CITY OF
SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: PUBLIC SAFETY, FINANCE, & STRATEGIC SUPPORT COMMITTEE

FROM: Robert Sapien, Jr.

SUBJECT: FIRE DEPARTMENT EMERGENCY RESPONSE TIMES PERFORMANCE ANNUAL REPORT

DATE: September 30, 2020

Approved _(signature)_ Date 10-8-20

RECOMMENDATION

Accept the annual report on Fire Department emergency response times performance metrics and progress on response times performance improvement strategies through the end of 2019-2020.

BACKGROUND

As specified in the Public Safety, Finance, and Strategic Support Committee (Committee) Work Plan, the Fire Department is to provide a written annual report regarding emergency response time performance and progress on response time performance improvement strategies contained in the Fire Department Response Time Work Plan. The previous (semi-annual) report was accepted by the Committee on October 24, 2019[1].

Building upon the Response Time Work Plan presented to the Committee on June 19, 2014, the Department continues to advance strategies for maximizing response time performance. This report provides a status of the Department's current response times, as well as updates on ongoing response time performance improvement projects and strategies.

ANALYSIS

Response Timess (City and County EMS):

Department response times are measured against two perfomance measures: the City of San José's (City) adopted performance measures and the performance measures in the Santa Clara County (County) Emergency Medical Services (EMS) agreement.

City: In order to effectively respond to emergency calls for service (both fires and medical services) the City of San José revised its response time performance standard in 2000 to arrival within eight minutes 80 percent of the time for Priority 1 incidents, and arrival within 13 minutes

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[1] https://sanjose.legistar.com/LegislationDetail.aspx?ID=4145191&GUID=609965EF-0851-485C-A633-4681EAFB67E6&Options=&Search=
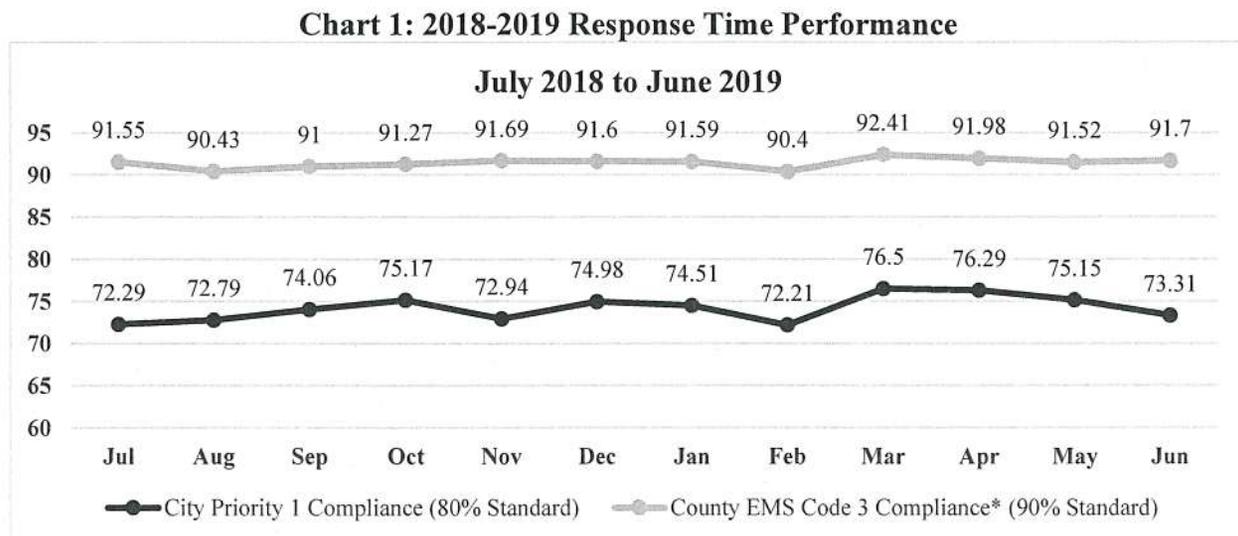
80 percent of the time for Priority 2 incidents. Priority 1 incidents are those emergency incidents that are determined to require immediate response with response vehicles using lights and sirens. Priority 2 incidents are those emergency incidents that are determined to require immediate response without the use of lights and sirens. Under the City Standard, the time clock begins upon receipt of the 9-1-1 call and stops upon arrival at the incident address.

