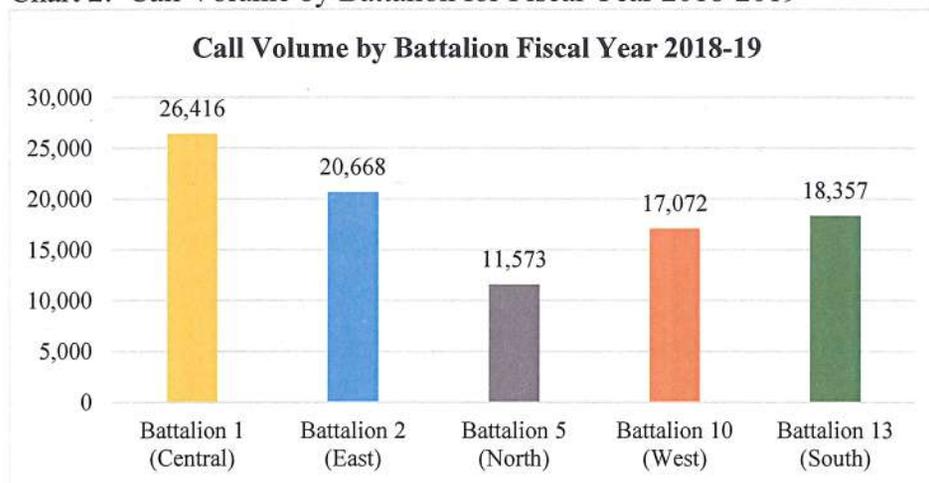
³ [Measure T - New Fire Station Placement Prioritization, June 6, 2019](#)

performance and resource availability, however continued increases in population and emergency call volume will continue to challenge Department resources.

ANALYSIS

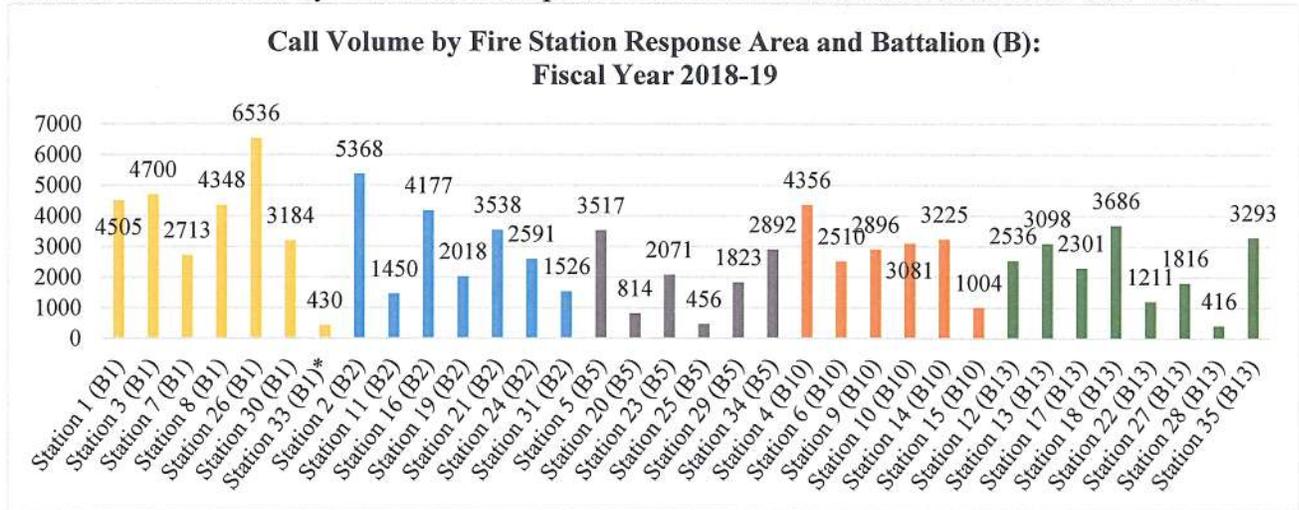
Generally, call volume is highest in the core of the City and lowest at the perimeter. As indicated in Chart 2 below, Battalion 1 which is centrally located, had 26,416 incidents in Fiscal Year 2018-2019. At peak periods, resources from other battalions are drawn into the core of the City as Battalion 1 resources are drawn down.

