

Limited Scope Management Audit

Emergency Medical Services Response Time

Fire Department of the City of San Jose



Prepared for the
Board of Supervisors of the
County of Santa Clara

December 1, 2014

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December 1, 2014

Supervisor Mike Wasserman, President
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Board of Supervisors
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Dear Supervisor Wasserman:

We have completed the *Limited Scope Management Audit of the City of San Jose Fire Department Emergency Medical Response Function* performed in accordance with the Emergency Medical Services Provider Agreement between the City of San Jose and the County of Santa Clara, dated June 30, 2011. This audit was conducted based on direction by the Board of Supervisors at its meeting of March 11, 2014.

The audit was conducted in conformity with the United States Government Accountability Office (GAO) "Yellow Book" Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. The objective of this limited scope management audit was to examine the City's policies, procedures and operations related to its emergency medical services function carried out by the Fire Department, to identify impediments inhibiting the Fire Department from achieving at least 90 percent of its emergency medical responses in accordance with the time standard goals agreed to in the June 30, 2011 Emergency Medical Services (EMS) Agreement and to develop recommendations, that if implemented, would enable the Fire Department to achieve the County time standard goals.

In performing this audit, we reviewed EMS call data provided by the City pertaining to about 143,000 emergency 9-1-1 calls received between July 2012 and April 2014 that resulted in the dispatch of a Fire Department apparatus. More than 119,000, or about 84 percent were dispatched as medical emergencies. We also interviewed first responder staff at all 33 City fire stations, as well as several Fire Department command staff and Communications dispatch supervisors. In addition, to obtain comparative workload and resource information, 19 cities throughout California were surveyed. We also observed, first hand, conditions under which emergency Code 3 responses are made by riding with first responders on several calls.

Pursuant to these audit procedures, a series of recommendations were developed that would improve the efficiency and effectiveness of the Fire Department's emergency medical services function. Primary among the proposed recommendations are that the Fire Department:

- Conduct a comprehensive review of the first-due area of responsibility for all 33 stations, since about 10 years have elapsed since the last such comprehensive review, and update this analysis annually. Twenty-one of the 33 stations were determined to have an adjacent station with an average 32 percent lower late response rate.
- Request funding to obtain current detailed street maps of the first-due area for all 33 stations, since new maps have not been obtained for at least eight years and are becoming increasingly inaccurate as development and road changes occur.
- Request inspection and repair of traffic signals equipped with preemption devices that are not operating properly, and installation of preemption devices at high priority intersections currently not equipped with preemption devices.
- Collect and report exceptional circumstances that occur during EMS responses, which qualify as exemptions from response time calculations under the County Agreement, but have not been previously reported, understating the Fire Department's actual response time performance.
- Provide a monthly report to all stations of actual emergency medical response time and turn-out time performance for the prior month by each station, to enable station staff to proactively review their own performance

on a station-by-station and shift-by-shift basis.

- Meet with County EMS, Department of Correction and Valley Medical Center staff to update current policies and procedures governing when a 9-1-1 Fire Department response is needed versus an ambulance patient transport. During the audit period, about 800 9-1-1 Code 3 EMS calls were made from these County facilities, some of which may not have been medically necessary, resulting in removing a Code 3 response unit from service which could delay a Code 3 response to a citizen with a true Code 3 emergency.
- It is also recommended that the City reevaluate its existing fire station and apparatus resources in relation to its actual EMS response time performance, the City's response time performance goals, and the high volume of calls, population and square miles of responsibility per station. It is noted that the City had the highest reported second-due response rate (response by a station adjacent to the station receiving a call that is out on a call or otherwise unavailable) of any of the cities that reported this information. During the audit period, about 23 percent of the City's second-due EMS responses were late.

Based on these findings and recommendations, the implementation of the corrective actions described should enable the Fire Department to achieve the County EMS response time goals of 90 percent timely responses within 8:00 minutes and 13:00 minutes for Code 3 and Code 2 responses, respectively.

We would like to thank all of the staff and management of the City of San Jose Fire Department for their generous and patient assistance provided us during this audit. Further, we want to recognize the dedication and professionalism exhibited by all of the first responders who contributed to our efforts in developing this report.

Respectfully submitted,


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Section 1. History of First Responder Financial Incentive Agreement

The City of San Jose Fire Department entered into a five-year agreement with the County of Santa Clara on June 30, 2011 for purposes of authorizing the City to provide First Responder services to 911-Emergency Medical Response (EMS) calls within the geographic boundaries of the County of Santa Clara, which is the EMS Exclusive Operating Area of the County pursuant to State law. The contract makes available a total of \$5 million annually (to be increased based on the change in the Consumer Price Index) to participating fire agencies within the County over the five-year period from July 1, 2011 to June 30, 2016. Of the \$5,000,000, about \$3.6 million is available specifically for compliance with EMS response time performance goals.

On a monthly basis, participating fire agencies submit detailed reports of all 911-EMS call responses to the Emergency Medical Services Agency of the County Public Health Department (County EMS). County EMS analyzes the reported data and determines the timeliness of performance of each participating fire agency against the contract standards for Code 2 (no lights and sirens) and Code 3 (lights and sirens) 911-EMS responses. Based on actual performance each month, County EMS authorizes payment of First Responder incentive funds to the fire agencies, which are then paid by the County ambulance service provider (Rural/Metro) pursuant to the 2010 ambulance contract between the County and Rural/Metro. The contract performance standards require a minimum of 90 percent of all Code 3 911-EMS responses to arrive within seven minutes and 59 seconds (7:59), and 90 percent of all Code 2 911-EMS responses to arrive within 12 minutes and 59 seconds (12:59).

All of the fire agencies in the County successfully achieved the contract performance standards until the City of San Jose first fell below the minimum standard to 89.27 percent in February 2012. The City under-performed again in April 2012, achieved the standard from May 2012 through August 2012, and under-performed for each of the subsequent 18 months between September 2012 and February 2014. In accordance with Section IX of the contract between the County and the City, failure to achieve the 90 percent performance standard for three consecutive months, or four months in any 12-month period, is deemed to be a material breach of the contract and may result in

termination of the ability to participate in the first responder funding program and/or forfeiture of first responder funding. Consequently, on Tuesday, March 11, 2014, the Board of Supervisors directed its Management Audit Division to conduct a limited scope management audit of the City of San Jose Fire Department 911-EMS response policies and procedures to identify the issues impeding the Department’s ability to respond to emergency medical 911 calls in accordance with the goals specified in the EMS First Responder contract between the City and the County, and to make recommendations that would enable the City to achieve the performance goals. The following table reports the City’s percentage of on-time (7:59 or less) 911-EMS Code 3 responses by month as originally calculated and reported by the City from July 2012 through February 2014 when the Board of Supervisors directed the Management Audit Division to conduct this audit¹:

City of San Jose
911-Code 3 Emergency Medical Services
Percent of On-time Responses by Month

<u>Month</u>	<u>Percent On-time</u>	<u>Month</u>	<u>Percent On-time</u>
July 2012	90.11%	May 2013	87.32%
August 2012	91.67%	June 2013	86.84%
September 2012	88.74%	July 2013	89.19%
October 2012	88.01%	August 2013	88.37%
November 2012	87.41%	September 2013	86.32%
December 2012	87.44%	October 2013	86.89%
January 2013	88.14%	November 2013	83.87%
February 2013	88.60%	December 2013	83.87%
March 2013	89.39%	January 2014	88.06%
April 2013	89.52%	February 2014	87.66%

Pursuant to contract Section IX. Monthly Non-Compliance, failure to achieve the 90

¹ On April 21, 2014, the Fire Department issued revised percentages that were reported to have been corrected to account for various procedural changes in the methodology used to compile and calculate actual EMS response times pursuant to the requirements of the contract with County EMS. The revised numbers are very close to the originally reported performance data which averaged 88.13% versus the revised data which averaged 89.02%. In addition, the original data reported 18 of the 20 months to be below the 90 percent contract goal, while the revised data reported 17 of the 20 months to be below the 90 percent goal.

percent standard for three consecutive months constituted a material breach of the contract and the County, at its discretion, could withhold payment of the City's share of the First Responder funding, which was budgeted at \$1,839,174 annually in FY 2012-13, FY 2013-14 and FY 2014-15, for a total of \$5,517,522 for the three fiscal years. Despite the breach of contract, the County authorized continued payment to the City for the 14 consecutive months of non-compliant performance between September 2012 and October 2013, before enforcing the funding forfeiture provision in November 2013. During this period the County authorized total payment to the City of \$2,145,703 less \$560,350 related to liquidated damages for late responses on individual EMS calls for a net payment to the City of \$1,585,353². However, since November 2013, the City's under-performance has resulted in the loss of the full \$1,532,645 budgeted for the City of San Jose for the 10 months through August 2014, and the City will not be eligible to receive any funding until it is compliant for at least nine months of the most recent 12-month period. The earliest this could occur would be about April 2015 if the City achieved the 90 percent compliance standard monthly from August 2014 through April 2015. Therefore, the City will forfeit at least an additional \$1,226,116 that is budgeted for the City during this period, increasing the total loss of First Responder revenue to \$2,758,761.