County EMS Contract Provision: The 9-1-1 Emergency Medical Services Provider Agreement between the City and the County establishes response time requirements for two emergency vehicle response modes: with red lights and sirens or without red lights and sirens. 9-1-1 calls are triaged by public safety radio dispatchers utilizing the Medical Priority Dispatch System (MPDS). Resulting determinates (Omega, Alpha, Bravo, Charlie, Delta, Echo) inform field resources of the appropriate response mode. Lights and sirens responses require arrival on scene within eight minutes, 90 percent of the time, in all EMS calls in urban areas (commonly referred to as the County EMS Code 3 Standard). Lower level EMS incidents require arrival on scene within 13 minutes, 90 percent of the time, in urban areas. Under the County EMS response time standard, the time clock begins upon dispatch of response resources and stops upon arrival at the incident address.

The agreement with the County includes response time performance "exceptions" for responses outside of the County's defined Exclusive Operating Area (EOA) and designated "hard to serve areas." The County may also waive response time performance requirements when the response network is under unusual pressure, such as during periods of time when greater alarms are occurring or when the Department is providing mutual aid to other jurisdictions. During such exception periods, Department response times not meeting the County EMS Code 3 Standard are excluded from the County EMS Code 3 response time calculations.

Response Time (City and County EMS):

Chart 1 shows the Department's monthly response time performance for fiscal year 2018-2019.

Chart 1: 2018-2019 Response Time Performance

July 2018 to June 2019

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
County EMS Code 3 Compliance	91.55	90.43	91	91.27	91.69	91.6	91.59	90.4	92.41	91.98	91.52	91.7
City Priority 1 Compliance	72.29	72.79	74.06	75.17	72.94	74.98	74.51	72.21	76.5	76.29	75.15	73.31

● City Priority 1 Compliance (80% Standard)   ● County EMS Code 3 Compliance* (90% Standard)
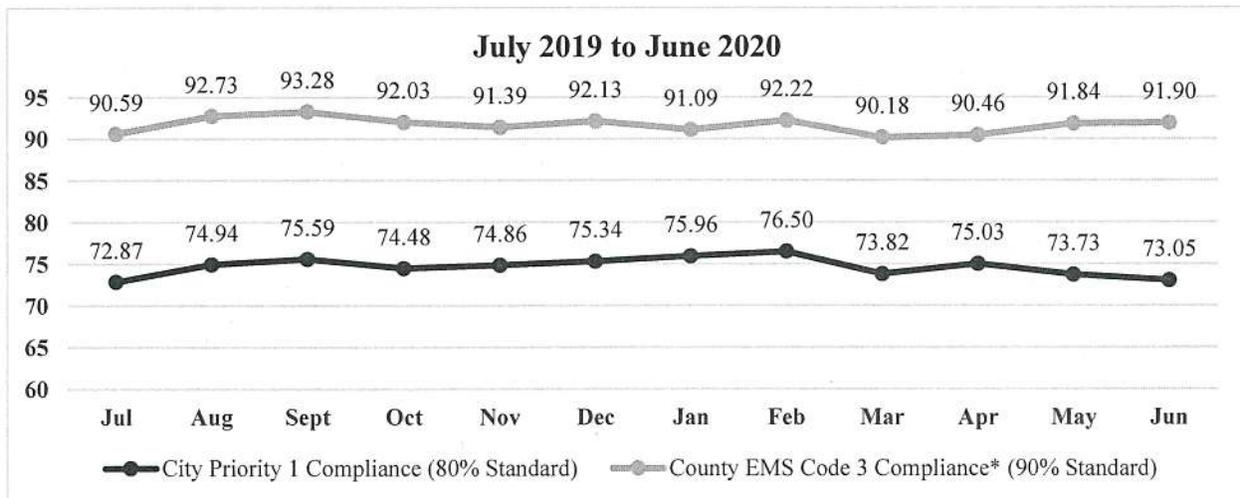
Compliance standard reflects performance reported to County EMS adjusted for allowable exemptions

During the fiscal year 2018-2019, the Department response times averaged:

- City Standard: 74.18 percent, or 5.82 basis points below the City Standard of 8 minutes 80 percent of the time, for Priority 1 calls.

- County Standard: 91.43 percent, or 1.43 basis points above the County EMS Code 3 Standard of 8 minutes 90 percent of the time.

Chart 2 shows the Department's monthly response time performance for fiscal year 2019-2020.

Chart 2: 2019-2020 Response Time Performance

Compliance standard reflects performance reported to County EMS adjusted for allowable exemptions.