Chart 2: Call Volume by Battalion for Fiscal Year 2018-2019



Fire stations are located to provide coverage throughout the City, however population densities and service demands can vary greatly for each station 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 resource responses. A single incident may require a single resource response such as a Squad or Engine Company or several resource responses including multiple alarms of resources. Thus, incident response numbers only partially represent workloads for each of the fire stations.

Chart 3: Call Volume by Fire Station Response Area and Battalion for Fiscal Year 2018-2019



*Fire Station 33 is currently closed 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.

The high call volume in the core of the City negatively impacts response time performance. Chart 4 below reflects call volume intensity ranging from lowest (blue) to highest (red). Current station response area call volume results in reduced resource availability and compromised response time performance. Chart 5 reflects late response intensity ranging from lowest (green) to the highest number of late response (orange) showing how resource draw down impacts response time performance.

Chart 4: Call Volume Heat Map 2018

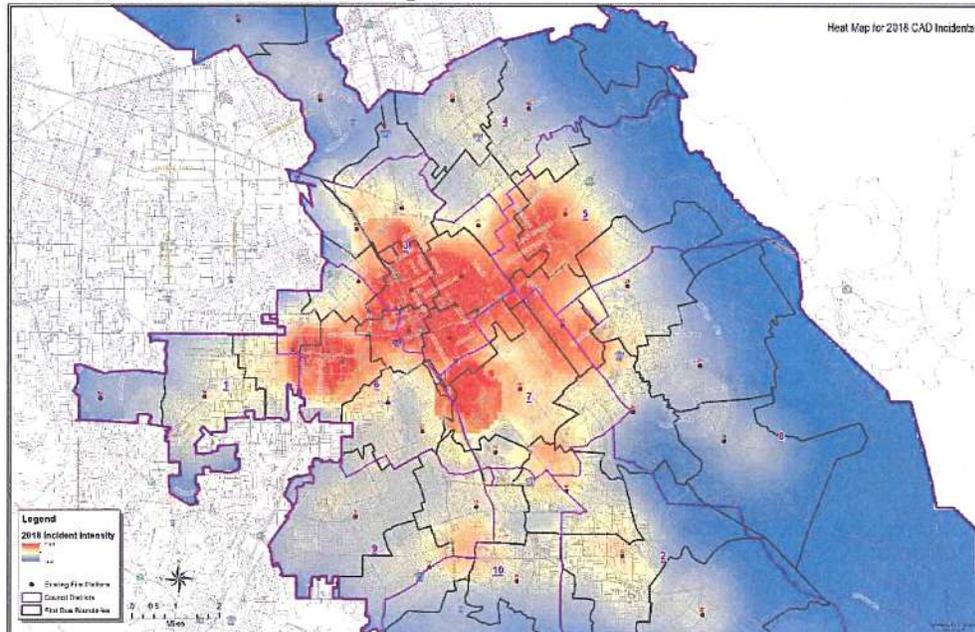
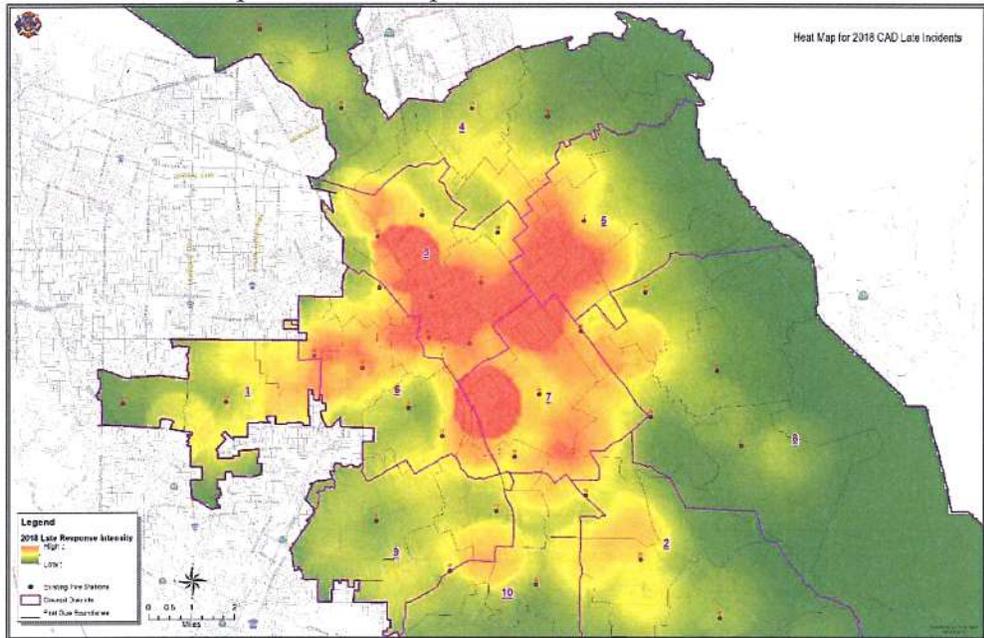
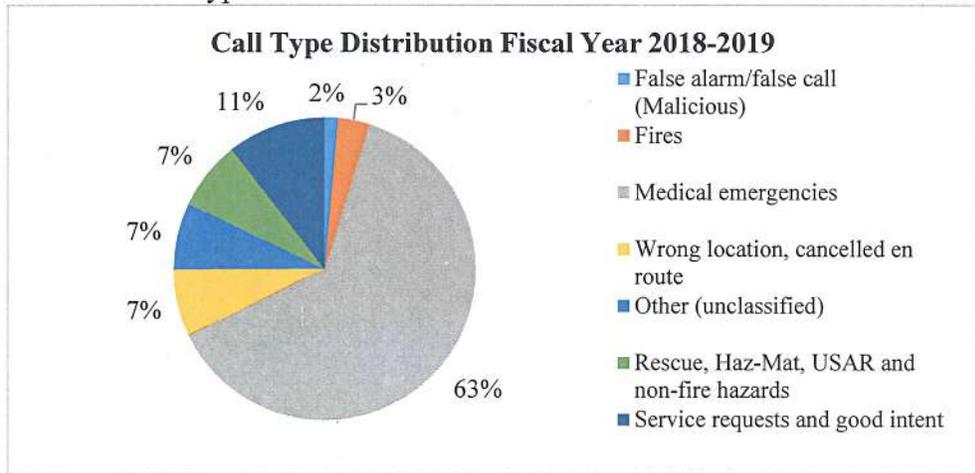