Section 2. Description of Limited Scope Methodology

Audit Planning

Pursuant to the direction of the Board of Supervisors Management Audit staff prepared a draft limited scope task plan designed to focus on the policies and procedures employed by the City of San Jose Fire Department to respond to 911-EMS calls. The draft task plan was distributed to the Board of Supervisors and shared with the City of San Jose Fire Department and the County Central Fire District to obtain comments and input to ensure that the results of the audit would address the issues of concern and expectations of the Board of Supervisors and other stakeholders. An entrance conference was held with staff of the City Manager's Office, City Attorney, Mayor's Office and Fire Department on March 25, 2014.

² Annex B contract Section VII. provides for liquidated damages ranging from \$50 to \$7,500 for each late response in excess of the 7:59-minute Code 3 goal and 12:59-minute Code 2 goal. Liquidated damages are deducted from the monthly payment to the City up to the full amount of the City's monthly first responder budget. Since the July 2011 commencement of the First Responder Agreement, the City has incurred liquidated damages losses totaling \$941,150.

Interviews and Observation

The Deputy Fire Chief and other command staff were interviewed to obtain input from them regarding the response time issue and to arrange for the visiting and interviews with firefighters and paramedic staff who perform the day-to-day emergency responses. Interviews were also conducted with managers and supervisors of both the City and the County emergency communications centers to obtain a detailed description of the processing of 911 EMS calls by both communications centers. All 33 operational fire stations were visited and inspected to obtain a firsthand understanding of the physical layout, the apparatus housed at each station, the first-due geographic responsibility of each station, and to obtain insights from the professional staff who provide the EMS services on a 24/7 basis. We also rode with engine and truck companies while responding to several 911-EMS calls to observe the turnout process, the use of mapping and computer resources and communications with the fire dispatch center.

Validation of 911 Call Information Provided by the Fire Department to County EMS

Prior to commencing our review of the Fire Department 911 incident data provided by the Department for the period July 2012 through April 2014, we conducted a validation exercise to ensure the data provided to the County by the Fire Department was consistent with the data received by the Fire 911-Communications Center. This task was requested by the Board of Supervisors after receiving multiple communications from the Fire Department reporting errors and inaccuracies in the monthly performance data previously provided to County EMS³. The data provided by the Fire Department for the July 2012 through April 2014 period included a total of 161,433 reported incidents documented by the City Fire Communications Center CAD System, each with 88 columns of related information (some entered by Communications staff and some by other Fire Department staff for County contract reporting purposes) for a total of more than 14.2 million cells of 911 call information. To test the accuracy of this information provided to the County, we selected a random sample of 100 incidents over the 22-month period and traced the information provided by the Fire Department back to the source data in the Fire Communications Center CAD system data base working with supervisors of the Communications Center. Through this process we were able to

³ On December 10, 2013, in an internal Fire Department memorandum provided to the County, the Department reported that due to a variety of calculation and procedural errors in reporting EMS response time performance, the Departments actual November 2013 response time performance against the City's 8:00 minute goal was only 61.9 percent, and that the actual response time performance against the County's 8:00 minute goal has probably been similarly overstated. A similar memo reporting errors in prior City reports on response time was issued on April 21, 2014.

confirm the accuracy of 100 percent of the data in our random sample related to the time a unit was dispatched, the final call type (medical, fire, or other), the final call type code (code 3-lights and sirens, or code 2-no lights and sirens), the time a unit arrived on scene, and if an on-time cancellation occurred.

Survey of City Fire Departments Throughout California

To obtain a comparative perspective on EMS resources and workload in the City of San Jose, in other fire departments within the County, and in comparable California municipalities, relevant data pertaining to 19 other fire departments was collected from internet resources and by telephone inquiries. It is noted that the information shown in Attachment 1, which compares fire department EMS resources and workload in 20 selected California cities, is as reported by each jurisdiction. These municipalities include:

Campbell	Los Altos	Morgan Hill	San Diego
Cupertino	Los Altos Hills	Mountain View	Santa Clara
Fresno	Los Gatos	Oakland	Saratoga
Gilroy	Milpitas	Palo Alto	Sunnyvale
Long Beach	Monte Sereno	Sacramento	

On several measures, the survey information indicates that the San Jose Fire Department is carrying a higher workload, relative to its resources, than its peer departments. This is true in comparing San Jose to the full list of 19 comparison cities, as well as when comparing San Jose just to the seven cities surveyed with populations exceeding 100,000 residents. For example:

- San Jose ranked fourth in average number of calls per station, and its calls per station exceeded the average figure among the 19 comparison cities by 90 percent. It ranked fourth among the eight largest cities, and exceeded the average of its seven high-population peers by 15 percent.
- San Jose ranked fifth in average population per EMS unit, and exceeded the average figure among the comparison cities by 84 percent. Compared to the seven cities with 100,000 or more residents, San Jose ranked fourth in population per EMS unit, and its figure exceeded the large-city average by 45 percent.
- San Jose ranked fifth in average square miles served per station, and exceeded the average area served among the 19 comparison cities by 29 percent. Among the large cities, San Jose ranked third in area served per

station, and exceeded the average area served by the seven large comparison cities by 30 percent.

Consequently, whether compared with the larger group of 19 cities or the smaller group of seven large cities, San Jose generally has a higher call volume, geographic area of responsibility and population per station than the average of the comparison cities. Of these characteristics, the higher than average call volume and geographic area of responsibility per station can adversely affect the Department's response time due to an increased number of second due responses by neighboring stations, and longer than average distances to travel to each call. Given the presence of these workload and resource conditions, in addition to examining current first and second due areas of responsibility for each station as discussed in Section 3.1, the City should determine if its current actual EMS response time performance and goals are being met by existing station and EMS unit resources. The Department reported that this analysis will be accomplished by Work Project 23 which is scheduled to be completed in the winter of 2015, as part of a series of projects planned to address the response-time issue. A list of these projects, provided by City staff during the exit conference for this audit, is provided as Attachment 11 to this report.

Research of EMS Emergency Response Strategies and Best Practices

In addition to the other steps described here, we also conducted extensive Internet research on various issues arising from firefighter comments and other information obtained during this study. That research was geared to identifying the extent of similar EMS response-time problems in other jurisdictions, and what solutions have been tried elsewhere, in order to identify best practices that the City of San Jose should consider. Where appropriate, information on best practices in other fire departments around the United States and other research information have been provided in this report, particularly in the recommendations for various steps that would help address the multiple issues firefighters identifying as adversely impacting response time to EMS calls.

Preparation of Draft Report

Following the completion of fieldwork, including interviews and the analysis of 911 call data received by the City's Communications Center and provided to the County by the Fire Department for the period July 1, 2012 through April 30, 2014, a draft report was prepared. The draft report was issued to the Fire Department on October 7, 2014.

Exit Conference with Fire Department Administration

An exit conference was held on October 15, 2014 with the Fire Chief and staff to obtain their views on the report findings, conclusions and recommendations, and to make corrections and clarifications as appropriate. Following the exit conference, a revised draft was provided to the Fire Department for its use in preparing a written response to the report.

Preparation and Issuance of Final Report

Following receipt of the written response from the Fire Department, the final report was prepared and issued to the Board of Supervisors on December 1, 2014.

Section 3. Operational Issues Adversely Affecting Response Time

Background

The City of San Jose Fire Department is responsible for responding to and remediating all forms of emergency events that occur in the 180⁴ square mile incorporated area of the City, including fires, search and rescue, hazardous chemical spills, vehicular accidents, miscellaneous other events, and medical emergencies. During the period of our audit, July 1, 2012 to April 30, 2014, a total of 161,429 emergency 911 incidents were reported to and recorded by the Fire Department 911 communications Center, of which 18,450 did not require the dispatching of a vehicle. Of the remaining balance of 142,979 incidents to which a vehicle responded (including both City and non-City apparatus), approximately 16 percent, or 23,428 were fire or other incidents, and 84 percent were medical emergencies. Of the 119,551 medical emergencies, 100,063, or approximately 84 percent were responded to on a Code 3 (lights and sirens) basis and 19,488, or about 16 percent, on a Code 2 (no lights and sirens) basis, with the goal that at least 90 percent of the Code 3 responses would arrive on the scene of the medical emergency in less than 8:00 minutes, and 90 percent of the Code 2 responses in less than 13:00 minutes.⁵

⁴ The actual square mileage of the City of San Jose is reported by the City to be approximately 180 square miles. However, pursuant to an agreement with the County Fire Department, the City provides services to certain unincorporated areas of the County, which it can more efficiently provide, and the County Fire Department provides services to certain areas of the City, which the County Fire Department can more efficiently provide. When these areas are considered, the City reports that its net responsibility amounts to about 206 square miles.

⁵ Incidents reported account for 100 percent of 9-1-1 calls received from July 2012 through April 2014. The data was based on the final call type (medical, fire or other) and the final call code (Code 3-lights and siren, or Code 2-no lights

To provide the emergency services as described above, the San Jose Fire Department currently operates and staffs 33 stations with 31 fire engines (pumper trucks), nine ladder trucks, and five squads that respond to emergency calls in smaller urban rescue and other similar vehicles (a total of 45 Advanced Life Support (ALS) apparatus). It is noted that the current level of stations and apparatus is a reduced level resulting from the closure of Station 33 and the elimination of three fire engines and one ladder truck in the FY 2010-11 budget, and the subsequent addition of five two-person ALS qualified squads⁶. A map of the station locations is provided as Attachment 2. However, with the aforementioned operational profile of service volume, stations and ALS staffed apparatus, for the past 24 months dating back to September 2012, the Department has been unable to achieve the County contract performance goal of responding to 90 percent or more of Code 3 EMS incidents in less than 8:00 minutes.