During the fiscal year 2019-2020, the Department response times averaged:

- City Standard: 74.68 percent, or 5.32 basis points below the City Standard of 8 minutes 80 percent of the time, for Priority 1 calls.

- County Standard: 91.65 percent, or 1.65 basis points above the County EMS Code 3 Standard of 8 minutes 90 percent of the time.

The Department has met the County EMS Code 3 response time requirements for 27 consecutive months, averaging 91.46 percent, or 1.46 basis points above the County EMS Code 3 Standard of 8 minutes 90 percent of the time.

In fiscal year 2019-2020, the Department responded to 91,595 incidents which is a 5.2 percent increase from the 87,072 incidents in 2015-2016. In the prior 5-year period, incidents increased over 62% from 51,349 in 2009-2010 to 83,600 in 2014-2015. Despite a ten-year incident volume increase of over 78%, the Department currently operates out of one less fire station than in 2009-2010.

Table 1 below provides the numbers of total incidents over the last five fiscal years:

Table 1: Annual Incident Volume

	2015-2016	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**
Total Incidents	87,072	90,869	92,587	91,901	91,595

The Department's response times are broken down into three segments: alarm processing time, turnout time, and travel time. The Priority 1 standard is 8 minutes, 80% of the time. The 8 minute target includes 2 minutes for alarm processing, 2 minutes for turnout, and 4 minutes for travel time. The Department meets alarm processing and turnout time standards more than 80% of the time, however, the 4 minute travel time target is met less than 50% of the time.

Alarm processing begins when a 9-1-1 call is received into the Fire Communications Center (FCC) and assigned to a call taker. Most calls are transferred to the FCC from Public Safety Answering Points (PSAPs) that include San José Police, Santa Clara County Communications, California Highway Patrol, and others. In fiscal year 2019-2020, the Department achieved four improvements that will have a positive impact on alarm processing time including an improved Computer Aided Dispatch system (CAD) to CAD link between the City and County Communications Centers, diversion of non-emergency calls from the FCC to San José 3-1-1, "off-hook" answering technology, and new fire station alerting systems. The CAD to CAD link improvement results in a reduction of tens of thousands of telephone calls between the Centers annually. This reduction increases dispatcher availability, thus reducing call wait times. Similarly, the diversion of non-emergency calls to San José 3-1-1 also increases 9-1-1 dispatcher availability. Off-hook answering automatically opens the line between the caller an available 9-1-1 dispatcher, eliminating ring time and dispatcher reaction time. The new fire station alerting system utilizes a computerized voice and can reduce alarm processing time by simultaneously dispatching calls. Prior to this implementation, dispatches had to occur in sequence to wait for dispatcher and radio channel availablity. The combined results of these improvements will be measured in fiscal year 2020-2021.

Turnout time is measured from the point that a unit is notified of an incident to the time the unit initiated response (travel). Turnout time entails personnel stopping active activities, walking to the emergency vehicle, donning appropriate personal protective equipment based upon call type, mounting apparatus and securing seat belts. Response time performance data is shared with field personnel during each 48-hour work tour and company, and shift specific turnout time performance is shared twice per month with field supervisors.

As previously noted, travel time is the Department's principal challenge to on time response performance. Distance between fire stations, unit out-of-service time, traffic congestion, and high call volume each play a role in challenging travel time performance. To begin to close distance between fire stations and increase resourcing, the City is currently advancing new fire station building projects enabled by the 2018 Disaster Preparedness, Public Safety, and Infrastructure Bond Measure (Measure T), and is leveraging the Fire Station 20 replacement

project at Mineta San José International Airport to include an outward-facing fire apparatus bay that will create a new response area around the airfield. Fire Station 20 construction is currently underway with completion targeted for late 2021. The Department has worked to minimize unit out-of-service time by utilizing overtime to conduct training and other administrative details during scheduled off-duty time and/or to backfill resources that are out of service for training. Traffic congestion challenges were improved in 2018 with the implementation of Emergency Vehicle Preemtion (EVP). The implementation of EVP resulted in 948 intersection traffic signal lights preempting to green when emergency vehicles are passing though. The result has been improved response time performance and safer roadways for responders and civilians.

High call volume continues to challenge Department response time performance. When resources are committed to an emergency, they are unavailable to respond to the next emergency in their respective first-due area. When that next emergency occurs, a next-due resource will need to respond from a greater distance. Peak call volume periods and large scale incidents requiring multiple unit response stretch the Department's resource network thinly and results in reduced response time performance.