Chart 5: Late Response Heat Map 2018



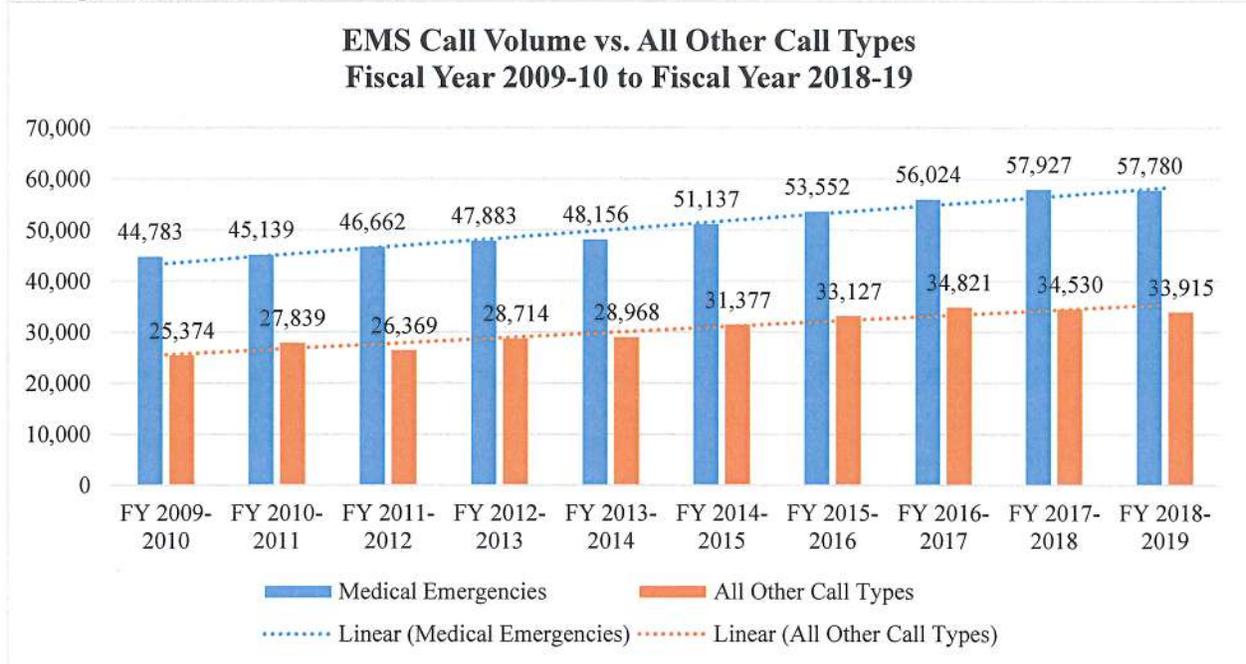
Call Type Distribution

Chart 6: Call Type Distribution for Fiscal Year 2018-2019



In Fiscal Year 2018-2019, 63% of total calls were for medical emergencies and this proportion has generally remained steady over the last ten years. From Fiscal Year 2009-2010 through Fiscal Year 2018-19, emergency medical services (EMS) call volume increased 29% from 44,783 to 57,780. Total responses for all other call types increased by 34% from 25,374 to 33,915 which included a 91% increase in fires from 1,614 in Fiscal Year 2009-2010 to 3,082 in Fiscal Year 2018-2019. Interestingly, in the same period, wrong location/cancelled en route incidents increased by 118% from 3,007 to 6,551 which may be attributable to increased mobile 911 callers.

Chart 7: EMS Call Volume Increases Compared to All Other Call Types Fiscal Year 2009-2010 through Fiscal Year 2018-2019