To determine the extent of the deficiency, we analyzed approximately 89,488 reportable Code 3 EMS incidents that occurred during the July 2012 to April 2014 period⁷. During this period, the Department was on-time for 79,649 responses, or 89.01 percent, and late on 9,839 responses, or 10.99 percent of the Code 3 EMS incidents (Attachment 3). Consequently, during the period, the Department was only 969 on-time responses short of achieving the 90 percent on-time performance goal, as shown in Attachment 4. The performance improvement that was needed to achieve the 90 percent on-time performance goal for the July 2012 to April 2014 period amounted to a reduction in the response time on each of the late responses of only 10 seconds. As shown in

and siren) and reflect the type of call and emergency or non-emergency nature of the call as actually responded to by Fire Department personnel for all calls in which a unit was dispatched. This differs from call data reported by the City in its 2014-15 operating budget, because the budget data reflects projected 9-1-1 call data that includes total number of SJFD emergencies dispatched as well as the type of emergencies that are found upon arrival at the scene. The projected call data provides the estimated number of calls by type of emergency, as well as the estimated number of cancelled calls, false alarms, and uncategorized calls, which would include some combination of fire, medical and other call types as originally dispatched.

⁶ Truck 3 was eliminated. Truck 4 and Truck 18 were relocated to other stations.

⁷ Pursuant to the County contract several categories of incidents recorded by the Fire Department 911 Central Dispatch Center are exceptions and are not reported including incidents in jurisdictions other than San Jose, incidents in which no apparatus is dispatched, incidents that are cancelled in less than 8:00 minutes from the time of dispatch, and incidents that involve mutual aid or that are otherwise excluded by the contract.

Attachment 4, a 10-second response time reduction in each late call would have resulted in an additional 969 on-time responses, and an overall on-time performance of 90.08 percent for the 22-month period.

A separate analysis of late Code 3 EMS responses during this 22-month period, shown as Attachment 5, precisely identifies the hour-of-day on a City-wide basis and the hour-of-day by station that were most problematic relative to achieving on-time Code 3 responses. On a City-wide basis, the highest incidence of late Code 3 EMS calls occurred during the hours of 1 a.m. to 1:59 a.m. and 11 a.m. to 11:59 a.m. On a station basis, Station 5 and Station 2 accounted for the highest number of late Code 3 EMS calls, totaling 721 and 646 late Code 3 responses respectively. The most difficult hour of day for Station 5 was 5 p.m. to 5:59 p.m., and 4 p.m. to 4:59 p.m. for Station 2.

Given the relatively small performance improvement needed, addressing the issues discussed in Section 3 of this report should substantially improve the Department's on-time performance, and enable the Department to comfortably exceed the 90 percent, 8:00-minute performance goal.

3.1 Comprehensive Evaluation of Station Areas of Responsibility

During the course of our visits to each station, interviews with station staff, and examination of first-due station maps, the issue of the optimization of the assigned area or responsibility for each station emerged. Staff in several stations reported that certain locations within their first-due areas of responsibility could not be responded to within 8:00 minutes under any circumstance for a variety of reasons. One reason cited was that property development, street and highway construction, vehicular traffic changes, and population increases have occurred over the years since the first-due geographic boundaries were established for each station, resulting in the efficiency of the current first-due areas of responsibility being less than optimal. When asked if station staff had proposed changes to first-due areas of responsibility, several stations reported that they had in the past, but the process was very long and difficult to achieve even minimal

changes, which discouraged them from submitting future changes⁸. Both station staff and administrative staff reported that some minor changes have occurred over the years, often to deal with specific issues, such as the closure of Station 33 or the construction of new stations, but the last comprehensive City-wide review of first-due areas was reported to have occurred in about 2004. However, a written report of this comprehensive analysis could not be located.

To evaluate the potential for realignment of first-due boundaries in order to improve the overall City-wide efficiency of the system, we analyzed the on-time performance of all 33 stations during the July 2012 to April 2014 period, and compared the performance of each station to the adjacent stations with which a common boundary was shared. During the July 2012 to April 2014 period, the 33 stations had more than 9,000 late EMS Code 3 responses with stations ranging from a low of 5.36 percent late responses to a high of 25.54 percent late responses (Attachment 6). Based on the comparison with adjacent stations, 21 of the 33 stations had an adjacent station with a lower late response rate. On average, stations adjacent to the 21 stations had a 32 percent lower late response rate than the station to which they were compared.

A separate analysis shown in Attachment 12 shows both the on-time percentage rate and the average response time in minutes for each station. This information confirms the potential for making adjustments to first-due areas of responsibility, since nearly all of the adjacent stations listed in Attachment 6 with low late response rates also had significantly lower average response times than did the adjacent stations with a high rate of late responses. The range of average response times ranged from a low of 4.80 minutes at Station 8, to a high of 6.81 minutes at Station 5.

Although there are instances in which boundary changes are limited due to natural barriers such as topography and road characteristics throughout the City, only a zero-base analysis of each station's geographic area of responsibility, combined with current

⁸ At the exit conference, the Fire Department reported that a new streamlined procedure for the submission of proposed changes to station areas of responsibility was implemented about eight months ago. However, based on our interviews with staff at all 33 stations, the general knowledge of the new procedure was not widely understood, as it was not mentioned in any of our interviews. Consequently, this subject should be reinforced with the issuance of a bulletin to all personnel and included in future training.

response time performance, can identify potential opportunities to improve overall Departmental response time, while accounting for all of the factors affecting response timeliness. Therefore, it is recommended that the Department commence a comprehensive review of its first-due areas of responsibility for each station with consideration of the actual Code 3 response timeliness performance of each station in the realignment process. In addition, it is recommended that the Department annually conduct an analysis of late Code 3 response rates by station, including a comparison to performance of adjacent stations as shown in Attachment 6, in order to identify and correct performance imbalances in the City-wide EMS system in a timely manner. At the exit conference, the Fire Department provided a summary schedule of its Project Work Plan, which includes 24 projects with timelines out to July 2016, and is provided as Attachment 11. The Department reported that the proposed assessment of response times by station and realignment of areas of responsibility to improve City-wide EMS response times is included in the Departmental Project Work Plan as Project 23 scheduled for completion in the winter of 2015.

3.2 Excessive Number of Second-Due EMS Responses

The Fire Department reported 911 Computer Aided Dispatch (CAD) System data for the July 2012 to April 2014 period included about 88,494 Code 3 EMS responses after excluding responses by non-San Jose entities and San Jose responses to other jurisdictions. An analysis of these Code 3 EMS responses as shown in Attachment 7 determined that 76,431 responses, or 86.4 percent, were first-due responses by the station that was dispatched to respond to the call in their first-due area, and 12,063 responses, or 13.6 percent, were second-due responses by back-up apparatus from other stations.

Of the first-due responses, 69,689 responses, or 91.18 percent were timely, and only 6,742 responses, or 8.82 percent were late. By comparison, only 9,304 responses, or 77.13 percent of the second-due responses were on time, and the remaining 2,759 responses, or 22.87, percent were late. Therefore, the likelihood of a late Code 3 EMS response is about 2.6 times greater when a second-due station responds to a call than when the first-due station responds. We also compared the late response rate of one-unit stations,

(which are more likely to require a second-due response than is a two-unit station), to two-unit stations as shown in Attachment 8. During the July 2012 to April 2014 period, one-unit stations accounted for 4,850 late EMS Code 3 responses, 1,945 of which, or 40 percent were second-due units. By comparison two-unit stations accounted for 4,651 late EMS Code 3 responses, only 814 of which, or 18 percent, were second-due units. Consequently, responses by second-due units are nearly 2.6 times more likely to be late, and the 21 one-unit stations are 2.2 times more likely to require a second-due response than is a two-unit station.

To obtain some comparative performance data regarding second-due response rates in other fire departments, we surveyed the departments included in our previously described survey included as Attachment 1. Although comprehensive data was not regularly developed in all of the cities surveyed, the cities that had information available and that dispatch EMS apparatus based on assigned areas of responsibility for each station provided the following information:

Table 1
Rate of EMS Responses by Second-Due Station
For San Jose Fire Department and Other Selected Departments

<u>City</u>	<u>Estimated 2nd Due Response Rate</u>
Fresno**	25.0%
Santa Clara	14.0%
County Fire District Cities*	8.1%
Sunnyvale	5.0%
Morgan Hill	3.0%
Sacramento	3.0%
Average Excluding San Jose	9.7%
Average Excluding San Jose and Fresno	6.6%
San Jose	13.6%

*The County of Santa Clara Fire District serves the cities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno and Saratoga.