Chart 3 shows plotted responses where travel time was greater than 4-minutes. Red areas indicate the greatest number of late responses and green the lowest number of late responses. Although fire stations are closer together in the core of the city, the high number of incidents results in an increased number of late responses as previously explained. This 2018 chart aided in the placement and prioritization of Measure T fire station construction projects.

Chart 3: Travel Time Performance (Greater than 4-Minutes)
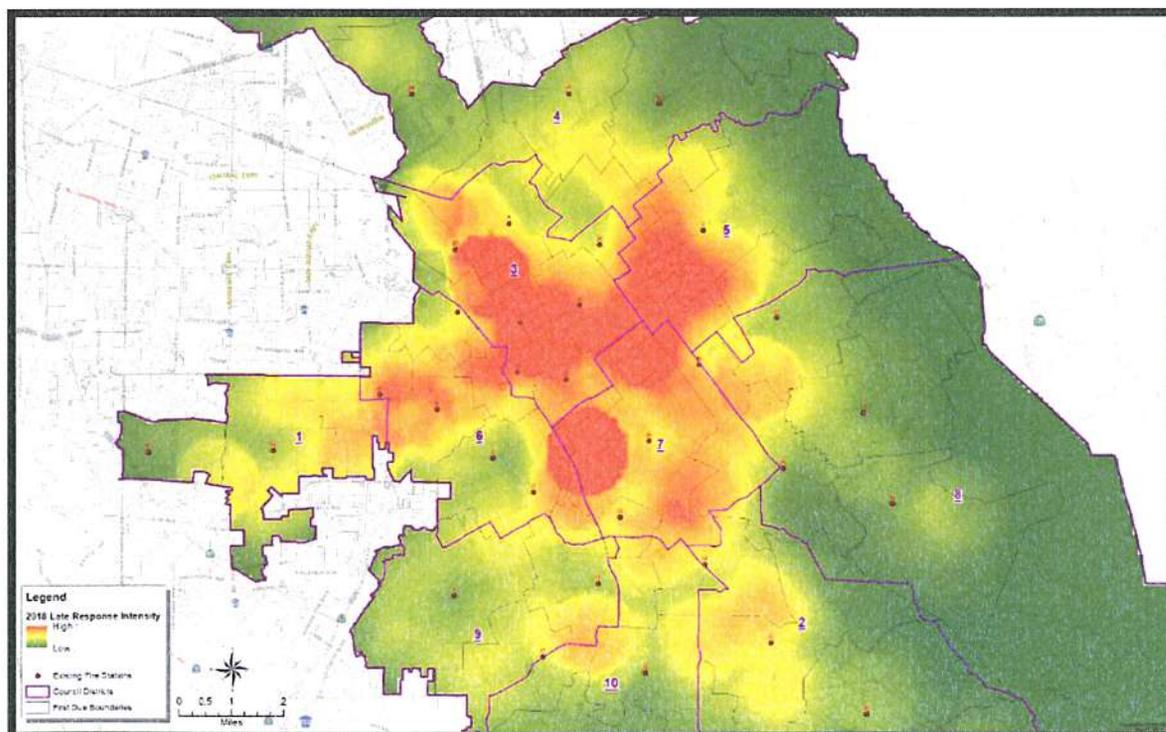
Measure T projects will provide three new fire stations including Fire Station 32 which will be built near McLaughlin Ave. and Story Rd., Fire Station 36 near McLaughlin Ave. and Capitol Expy., and Fire Station 37 near Lincoln Ave. and Curtner Ave. Fire Station 37 construction has begun and is expected to be placed into service in January 2022. Measure T will also enable the replacement of Fire Stations 8 and 23 which will be placed at locations that will further improve Department emergency response performance. Sites are currently under evaluation for these fire stations. Lastly, Measure T also provides funding for improvement of the Police and Fire Communications Center including expansion into space occupied by the Office of Emergency Management. Improvements to the physical space at Communications are expected to result in expanded capacity and improved integration of modern technologies to meet volume demands and support emerging 9-1-1 features.