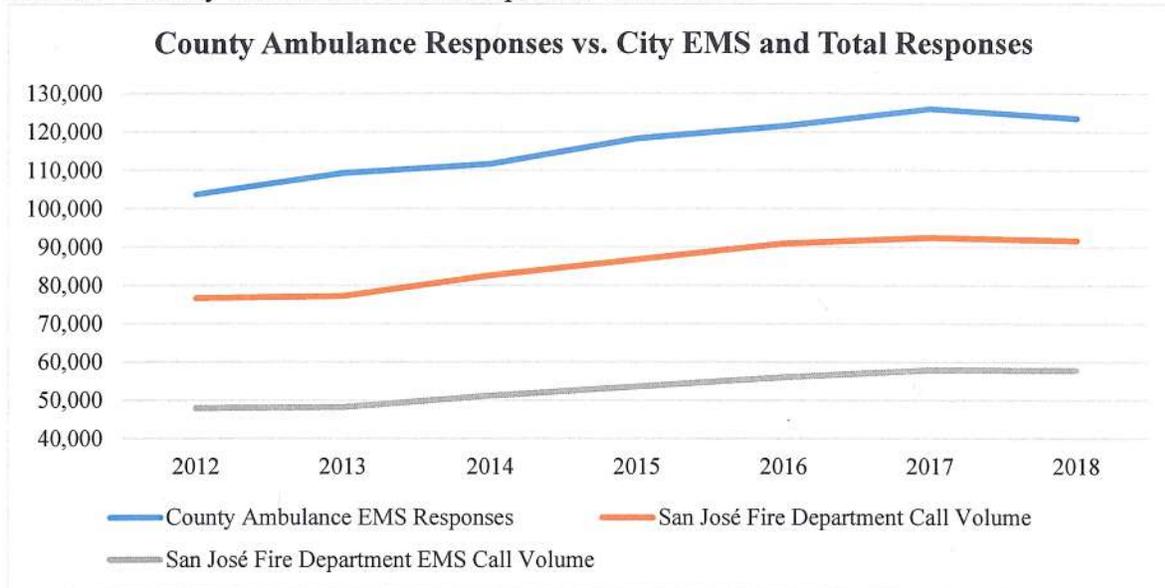


Countywide Trends

Call volumes are increasing countywide however Department EMS call volume increases have slightly outpaced countywide County Ambulance responses. The Santa Clara County Emergency Medical Services 2018 Annual Report⁴ provides 911 ambulance call volume history from calendar year 2012 to 2018. In that period, County 911 Ambulance responses increased by approximately 19% from 103,624 to 123,478. In the same period, Department total responses increased by approximately 20% from 76,579 to 91,695 and Department EMS call volume increased by approximately 21% from 47,883 in 2012 to 57,780 in 2018.

⁴ [Santa Clara County Emergency Medical Services 2018 Annual Report](#)

Chart 8: County Ambulance EMS Responses versus SJFD



Aging Population

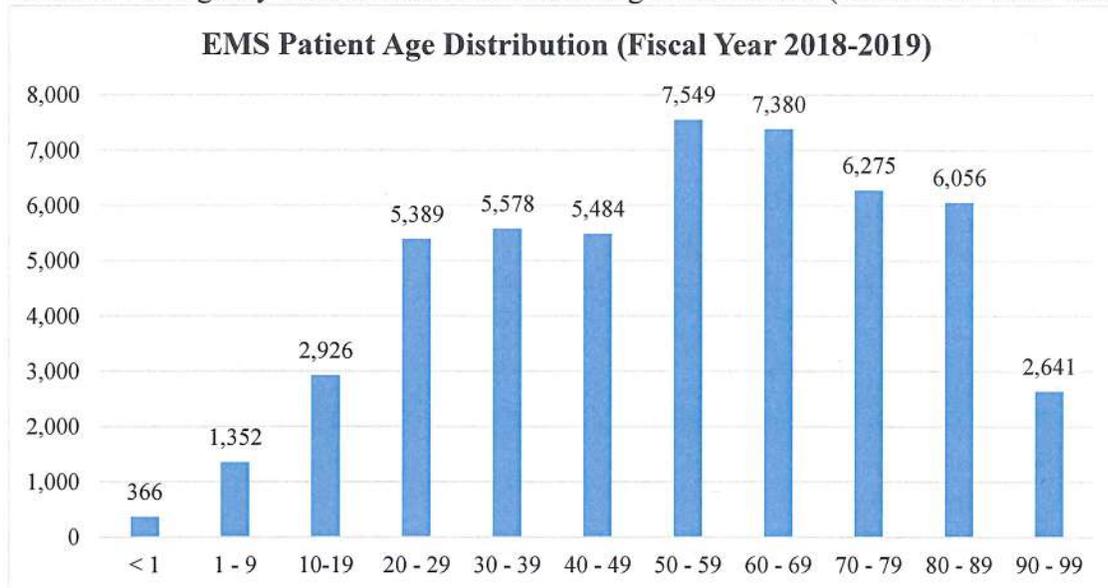
According to the California State Plan on Aging 2017-2021⁵, the number of Santa Clara County residents above age 65 will increase 99% from 277,700 in 2010 to 553,409 in 2030, and County residents age 85 and older is estimated to increase 85% from 28,039 in 2010 to 51,772 in 2030. The State Plan makes the following statement regarding health care demands of persons age 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 Fiscal Year 2018-2019, available patient age data for Department EMS care indicated that 43% of patients were age 60 and over and 59% of patients were age 50 and over. Chart 9 below provides patient age distribution data for Fiscal Year 2018-2019. As larger numbers of residents age into the 50 and over range, the Department and the entire community will be challenged to meet health and supportive needs.