**The written response of the San Jose Fire Department suggests that the City of Fresno is not an appropriate department for comparison purposes, since Fresno firefighters do not render advanced life support services. The Fresno Fire Department reports that it responds to more than 20,000 EMS calls annually and is usually first on the scene. Its firefighters provide basic life support services. Advanced life support services and transport is provided by

the County through an ambulance contract. Nevertheless, the purpose of Table 1 is to provide some perspective on the extent of second due responses by other fire departments that provide EMS responses. As Table 1 illustrates, the City of San Jose's 13.6 percent second due response rate is approximately twice that of the average of the comparison cities when San Jose and Fresno are excluded.

The City of Fresno reported the highest second-due response rate of all the surveyed fire departments and explained that the high rate was due to severe budget cuts during the Great Recession that resulted in the elimination of the second apparatus at all two-apparatus stations. Fresno staff also reported that its EMS response time goal is 6:20 minutes from receipt of call to arrival on scene, but did not provide any actual fractal performance data. Two other cities that dispatch based on the nearest available vehicle methodology, San Diego and Long Beach, did not provide second-due response rate data, but did report their EMS response time goals to be 7:30 minutes and 6:30 minutes respectively. Nevertheless, based on the data above, the rate of second-due responses in the City of San Jose is high, exceeding the two average rates shown above, which range from about 6.6 percent to 9.7 percent. Because of the high percentage of San Jose second-due responses that are late, which was 22.87 percent versus only 8.82 percent of first-due responses, the City should focus on operational and resource options to improve its overall Code 3 EMS on-time performance.

Since the Department was only 969 on-time responses short of attaining the 90 percent less than 8:00 minute goal, and since second-due responses accounted for 2,759 late Code 3 EMS responses (22.87 percent of 12,063 total second-due responses), a reduction of 969 second-due late responses, to 1,790, could be achieved by reducing the 13.6 percent rate of second-due responses to about 8.8 percent. Second-due responses can be reduced through operational improvements such as more efficiently aligning first-due areas of responsibility (Section 3.1), reducing travel time through greater use of automated traffic signal activation equipment (Section 3.4), use of updated and improved mapping software (Section 3.3), and reduced turnout time where time saving opportunities exist (Section 3.6). Second-due responses could also be reduced through deployment of additional ALS units (engine, truck or squad) to existing one-unit stations such as Station 3 and Station 5, which on a combined basis accounted for 733 late Code 3 EMS responses from just those two stations.

3.3 Providing New Routing Tools

A key step for firefighters in responding to emergency medical services calls is determining the fastest route to the call. Normally when firefighters receive a call, they get the location of the call, either a street address or a street location, and a map grid designation for the call location, via a hard-copy incident dispatch printout at the fire station. Firefighters have three formal resources to use in determining the fastest route to the call, as follows:

Mobile Data Computers (MDCs)-These mobile computers, inherited from the Police Department and installed in all fire engines and trucks, have a mapping function that provides a suggested route to the call, based on the call location provided via the computer-assisted-dispatching system, which transmits information on the call automatically to the MDC. The map function also tracks the vehicle's progress to the call, using locations derived from the wireless radio contact between the vehicle and Fire Department dispatchers.

Lynx maps-All fire stations have laminated maps in sections for the entire city. Stations will often post a copy of the map showing their first-due area in a location close to the printer where incoming call information is received, and will also carry a copy of the map for their first-due area, and for the most commonly served second-due areas, in their fire engine or truck. Lynx maps are named for Lynx Technologies, a GIS applications and development company in Santa Cruz, which includes the San Jose Fire Department among its clients.

Run cards-All stations maintain file cabinets or other storage containing run cards. A run card typically would be provided for each street served by a fire station in its first-due area. One side of the card provides a portion of a Lynx map or other printed map, showing the preferred route from the fire station to the street in question. The other side of the card typically has a more detailed drawing or description of the street, showing the street numbers for properties along that street, fire hydrant locations, and other key information. Run cards are typically maintained by firefighters in each station as part of their duties when

they are not responding to calls. These run card detailed maps are generally hand drawn by firefighters and vary substantially in format and quality, depending on the mechanical drawing skills of the firefighters.

In interviews, firefighters described problems with all three of these tools. The MDCs are antiquated, and the mapping function does not indicate which direction the vehicle is traveling in en-route to a call, which makes it difficult to determine from the on-screen map which way to turn when necessary. Also, for some portions of the first-due area for some stations, the tracking of the vehicle is slow, so that the on-screen map shows the vehicle being a block or more behind its actual location. Also, the devices do not function in some outlying areas served by some stations, due to poor wireless connectivity. In these instances, firefighters must resort to Lynx maps, run cards or personal smart phones. Also, the data on which the on-screen maps are based has not been updated to reflect new development. The mapping system is also not very user friendly, in terms of its graphics or ability to be configured for use by firefighters during a call. Very few firefighters said they used this tool, the exception being a few captains who work at many different stations, and said they used it because it was a consistent tool from station to station, when they were working in an unfamiliar area. Most staff reported that the Lynx maps provide a better immediate area-wide orientation as to the direction they are going and the location of the incident.

Datedness was also a problem with the Lynx maps. In our interviews and tours, we confirmed that the most current such map we found for any station was from 2006. However, many were using 2003 or older maps. Firefighters said up to that point, updated maps were provided on a regular basis, but no new maps have been provided since then, which they believed was a budget-saving measure. Firefighters said they had taken to amending the existing maps on their own for new development, when they became aware of it, and tended to use run cards in conjunction with Lynx maps, when the run cards were more up to date. As a result of the length of time that has passed since new maps were provided, firefighters reported that when the map showing their first-due area becomes too torn or worn to use, they will seek another copy of the map from another station in another part of the City, that infrequently uses that map, so they have a less worn copy. Such exchanges were reported by nearly every

station, as an attempt to stretch the existing mapping resources as needed to respond to calls. Firefighters also reported that the Lynx maps are difficult to read at night, when the vehicle is traveling along a bumpy road, or in areas that have many small streets, because of the scale at which the map is drawn.

As a result of these shortfalls, most stations continue to use run cards, with some using them only to supplement Lynx maps, while others use them as the primary source of routing information. One station reported keeping a set of mini-run cards, in the form of index cards showing each street in their first-due area, its cross streets, and the chosen route to that street, in their vehicle to be consulted en-route to the call. However, maintaining run cards takes a significant amount of time for firefighters. Firefighters at one station, which moved to a new location several years ago, reported that run cards have not yet been updated to account for the new station location. Other stations reported using primarily Lynx maps, not run cards, to determine routes, and did not focus on keeping their run cards up to date.

Further exacerbating problems with dated mapping resources are changes in development patterns in San Jose, from single-family-home developments to large condominium, apartment or townhome projects, with multiple buildings with multiple addresses in each building, and non-public internal streets. Firefighters in several stations reported obtaining “complex maps” from the owners or managers of such developments, showing the internal streets and allowing firefighters to determine the quickest way in to a particular address. These more detailed complex maps are maintained in binders on the apparatus for each station. As a result, second-due units that back up first due units that are unavailable, often do not have access to complex maps in their second-due areas, potentially resulting in longer response times.

As a result of the limitations of the existing routing resources, many firefighters reported obtaining their own supplementary sources, outside what the department formally provides. The primary one of these is using personal smart phones or tablets and the application Pulse Point. Pulse Point, implemented in San Jose in 2012, is actually an application developed to let appropriately trained citizens to respond to reports of sudden cardiac arrest, through a notification received from the Fire

Department dispatch system, and assist by providing automated external defibrillation and other first aid. However, because the Pulse Point application also provides a map showing the location of calls, firefighters are using it to pinpoint both medical calls and fires, to assist them in determining the fastest route to these locations. Firefighters at virtually every station reported doing so, and some also said they are using Google Maps and other applications to supplement the official routing resources. Use of these on-line mapping resources is also necessary when a station is responding to a mutual aid call out of the City limits, since the MDC on-board computers do not include mapping information within adjacent cities.

These limitations in routing resources potentially add time to the response to emergency medical services calls, particularly when the driver of the fire engine or truck is not familiar with the station they're working at, and also don't have an experienced captain at the station to help direct them to a call. Numerous situations occur daily when drivers and/or captains are working a shift at a station that is not their permanent assignment, due to vacation relief, sick leave, staff turnover and promotions. Consequently, the risk of longer response times is increased on calls responded to by units unfamiliar with the area, utilizing substandard mapping resources.

Accordingly, improvements need to be made to the available mapping and routing resources. Most immediately, updated maps should be obtained, from Lynx Technologies, or another source, to provide all stations current maps to use on duty. One firefighter said his understanding is that the City's Public Works Department has access to a geographic information system developed by Esri, based in Redlands, CA, which could be used to develop more current maps. We have confirmed that the City has access to the product, and note that an Esri publication, *GIS for the Fire Service*, includes development of maps and run books, similar to run cards, among the functions its software can provide. We also note that the Department recently hired a geographic information specialist, who should be assigned immediately to begin updating the maps used by firefighters.

During the exit conference for this audit, Fire Department management confirmed that the newly-hired geographic information specialist had been assigned the task of

creating updated maps, working with information available from the City's Department of Transportation. Although Department management wasn't certain of this, we believe that this work will most likely use the Esri system, which we believe is being used in the Department of Transportation. Management also indicated that an update to the City's computer assisted dispatching system scheduled for 2016 may also improve the performance of the mapping function included as part of the MDC units provided on vehicles, and will definitely make it easier to update mapping information on that system for new development or other changes, as well as possibly allowing mapping information to be entered into the system for areas outside San Jose to which units sometimes respond.