The Department has taken some steps to moderate call volume through refinements in 9-1-1 call taker protocols and through targeted mitigation of high call volume locations where Department resources are not the ideal or needed resource. An effective 9-1-1 call taker protocol included a division of "person down" calls distinguishing between a law enforcement only response or law enforcement and fire response to provide emergency medical services care. This action elimated several hundred unnecessary Department responses per year. Mitigating targeted high call volume addresses, such as the Santa Clara County Main Jail Complex has involved collaboration with facilities to provide education, identify better options, and improve work flows to eliminate unnecessary and/or accidental triggering of a 9-1-1 system response. The Department will continue to pursue these opportunities as they arise.

Status of the Response Time Work Plan

The Department continues to advance multiple response time improvement strategies included in the Response Time Work Plan.

Table 2 provides an update on in process action items from the Fire Department's Response Time Work Plan:

Table 2: Response Time Work Plan *(In Process)*

#	Project	Comments
2	Data Collection *Status: In Process* *Timeline: Ongoing* *Segment: Overall*	This effort seeks to increase the storage and scope of electronic data collection to enhance analytical capabilities to improve response times. Data informing on call processing, turnout time, and travel time performance is in production. Additional quantitative and qualitative data is being identified for incorporation into the data warehouse and business intelligence tool.

3	Business Intelligence Tool *Status: In Process* *Timeline: Ongoing* *Segment: Overall*	These tools will provide reports and user interfaces ("dashboards") that direct organizational focus on performance driven by actionable data. These tools were implemented in December 2018. The Department is currently benefitting from generated initial products and continues to add and enhance reports.
8	Fire Communications Staffing *Status: In Process* *Timeline: June 2022* *Segment: Call Processing Time*	Currently there are 11.48 vacancies in Fire Communications. Recruitment efforts and training academies are ongoing. The 2019-2020 Adopted Operating Budget added one-time funding to conduct a staffing study. An agreement with a consultant was executed in September 2020 and services are underway.
9	Response Area Mapping/ESZ Refinement *Status: In Process* *Timeline: Ongoing* *Segment: Call Processing Time*	Ongoing refinement of Emergency Service Zone (ESZ) assignments to ensure appropriate resources (station/apparatus) are dispatched. Most recent changes are currently in testing mode and will be in production by November 2020.
10	Base Map Update *Status: In Process* *Timeline: Ongoing* *Segment: Call Processing Time*	Provide periodic updates to base map data for integration ("map roll") into CAD. The Department is evaluating opportunities for a countywide base map which could support multiple strategies.
14	CAD to CAD Dispatch Link(s) *Status: In Process* *Timeline: TBD* *Segment: Call Processing and Travel Time*	Connect SJFD CAD system with other County agencies (including County Communications) to share unit and event information. This project will be reinitiated once Santa Clara County Communications completes its transition to the Hexagon CAD system.
15	Border Drops *Status: On Hold* *Timeline: TBD* *Segment: Call Process and Travel Time*	Enhance auto-aid agreements to create borderless response areas. This project is dependent on CAD to CAD links and agency agreements and may require countywide GIS coordination.
17	Resource Move-Ups *Status: In Process* *Timeline: Ongoing* *Segment: Travel Time*	Resource move-ups continue as a manual process at Fire Communications and by request from Battalion Chiefs. As the Department moves toward closest unit dispatch, automated resource deployment software solutions will be evaluated.

18	Closest Unit Dispatch *Status: In Process* *Timeline: Spring 2022* *Segment: Travel Time*	This effort would dispatch resources based upon apparatus proximity to the incident rather than station location. The Department is assessing time and support requirements for completion of policy work, configuration of the Hexagon CAD system, reliability of cellular network, and providing system redundancy.
19	Navigation Technology *Status: In Process* *Timeline: Ongoing* *Segment: Call Processing and Travel Time*	The Department continues to refine routing effectiveness on new CAD and Mobile Data Computer (MDC) systems. iPads and updated hard-copy maps continue to provide interim improved routing capabilities. The most recent update to MDC maps occurred in December 2019.
21	Deployment Refinements *Status: In Process* *Timeline: Ongoing* *Segment: Travel Time*	The Department continues to pursue opportunities to address service gap areas identified through the Organizational Review process. This includes real time move-ups, backfill for training, augmented staffing levels for high fire danger periods, and special events.
22	Expand Omega Protocol *Status: In Process* *Timeline: December 2021* *Segment: Overall*	The Department is presently engaged in discussions with the County EMS Medical Director to evaluate opportunities for special studies and/or response protocols to expand application of the Omega triage determinant. Additionally, discussions have expanded to include opportunities to reduce 9-1-1 system burden from low acuity EMS service requests from high call volume facilities.