⁵ [California State Plan on Aging 2017-2021](#)

Chart 9: Emergency Medical Services Patient Age Distribution (Fiscal Year 2018-2019)



Medical Priority Dispatch System

The Department utilizes the Medical Priority Dispatch System (MPDS) and Fire Priority Dispatch System (FPDS) to triage incoming 911 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. These questions allow 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 lines of questions also lead the dispatcher to providing the appropriate medical instructions to callers before Department resources arrive on scene. The MPDS determinate levels include Omega, Alpha, Bravo, Charlie, Delta, and Echo. Fire resources respond to all determinate levels except for Omega which is the lowest acuity level. Based upon a 2001 City Auditor recommendation (2001-05, #3) the Department has sought opportunities to expand the use of the Omega protocol and to identify alternate methods to serve the lowest level medical emergencies. Because progress in this area requires statewide and County change, progress has been slow and ultimately the number of calls that would appropriately fall into the Omega determinate level is low.

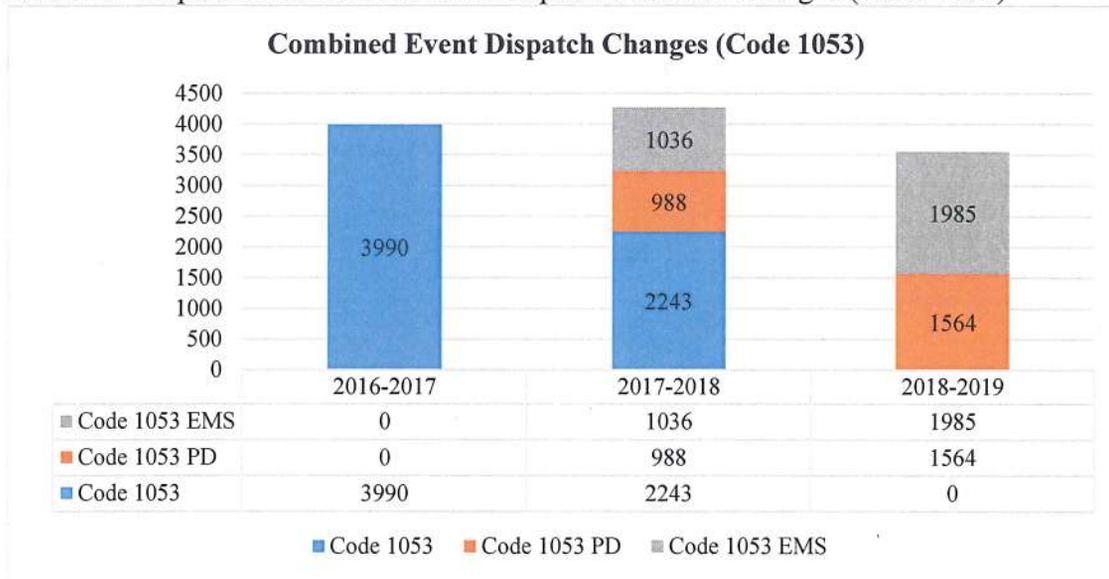
High EMS Demand Facilities

With little progress made in expanding the use of the Omega MPDS protocol, the Department shifted focus to reducing 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. Working with the Santa Clara County Emergency Medical Services Agency (County EMSA), new procedures have been adopted at the County Jail to reduce unnecessary 911 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 field personnel who felt that they were frequently being dispatched to law enforcement only calls. The Department engaged with the Police Department to better understand the issue and to identify a remedy. Beginning January 1, 2018, a Police Department dispatch policy change resulted in a reduction of over 1,500 Fire Department incidents. This change eliminated a “combined event” type code (Code 1053) and replaced it with two other codes which specified the need for police response only or EMS response needed. As shown in Chart 10 below, in Fiscal Year 2016-2017 there were 3,990 dual responses (both Police and Fire) under Code 1053. The partial year change in Fiscal Year 2017-2018 resulted in 988 calls where the Fire Department did not need to respond and in the full year of implementation in Fiscal Year 2018-2019, Fire Department response was eliminated from 1,564 incidents.