Beyond this immediate solution, the Department also needs to develop an alternative to the on-board mobile data computers now provided in its vehicles, which have several weaknesses identified here and elsewhere in this report. One firefighter suggested: "Just give us an iPad with Pulse Point and a couple of other apps (applications)."

An Internet search showed that many fire departments are using more modern technology than San Jose. For example:

- Central County Fire Department uses iPads and iPhones to serve the Burlingame/Hillsborough area in the County of San Mateo. The department developed its own application, called CAD, which displays each word spoken and each keystroke typed by dispatchers during calls. They also use an application called Find My Friends to track the location of other engine companies when en-route to a call.
- The City of Redding recently purchased nine iPads using a grant, one per fire station, and is having call information sent right to the devices, using iMaps to identify routes, in conjunction with a city-designed map program that allows firefighters to see where they're going. The Coastside Fire Protection District in Half Moon Bay has also implemented use of iPads, and is part of an users group of San Mateo County fire departments in the County of San Mateo that are sharing information on how best to use the technology.

- The Bedford, New Hampshire and Charlottesville, Virginia fire departments are also using iPads, equipping them with applications specifically developed for firefighters. Bedford is using PublicEye, an application that includes mapping and other firefighting functions. Charlottesville is using Active911, created by an Oregon-based company, which delivers alarm, incident and route information. Active911 is a subscription service where fire departments pay a fee based on the number of users. Charlottesville reports it is paying about \$750 a year for the service.

We recommend that the San Jose Fire Department contact surrounding fire departments to identify potential alternatives to the existing on-board MDC system, and develop a plan to implement an up-to-date alternative system for consideration by the City Council.

3.4 Improving Travel Time Via Infrastructure

The Fire Department's targeted response time under its EMS agreement with the County is to reach 90 percent of lights-and-siren calls within eight minutes. Based on the Department's goal of getting fire engines or trucks en-route to such calls in two minutes or less after the call is received from dispatchers, up to 75 percent of the time spent to arrive at the emergency scene on time is travel time from the station or wherever the call is received, to the medical call location.

A variety of factors can affect travel time, according to comments from firefighters obtained for this study, including:

- Distance to the call;
- Terrain en-route to the call, because hills tend to slow down the vehicles;
- Traffic congestion on the route;
- Pavement conditions on the route, because bumpy streets require slower speeds, and;

- Narrow streets, or streets congested by parked cars, which also slow down fire vehicles.

Firefighters interviewed said one key item that would assist in dealing with traffic congestion on medical call routes is greater deployment of traffic signal preemption devices, which are infrared devices that automatically change traffic signals from red to green for an approaching fire vehicle, correspondingly changing cross-traffic signals to red, and permitting fire vehicles to more quickly get through intersections without fear of collisions. The system is known colloquially to firefighters as the Opticom system, after the trade name for the equipment, sold by Global Traffic Technologies, that is generally used in San Jose.

The system uses an “emitter” mounted on the front of the fire vehicle, which transmits a secure signal to a “detector” at the signalized intersection, which then relays the request to the traffic signal controller equipment at the intersection, changing the signal to green for the fire vehicle. This system operates automatically, without firefighters aboard the vehicle having to push a button or take any other action.

Based on the comments received from firefighters, we requested information from the City on the extent of installation of these devices at signalized intersections. We received a map from the City’s Department of Transportation showing signals it believes have this equipment, those that do not, signals that are within the City but are controlled by other agencies. and sites of future traffic signals which are scheduled to include installation of signal-preemption equipment. City staff stated they do not know the status of signal preemption equipment at intersections controlled by other agencies.

We counted the signals in each category for the first-due area in each fire station (Stations 8 and 34 were not distinguished separately on the map, so we counted their signals together). Our count showed that slightly less than one-third of City traffic signals, based on the map, had this equipment installed. The largest number of equipped intersections was 36, for Station 1 in downtown San Jose. Other high-volume stations, including Station 2, combined Stations 8 and 34 and Station 30, had high numbers of intersections with preemption equipment installed. Only Station 28, which

serves the southern tip of the City, had no intersections with signal-preemption equipment.

Based on our interviews, it is not precisely clear how the intersections that have this equipment installed were selected, relative to station requests. Staff at several stations reported that at one point, each station was told it could identify up to three intersections in its first-due area for installation of this equipment. Command staff present for some of the interviews also said they understood that the equipment was also installed along significant bus and light-rail routes in the City. Based on the prevalence of signal-preemption-equipped intersections along Capitol Avenue and Santa Clara Street, for example, this appears likely. It also looks like some areas of major commercial development, such as Zanker Road in the north end of the City, may have had the installations as part of development-related street work. Firefighters also reported that in the last two years, they have been asked to identify additional locations for signal-preemption installation, but do not know if any additional work has been completed.

In interviews, firefighters also said that the existing network of signal-preemption equipment needs to be inspected, to make sure they are operating properly. For example, staff at one station, which uses Hostetter Road as a major east-west route to calls, reported that one of the equipped intersections appears to be operating backwards, so that it gives the approaching fire engine a red light, rather than a green one. At another location, the intersection of Montague Expressway and Trade Zone Boulevard in North San Jose, firefighters reported that the signal-preemption equipment on the signal light is oriented such that to trigger it, the engine, making a left turn, actually has to approach the intersection in the right lane, turning partially against traffic. We recommend inspections of existing signal-preemption equipment occur by the Department of Transportation, starting with those identified by firefighters as problematic.

Our review of the map supplied by the City also indicates a valuable role for the County Emergency Medical Services Agency in this process, by assisting the City in getting non-City-controlled intersections outfitted with signal-preemption equipment

where appropriate. For example, several fire stations use Almaden Expressway as a key north-south route, and report having no signal-preemption equipment, to their knowledge, on its intersections. Other stations use Capitol Expressway, and have a similar problem. The expressway system is controlled and maintained by the County Roads and Airports Department. We also asked the County Director of Roads and Airports about the existence of signal-preemption equipment on the expressway system, and he also said to his knowledge, none had been installed. We recommend that the Agency work with the San Jose Fire Department in identifying expressway intersections where such equipment would be useful, and approach Roads to implement such a project.

We further recommend that the City take steps to expand the installation of signal-preemption equipment to additional intersections in San Jose where it is warranted. The City should start this process using the list of additional intersections provided by firefighters in the last two to three years, according to our interviews. However, we recommend that the City prioritize that list Citywide, based on the stations with the highest call volumes, stations with the longest distances to respond in their first-due area, or other key criteria, rather than spreading new signal-preemption equipment installations equally among all stations. By prioritizing in this way, the impact of new installations on response time will be maximized.

During the exit conference for this audit, Fire Department management staff reported that expansion of signal-preemption equipment was among the projects included in a work plan to improve response time submitted to the Mayor and City Council on September 30, 2014. They said the expectation was to use a different equipment provider, EMTRAC Systems, which they said is the equipment currently used by the Valley Transportation Authority for buses. However, staff also reported that it expects upgrading and expanding this system to cost several million dollars, which is not currently available in the City's budget. Staff also said they would welcome County assistance in planning and financing additions of signal-preemption equipment to the County expressway system.

In addition, to traffic-signal preemption installations, we noted one other area of traffic signal control that may be appropriate for expansion. Station 23, because of its location on Capitol Avenue, a busy street that was also divided by light rail tracks, has been provided a signal control inside the station, for the traffic signal in front of it. Before leaving the station, firefighters press a button inside, which gives them a green light at the intersection of Via Cinco de Mayo and Capitol Avenue, where the station is located. Firefighters said this feature was provided to enable the fire engine to exit the station in heavy cross-traffic at this location. We recommend that additional existing stations, located on major thoroughfares, be considered for this feature. Stations we think may be appropriate for this addition include Station 22, near Almaden Road and Camden Avenue, Station 18 at Monterey Road and Branham Lane, Station 2 on Alum Rock Avenue, and Station 10 on South Monroe Street, which is near the extremely busy intersection of Highways 17 and 280, and Stevens Creek Boulevard. We note that the latter two changes probably would require cooperation with State officials, because Alum Rock Avenue is a State road, and because Highways 17 and 280 are both State maintained.

In addition to traffic signal control, we identified three other street-related issues in our interviews. The first was basic pavement maintenance. Firefighters at numerous stations, particularly those serving hillside areas of the City, reported that pavement conditions require them to travel at less than top speed to calls, because potholes and other street damage require lower speeds to control the vehicle, and to keep firefighters from bouncing in their seats, which creates risk of injuries from concussions, by hitting their heads in fire vehicle cabins, or whiplash from excessive neck movement.

The City is generally aware of its pavement problems, as an October 2013 report to a Council committee noted that funding is available for only about one-third of the City's estimated annual street maintenance requirements, and the backlog of one-time rehabilitation needs was expected to reach \$400 million in 2014. Realizing this, we would simply recommend that in prioritizing pavement repairs, the needs of firefighters for smooth surfaces on key access routes be considered.