Table 3 provides an update on completed action items from the Fire Department's Response Time Work Plan:

Table 3: Response Time Work Plan (*Completed*)

1	Analyze/Validate Response Time Data/Determine Impact on Response Performance *Status: Completed* *Segment: Overall*	The Department provided the San José Fire Department Response Time Performance Initial Analysis in April 2014 with third-party methodology review and validation by Athena Advanced Networks. This process is now ongoing and is the source of data cited in this report. The Department will monitor CAD upgrade impacts to ensure continuity of data reporting procedures.

4	Data Warehouse *Status: Completed* *Timeline: *Ongoing* *Segment: Overall*	This tool centralizes data from multiple sources and would be the data source for reporting and business intelligence tools. This item was implemented in December 2018.
5	Enable Intergraph iTracker ("Halo") *Status: Completed* *Segment: Turnout and Travel Time*	This feature records en-route and on-scene information utilizing the Automatic Vehicle Location (AVL) system. iTracker can provide greater data reliability than manual entry via MDC performed by response personnel. This item was completed in January 2018.
6	Implement Early Dispatch *Status: Completed* *Segment: Call Processing Time*	In March 2014, the Department eliminated "station pre-alerts" and adopted "early dispatch" procedures for EMS responses to improve dispatch time. As a result, all EMS dispatches became code-3 until completion of Emergency Medical Dispatch (EMD) triage. This procedure results in simultaneous dispatch of Squads, with the appropriate resource continued upon completion of triage. Emergency Fire Dispatch (EFD) procedures were also refined on August 1, 2016.
7	9-1-1 Phone System Upgrade *Status: Completed* *Segment: Call Processing Time*	New system hardware installation was completed in June 2016 and system training (Power MIS) was completed in September 2016. Installation of system monitoring hardware in the control room was completed in March 2018.
11	EMS Quality Assurance Update *Status: Completed* *Timeline: *Ongoing* *Segment: Call Processing Time*	Training was completed in July 2016 and software and protocols upgraded August 1, 2016. This process recurs with software and protocol updates and upgrades.
12	Organizational Review *Status: Completed* *Segment: Overall*	Report accepted, along with the Department Strategic Business Plan, in June 2016
13	Turnout Time *Status: Completed* *Segment: Turnout Time*	Performance data isolating turnout time performance is provided to field personnel bi-monthly. Daily turnout time performance reports have been deployed in the Business Intelligence Tools.

16	Traffic Signal Preemption (Emergency Vehicle Preemption, EVP) *Status: Completed* *Segment: Travel Time*	This effort expands traffic signal preemption more broadly across the City. The Department worked with Police Department Communications, Information Technology Department, and Department of Transportation (DOT) to leverage DOT systems to significantly expand signal preemption. The system was fully deployed in December 2018 with a total of 948 intersections.
20	Unit Availability *Status: Completed* *Segment: Travel Time*	The Department has implemented various strategies to reduce unit out of service time including adjusted training scheduling and conducting administrative details on and off duty on an overtime basis. Backfill resources to cover staffing gaps created when companies are out-of-service for training, enabled by 2016-2017 Adopted Operating Budget action.
23	Station Alerting System *Status: Completed* *Segment: Call Processing and Turnout Time*	The 2016-2017 Adopted Operating Budget approved $1.3 million to support the implementation of an upgraded station alerting system. The upgraded fire station alerting system automates some dispatching steps, resulting in reduced call processing times. In October 2017, Council approved a funding increase for a total $1.5 million. This project was completed in August 2020 and the Department is in monitoring and maintenance mode.
24	Response to County Jail and County Facilities *Status: Completed* *Timeline: Ongoing Monitoring* *Segment: Travel Time*	In December 2014, Santa Clara County released a Limited Scope Management Audit of Emergency Medical Services Response Times which recommended that the County develop additional policies limiting when the County Jail and Valley Medical Center call 9-1-1 for assistance on medical emergencies based on the existence of trained medical personnel at those facilities. The County has initiated actions to reduce unnecessary 9-1-1 calls, and the Department continues to monitor County Jail facility call volume.

* Although the project is completed, the Department is continuously refining and adjusting to new developments as they occur.

CONCLUSION

The Department will return to the Committee in Fall 2021 with its next annual report regarding emergency response time performance and progress on response time performance improvement strategies contained in the Fire Department Response Time Work Plan.

COORDINATION

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

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