Chart 10: Impact of Combined Event Dispatch Protocol Changes (Code 1053)



Santa Clara County Ambulance Service

The County EMSA provides 911 ambulance services through a contracted for-profit provider (currently American Medical Response). This contract will expire concurrent with existing fire agency first responder agreements on June 30, 2022. Under the current model, first responder agencies (fire departments) are required to respond to emergency medical service calls more rapidly than ambulances and generally work flow is as follows: upon arrival, first responders address scene hazards, conduct patient assessments, initiate medical treatments, and prepare the patient for transport. Ambulance providers: upon arrival, receive patient care transfer information, assume patient care responsibilities, and transport patients to the appropriate emergency rooms. The ambulance service provider bills patients for the transport service and treatment procedures initiated on scene by first responders and in transit by ambulance staff. First responders receive some funding through the agreement with the County EMSA which is generated through patient

billing, however, the ambulance provider operates at a profit, meaning revenues are not fully reinvested into the EMS system.

With the expiration of both the ambulance provider and first responder agreements approaching, first responder agencies have expressed interest in improving EMS system performance and sustainability. The County has established the EMS 2022 Committee to evaluate possible alternate service delivery models and to address associated health and prehospital care concerns. The Department will update the City Council on any anticipated changes and activities related to post June 30, 2022 EMS system.

Bay Area Rapid Transit (BART)

Based upon conversations with fire agencies with experience serving areas with BART service, the Department anticipates increased call activity proximal to BART stations and especially at end of line stations. The Department has engaged in the BART development process to address fire protection and equipment needs, however, call volume concerns have not yet been raised. The Department will seek opportunities to better predict call volume impacts and work with BART and other appropriate agencies to implement appropriate mitigations.

Local Mutual Aid

Call volume is increasing throughout the county and particularly in areas south of the City 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 little or no impact on participating agency call volume. In county mutual aid on the other hand is provided on a needs basis. As call volume increases in the City and response time performance continues to be challenged, mutual aid is becoming increasingly difficult to support. In past years, as resources were released to provide mutual aid support for other agencies, other resources could be moved up to cover vacated areas. Today, as resource availability decreases because of higher call volume, it is increasingly difficult to provide backfill resources.

Public Education and Safety

The 2019-2020 Adopted Operating Budget included the addition of a Public Information Manager and a Video/Multimedia Producer which will largely focus on the development of Public Education messaging that will include appropriate use of the 911 system and development and/or sharing of public health and safety information aimed at reducing fires, illness, and injuries that can also result in reduced call volume. Currently, the Department is developing public messaging toward minimizing the risk of spread of novel coronavirus. The Department is also working with partners to curb other causes of fire and injury including fireworks abatement, and Vision Zero and traffic calming efforts. These risk reduction efforts are expected to reduce the number and severity of emergency calls.

March 4, 2020

Subject: Fire Department Call Volume Report

Page 11

CONCLUSION

The Department anticipates that population growth will continue to drive call volume. Additionally, as high-density housing and larger commercial developments are built, impacts will likely continue to be unbalanced across station response areas, further straining resource availability. To continue to effectively provide effective all-hazard response in the City and support other agencies through mutual aid, the Department will need to meet its City call volume demands. Continued focus on response time improvement initiatives and performance optimization will be critical while new fire stations are being constructed and additional response resources are funded. Additionally, the Department must continue to engage at the county and state levels to advance effective and sustainable EMS delivery model changes.

EVALUATION AND FOLLOW-UP

The Department will continue to monitor call volume data and recommends an update on this topic to the Public Safety, Finance, and Strategic Support Committee next year.

COORDINATION

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

/s/
ROBERT SAPIEN, JR.
Fire Chief, Fire Department

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