A second issue we identified is street design, particularly installation of median islands that separate traffic going in opposite directions. The difficulty that such medians create, if they are overly long and don't provide breaks, is that they prevent firefighters from occasionally crossing into opposing lanes, when it is safe to do so, in order to get through congested intersections and to stay in motion when en-route to calls. During our interviews, we accompanied fire crews on calls on several occasions. One call, with Station 17, required traveling down Blossom Hill Road to the far western end of its first-due area, using turn lanes and crossing the median a couple of times to get through intersections. Response time on this call totaled 6:54, with the engine traveling at a constant speed and never held up. This indicates that any significant street back-up would have prevented meeting the eight-minute standard for this call. The City should avoid long median islands and other features on streets that are identified by firefighters as major access routes, or should design such features with breaks that can be used by fire engines to cross into opposing lanes when safe to do so for the purpose of arriving at calls as quickly as possible.

Finally, firefighters at several stations serving hillside areas of the City reported difficulties accessing small streets where San Jose Police do not enforce parking restrictions. This was identified as a problem in steep areas where, in some cases, streets are developed in a tiered manner, with two one-lane sections in opposite directions, separated by a slope. Because such streets are very narrow, many prohibit on-street parking, according to firefighters, but the restrictions are not enforced by police, primarily because of homeowner complaints. As a result, firefighters report situations where they must respond to medical calls partially on foot, because a fire engine is blocked by parked cars. Management staff of the Fire Department should meet with their Police Department counterparts, identify such situations, and have such parking restrictions enforced. We recommend that when firefighters encounter a situation where they are blocked from responding by parked vehicles, all homeowners in the area should receive a notice reporting the incident, and the danger that failing to observe parking restrictions creates, in hopes of obtaining voluntary compliance.

3.5 Failure to Account For and Report Specifically Excludable Incidents Pursuant to Section V.E of Annex B of the County Contract

The Emergency Medical Services contract between the County of Santa Clara and the City of San Jose provides for the payment of First Responder Funds to the City in the annual amount of \$1,839,174 beginning in FY 2012-13 and continuing at that level annually for the five years of the agreement. However, payment of these monies is contingent upon the City achieving a minimum performance standard on EMS Code 3 responses of 90 percent on the scene of the incident in 7:59 or less, and on EMS Code 2 responses of 90 percent on the scene of the incident in 12:59 or less, with certain response time exceptions and exemption requests permitted in calculating the monthly response time performance results. Although the County contract specifically provides for numerous exceptions for various types of EMS incidents, during the period of this review (July 2012 through April 2014, the City did not track and separately report several categories of incidents that are excludable from the 7:59 minute Code 3 and 12:59 minute Code 2 performance goals specified in the contract. Rather, the City reported incidents in Suburban, Rural/Wilderness and Hard-to-Serve areas with the Urban areas that are subject to the 7:59 minute and 12:59 minute Code 3 and Code 2 goals. By not separately reporting these incidents as provide for in the contract, the City understated its actual performance under the contract. These contract exceptions are described as follows:

- 1) Incidents in Suburban areas of the City, defined as areas with a population ranging from 51 to 100 per square mile. An on-time Code 3 EMS response in a Suburban area is 9:59 or less, and Code 2 is 14:59 or less.
- 2) Incidents in Rural/Wilderness areas of the City, defined as areas with a population of 50 or fewer residents per square mile. An on-time Code 3 EMS response in a Rural/Wilderness area is 11:59 or less, and Code 2 is 21:59 or less.
- 3) Incidents in established Hard to Serve areas as identified in County EMS Policy 830, to the extent that such areas are not included in 1) and 2) above.

- 4) Unusual factors beyond the City's reasonable control, for which the provider may request exemption from the response time calculations by providing the County with detailed written documentation explaining the basis for the requested exemption, including:
 - a. Equipment Failures
 - b. Traffic Congestion
 - c. Unit Mechanical Failures

During the course of our interviews with staff at the 33 stations, we were advised that the Fire Department's operational software, "Firehouse," reportedly had a field for each station to report exceptional circumstances that caused untimely responses. However, in the most recent update of the Firehouse software, the incident reporting field was deactivated resulting in the Department no longer capturing this information on a daily Department-wide basis. Consequently, the Department should reactivate the incident reporting field in Firehouse and direct all stations to again report circumstances that meet the County criteria for exemption from the response time calculations so that they can be included as requested exemptions in the City's monthly report to County EMS.

At the exit conference, the Department reported that in about May or June 2014 it began claiming exceptions as permitted by the County contract and that it would reactivate the field in the "Firehouse" software that permits stations to report information pertaining to late responses that would facilitate the monthly reporting of such information to County EMS. Such reporting would include instances when the Fire Department had completed its EMS work at the scene of an incident, but was detained due to the absence of an ambulance to provide the patient transport. In such instances, the unavailability of a unit while waiting for an ambulance may result in an untimely response by the Department if an additional call is received by the station that must be responded to by a second-due unit from another station. The Department reported that it believes units having to wait for an ambulance to be a frequent problem, however, insufficient data had been compiled to quantify the extent of the problem. Reactivation of the station incident reporting field in "Firehouse" will enable such quantification.

3.6 No Monthly Performance Reports of Response Timeliness are Posted in Stations to Inform the Staff Who are Responsible to Execute the EMS Program

Although the City entered into the First Responder contract with the County on June 30, 2011, and although the success of the City's performance pursuant to the conditions of the contract was contingent upon the professional firefighter staff at the 33 fire stations achieving a higher EMS response time standard of service (90 percent) than the City's 80 percent goal, staff at the fire stations had very little knowledge of the specific performance related terms and conditions of the contract, such as the maximum liquidated damages cost to the City for each late EMS response is up to \$7,500 per incident. When asked about monthly operational performance data for each individual station, the shifts at each station, and the 33 stations throughout the City, station staff routinely responded that such performance information was available in the Firehouse system, but that it was difficult to access and time consuming. No station reported receiving monthly response time performance data regarding turnout time by station or shift or for any of the other 32 stations, nor did they receive overall response time performance data for Code 3 or Code 2 responses by each station or on a City-wide basis.

Consequently, it is incongruent to commit to higher EMS performance standards for the professional staff, who must achieve the higher level of performance, without involving the staff in a thorough and comprehensive manner to ensure that they: (1) understand and accept the higher performance goal agreed to by the City and the County, and (2) are provided actual performance data monthly by station and shift to enable them to analyze and evaluate their performance and strive to make any operational changes necessary to improve performance. Attachments 3 and 9 are suggested monthly reports and provide the following information:

Attachment 3 shows monthly response time performance on all Code 3 EMS responses by station, including the total number of responses in the prior month, the number on-time, the number late and the percentage of on-time and late responses for the month. Attachment 3 presents this information in two tables, including one in station number

order and the second ranked by on-time percentage from highest to lowest for the month.

Attachment 9 shows monthly turnout time performance on all Code 3 EMS responses by station, including the total number of responses in the prior month, and the average turnout time by each shift at each station, and the overall average turnout time for the station for the month. Attachment 9 presents this information in two tables, including one in station number order and the second ranked by average station turnout time from lowest to highest for the month.

3.7 Monitoring and Optimizing Turnout Time Which Accounts for Two Minutes of the 7:59 or Less Code 3 EMS Response Time Goal of the County Contract

Pursuant to the EMS First Responder contract with the County, the Code 3 EMS response time goal is 7:59 minutes, or less. The Department measures response time for County contract purposes in two components:

- (1) Turnout Time, which is the time from the Station's receipt of an EMS dispatch communication to the time the responding station apparatus leaves the station. By Department policy, the turnout time standard is 2:00 minutes.

- (2) Travel Time, which is the time from the apparatus leaving the station until it arrives at the scene of the incident (dispatched location).

Responding apparatus have minimal control over travel time due to the many external variables beyond the control of the Department, such as the distance to the dispatched location, traffic conditions, availability of pre-emption equipped traffic signals at intersections, road construction, traffic accidents, accuracy of reported incident location, access to the locations requiring police security, etc. However, each fire station has more control over its turnout time, since each station uses a protocol for assembling at the apparatus following receipt of an EMS dispatch.

All of the stations follow a generally similar process of dressing if a dispatch is received during sleeping hours, proceeding to the engine, truck or other apparatus, grabbing the hard copy dispatch document off the printer, pulling a run card in most stations, boarding the apparatus, selecting the proper Lynx map from the station to the incident, opening the MDC computer, pressing the Route to Incident button on the computer, and pressing the en-route button upon exiting the station. However, due to the significantly varying design and size of the 33 stations, turnout time is impacted. As an example, some stations occupy locations as large as an acre, while some are only a few thousand square feet, and some are only one story, while another is three stories and many are two stories. Further, some stations have more compact and central dormitory sleeping quarters, while others are spread out down a long hallway of individual rooms. Nevertheless, turnout time is a factor that each station and each shift works to perform efficiently for their specific station, but without regular feedback on actual performance, turnout time performance is just a general goal. However, if monthly turnout time reports were provided for each shift at each station, such reports would lead to analysis of high and low times with the objective of achieving consistent efficient turnout times by each shift at each station. The Department reported that such a report will be implemented by approximately November 1, 2014.

During our review of turnout times with some of the stations, it was determined that some of the turnout times that were reported as significantly above the 2:00 minute Department standard in the CAD system data for the July 2012 to April 2014 period, were actually instances when station staff pressed the en-route button on the MDC computer upon exiting the station, but the computer did not register the event. Subsequently, staff reported that it was contacted by the Central Communications Fire Dispatch to determine if the unit had left the station yet, at which time they were near or already at the scene. In order to increase the accuracy and consistency of the en-route time recorded in the City's CAD system and reported to the County, it is recommended that the City explore the feasibility of recording as the en-route time the time the apparatus is identified as moving out of the station using the automatic location equipment on each vehicle, following the dispatch. If the apparatus is dispatched while in the field, the manual depressing of the en-route button may be necessary for such incidents.

To evaluate actual turnout time performance by the 99 shifts at the 33 stations, we analyzed more than 75,000 EMS Code 3 incidents that were responded to by apparatus assigned to each specific station. The table on the left side of Attachment 9 shows the results of this analysis in station-number order, while the table on the right side of Attachment 9 shows the results based on the average station turnout time ranked from fastest to slowest. Attachment 9 shows that Station 28 had the fastest turnout time during the 22-month review period with an average of only 1:11 minutes. However, since Station 28 is a very low volume station, Station 18, which ranked fourth fastest of the 33 stations, is a better example of a station with a low turnout time. It had an average turnout time of only 1:18 minutes, while also being one of the busiest stations in the City with more than 4,100 EMS incidents between July 2012 and April 2014. On an overall basis, 15 stations averaged between 1:30 minutes and 1:51 minutes, which was 12 seconds to 33 seconds longer than Station 18. Since the City's EMS Code 3 responses during this 22-month period were only 10 seconds on average above the 90 percent goal, providing turnout time monthly reports to each station can only help the Department to improve its system-wide EMS response time by giving each station the information it needs to analyze and fine tune its turnout procedures.

3.8 Impact of 9-1-1 Abuse on EMS Call Volumes and Late Responses

As described in Section 3.2 of this report, our analysis of about 89,517 Code 3 emergency medical services responses from July 2012 to April 2014 found 13.6 percent of calls answered by a fire station other than the first-due station for the call location. The analysis further found that such calls were a primary contributor to failing to meet response time standards, because firefighters were late to such calls about three times as often as to calls when the first-due station was responding.

In our interviews with firefighters, a frequently cited problem was situations where firefighters are ordered to respond Code 3 (lights-and-siren) to a medical situation that, when they arrive, does not turn out to be a true medical emergency. Firefighters identified three situations where this regularly occurs:

- Responses to convalescent homes, assisted living facilities, and other congregate care facilities for the elderly. Most often, firefighters said, these calls turn out to be a situation where a patient has fallen, is not seriously injured, and assistance is being requested to get them off the ground. There are also situations where firefighters are called because a particular reading on a patient's monitor changes in an adverse way, and firefighters are called, even though the monitor is reporting normally by the time they arrive. According to firefighters, such facilities call firefighters, rather than relying on facility staff to assist elderly clients, because of liability concerns.
- Responses to individuals, often homeless people, who are frequent users of 9-1-1 services, or whose behavior results in other citizens calling 9-1-1 on their behalf. For example, three different fire stations, when asked in general about this problem, identified the same individual as a frequent subject of 9-1-1 calls. They said the individual, who lives on the street near Valley Medical Center, exhibits jerky movements when sleeping, leading passing motorists or pedestrians to think a seizure is occurring, and leading them to call 9-1-1 as a result, even though no actual medical emergency exists. Other such calls represent individuals who want transportation to a hospital emergency room for routine medical care, or simply a place to stay that is indoors, and know the information to provide to a dispatcher that will result in firefighters being sent.
- Responses to County facilities, including the Main Jail on Hedding Street, portions of the Valley Medical Center campus, and other County medical facilities. Firefighters said these calls frequently turn out to be situations where ambulance transport is needed, on a non-emergency basis, but 9-1-1 is being called to get it, rather than arranging for the transportation separately. Firefighters do not believe that 9-1-1 calls in such situations are justified, given that these facilities are already staffed with medical personnel. They noted that, for example, ambulance transport is being required when a patient at the outpatient Valley Specialty Center is determined to need hospital admission to the Valley Medical Center inpatient facility, even though the two buildings are

close, and underground tunnels have been built that could permit a patient to be moved via a gurney.

By requiring firefighters to respond to emergency medical services calls that do not represent true medical emergencies, these situations potentially impact on-time performance, by making it less likely the first-due fire station on a true medical emergency will be available to respond, because they are already responding to one of these non-emergency situations.

Analysis of the database of about 89,517 Code 3 emergency medical responses lends credence to firefighters' concerns. We sorted the database by address, and identified locations that had at least 50 or more incidents during the July 2012 through April 2014 period. This period amounts to about 110 weeks, so 50 calls represents a call slightly less than once every two weeks. Such locations included 8,916 calls, or about 9.96 percent of all calls in the database.

Congregate care facilities are a primary source of frequently-visited locations by firefighters, as shown in the following table. It is important to note that we excluded from this table a number of senior-citizen facilities that were apartments or other facilities that provided only independent living arrangements, and therefore were unlikely to represent situations where facility staff, independent of residents, were requesting 9-1-1 assistance. The facilities in the table are convalescent homes, or assisted living facilities, including some facilities that provide care for dementia patients, and therefore have staff that attends to patients.

Table 2

**Congregate Care Facilities With 50 or More EMS Calls
To San Jose Fire Department, July 2012 through April 2014**

<u>Location Name</u>	<u>Address</u>	<u>Number of Calls</u>
Atria Willow Glen	1660 Gaton Drive	265
Carlton Plaza	380 Branham Lane	199
Vintage at Silver Creek	4855 San Felipe Road	193
Amberwood Gardens Conv.	1601 Petersen Avenue	190
Regency of Evergreen Valley	4463 San Felipe Road	189
White Blossom Care Center	1990 Fruitdale Avenue	175
A Grace Subacute & Skilled Care	1250 S. Winchester Blvd.	159
Merrill Gardens at Willow Glen	1420 Curci Drive	147
San Tomas Convalescent	3580 Payne Avenue	103
Vista Manor Convalescent	120 Jose Figueres Avenue	100
Willow Glen Convalescent	1267 Meridian Avenue	100
Chai House	814 St. Elizabeth Drive	88
Lifehouse San Jose	180 N. Jackson Avenue	78
Skyline Convalescent	2065 Forest Avenue	72
Mission De La Casa Convalescent	2501 Alvin Avenue	67
Lincoln Glen Convalescent	2671 Plummer Avenue	66
Westgate Villa	5425 Mayme Avenue	62
Belmont Village	500 S. Winchester Blvd.	59
Mt. Pleasant Convalescent	1355 Clayton Road	55
Almaden Health and Rehabilitation	2065 Los Gatos-Almaden Road	53
Homewood Convalescent	75 N. 13 th Street	<u>51</u>
Total		2,471

Combined these facilities accounted for about 2.76 percent of all calls in the database. To the extent any of these calls were not for true medical emergencies, as suggested by firefighters, reducing them would free up resources to respond to true medical emergencies, thereby improving fire department response time to emergency calls. While it seems logical that facilities with large numbers of elderly residents would be likely to generate more medical calls, because the elderly are more likely to have health

problems, it is important to address any abuse by facility staff, so that firefighters only respond to true medical emergencies.

Our review of the database also found support for firefighters' concern about individuals who may be abusing the 9-1-1 system. We found this support in the large number of repeat calls in the database that were not to structures with defined addresses, but to street locations, which we think are likely to represent responses to homeless residents. These locations include the following:

Table 3

Intersections and Selected Non-Residential Locations With 50 or More EMS Calls To San Jose Fire Department, July 2012 through April 2014

<u>Location</u>	<u>Number of Calls</u>
Parkmoor Avenue/South Bascom Avenue	96
305 South Capitol Avenue	83
George Page Park, 6290 Santa Teresa Blvd.	82
North First Street/East Santa Clara Street	72
South Bascom Avenue/Moorpark Avenue	69
Blossom Hill Road/Snell Avenue	61
Story Road/South King Road	60
Safeway, 1300 West San Carlos Street	66
North Second Street/East Santa Clara	57
7-11, 452 E. Santa Clara Street	57
Wal-Mart, 777 Story Road	<u>54</u>
Total	757

The locations in the table above account for slightly less than 1 percent of all medical calls in the database. In addition to the intersection locations listed, and a couple of street addresses that do not appear to correspond to homes or other facilities that would have a logical reason for large volumes of medical calls, we also have included in this list some locations that had large volumes of medical calls, and were located in parts of San Jose that were likely to have homeless populations. The Safeway listed, for example, is the only grocery store with more than 50 calls in the period examined, and

is located close to downtown San Jose, as is the 7-11, the only convenience store with that volume of medical calls. The Wal-Mart listed is one of three in San Jose, and is located near the homeless encampment along Coyote Creek known as The Jungle.

We note that two of the locations, South Bascom Avenue at both Parkmoor Avenue and Moorpark Avenue, are the area identified by firefighters at three different stations as the residence area of a single individual who is the source of regular 9-1-1 calls by passing motorists or pedestrians. This location alone accounted for 165 medical calls during the period reviewed.

To reiterate, many of these calls may represent legitimate medical emergencies. But according to firefighters, many do not, and finding a way to eliminate such calls would free up resources to respond to legitimate medical emergencies. We noted that other locations frequented by the homeless, including at least four homeless shelters or intake centers, and two drug- and alcohol-treatment facilities, also appeared on the list of frequently-responded to locations. Firefighters did not cite such facilities as an additional source of unnecessary 9-1-1 calls, so we did not include them on this list, although it is possible that such facilities, if telephone use is not controlled by facility staff, could also be the source of unneeded responses.

Lastly, our review of the database found numerous instances of 9-1-1 medical calls to governmental facilities that may have some level of medical care capabilities. These facilities are shown in the following table:

Table 4

**Governmental Institutional Facilities With 50 or More EMS Calls
To San Jose Fire Department, July 2012 Through April 2014**

<u>Facility Name/Location</u>	<u>Number of Calls</u>
Main Jail North, 150 W. Hedding Street	528
Valley Medical Center, 751 S. Bascom Avenue	221
East Valley Clinic, 1993 McKee Road	139
Valley Health Center, 2400 Moorpark Avenue	128
VMC Renal Care Center, 2220 Moorpark Avenue	86
VA San Jose Clinic, 80 Great Oaks Boulevard	84
Don Lowe Pavilion, 871 Enborg Court	70
Valley Health Center, 500 Tully Road	<u>62</u>
Total	1,318

These facilities account for a combined total of about 1.4 percent of all calls in the database. Main Jail North, which includes 24-hour nursing staff, and doctors on site during weekday working hours, by itself accounted for an average of nearly five calls per week during the period reviewed.

We also identified 221 calls to Valley Medical Center, or to its address, 751 S. Bascom Avenue. However, the Chief Executive Officer for Valley Medical Center said for the inpatient hospital itself to be calling 9-1-1 for assistance would violate regulations under which the hospital operates. He said he believes the calls came from other locations on the hospital campus, most likely Valley Specialty Center, which provides outpatient clinics in various specialties in a five-story building adjacent to the main hospital on the VMC campus. This suggestion matches comments from firefighters, who also said Valley Specialty Center was a primary source of calls to which they were dispatched. Dispatch records also identified three other locations frequently responded to on the campus, including an outpatient community health clinic, a dialysis center and a mental health facility. Calls on the VMC campus accounted for 505 calls during the period reviewed. Outside the campus, there were also frequently responses to community clinics operated by the County and a U.S. Veterans Administration clinic.

All these locations are sites where medical staff should be available to respond to medical emergencies. To the extent these calls represented the practice identified by firefighters of using a 9-1-1 call to obtain ambulance transport of patients from one location to another within the Valley Medical Center campus, this is an inefficient use of 9-1-1 resources, which could result in a delayed response to a true medical emergency of another person elsewhere in the City.

In response to a request by Management Audit staff for any policies related to calls to 9-1-1 from within the Valley Medical Center campus, we received two documents.

One was a policy for Valley Specialty Center, which provides outpatient clinics in various specialties in a five-story building on the VMC campus. The Valley Specialty Center policy primarily addresses formation and use of a Rapid Response Team of advanced cardiac nurses and a respiratory therapist to respond to a patient that “requires more advanced invasive assessment and management.” The policy includes criteria for use of the team that includes deterioration of vital signs, respiratory distress, stroke symptoms, chest pain unrelieved by rest and oxygen or loss of consciousness. The policy indicates that treatments the team can provide include cardio-pulmonary resuscitation, heart defibrillation, heart monitoring via an electrocardiogram, intravenous infusion of fluids, oxygen administration and breathing treatments, and administration of emergency medications.

These are all treatments that first-responder firefighters would also provide when responding to a 9-1-1 call. However, firefighter paramedics also provide additional treatments beyond those specified for the Rapid Response Team. These Advanced Life Support treatments in particular include intubation or other steps to provide a clear airway for a patient, needle decompression treatment for a collapsed lung or intraosseous infusion into bone marrow when standard intravenous access is not possible.

The policy also states: “Each clinic will be responsible to call 911 should it be determined that the emergency will require a higher level of care requiring

transportation to an Emergency Department.” It also states that transportation to the Emergency Department will be by ambulance only. Staff who provided the policy stated that this is necessary because the Valley Specialty Center is specifically licensed as an outpatient facility. During a visit to the VMC campus, we confirmed that there is a basement-level connection between the Valley Specialty Center and the main hospital building, as firefighters reported, via which patients could be transported by gurney. However, this trip would be lengthy, as the current emergency room is on the opposite side of the hospital from Valley Specialty Center, and two one-floor elevator trips would also be required.

We also received medical screening and triage and 9-1-1 response policies for Emergency Psychiatric Services (EPS), which operates a 24-hour psychiatric emergency room in Don Lowe Pavilion, a separate building on the Valley Medical Center campus which was site for 70-Fire Department responses during the period reviewed. This building does not have indoor access to the main hospital buildings. This policy requires EPS staff to call 9-1-1 when they discover a patient in distress, including not breathing, no pulse, etc. Staff are instructed to bring an emergency cart and oxygen to the patient, initial cardio-pulmonary resuscitation and to provide automated external defibrillation if the patient has no pulse. Staff also is instructed to contact the Valley Medical Center Emergency Department to advise them of the situation and the pending transport of the patient to the Emergency Room.

This policy provides for staff to provide treatment in emergency situations that is less than what Valley Specialty Center’s Rapid Response Team provides, which is in turn much of, but not all of, the care a firefighter paramedic could provide.

Based on the information on the policies provided, including the list of treatments provided by the Rapid Response Team and the EPS staff, we believe it likely, as firefighters indicated, that many of the 9-1-1 calls coming from the VMC campus do not require first-responder treatment for patients, but only ambulance transport. In the case of Valley Specialty Center, we recommend that Valley Medical Center management assess whether it would be faster to transport patients by gurney using the basement-level access between the two buildings, and whether regulations under which the

Center operates would permit this, or whether a waiver could be sought to such regulations for this purpose.⁹

We also recommend that Valley Medical Center management staff, Fire Department management staff, County Communications management staff, and County Emergency Medical Services Agency staff work together to develop additional triaging procedures for calls coming from the Valley Medical Center campus. Those additional procedures should be focused on identifying situations where firefighter paramedics are not needed to provide treatment to patients on the VMC campus, but ambulance transport within the VMC campus is necessary. In those situations, firefighters would not need to respond, but the ambulance provider would. To enhance this addition to the triaging process, 9-1-1 phone calls from the hospital campus should go to the County Communications dispatch center, rather than to the San Jose Police Department dispatch center, and County Communications should conduct triage of calls from the campus to determine whether first-responder medical care is needed, beyond what medical staff at the reporting VMC location can provide, or if ambulance transport only is needed. This recommendation to have County Communications handle these calls is based on the fact that County Communications is responsible for 9-1-1 ambulance dispatching in the County, and has a larger staff trained to triage medical calls than does the City of San Jose. If County dispatchers determine that firefighter first-response is warranted, those requests would be transferred to the City dispatch center for dispatching, as occurs now in selected areas of the County served by City firefighters under a contract between the City and County.

We also asked staff from the Department of Correction and the Office of the Sheriff, who jointly operate the Main Jail, and the Division of Custody Health Services, which provides medical care there, about their policies and procedures regarding requesting firefighter first-responder assistance in medical emergencies. Custody health provided procedures indicating that nursing staff would respond to all medical emergencies, and would request additional medical assistance if necessary. There was no specific

⁹ This recommendation was added after preparation of the Revised Draft Report, based on new information developed in response to discussions with Valley Medical Center staff. Therefore, the Fire Department was not able to respond to this recommendation.

reference in its procedures to using firefighter first-responders. The Associate Director Acute Psychiatric/Custodial Health Services, who manages the jail medical facility, reported that under its practices, nurses frequently request Code 2 responses that don't require firefighter response, only to have County Communications dispatchers upgrade the calls to Code 3, requiring firefighters to respond.

Department of Correction procedures indicated that jail medical staff would normally determine if fire department response is needed, but that other employees could request such assistance on their own "if the nature of the medical emergency appears immediately life threatening. Those procedures also indicated that firefighter response would be obtained through dispatchers at the County Communications Department, rather than a 9-1-1 call to the City of San Jose. The policy also states that when in doubt, fire department response should be sought. Information obtained from the County Communications Department indicated that, prior to 1999, San Jose firefighters did not normally respond to medical incidents at the Main Jail unless specifically requested to do so by jail personnel. In November 1999, Communications reported a letter from the Fire Department, changing this approach, because the City had determined that:

"The exception is not consistent with our Medical Priority Dispatch System protocols. Upon receipt of this letter, please update Dispatch procedures at County Communications and notify jail staff that this policy exception is no longer in effect. San Jose Fire Department first responder units will be dispatched on all EMS system events in accordance with existing response protocols, regardless of location."

This issue of Fire Department responses to the Main Jail has been discussed in the past. In July 2009, the Acting County Executive and the former City Manager jointly issued a memorandum regarding various issues relating to EMS response to the Jail. Regarding the frequency of responses, the memo stated City concerns that such calls were too frequent. The memo noted that the contract between the City and the 9-1-1 ambulance provider, since replaced by the contract between the County and City, required a paramedic response to calls within urban areas, including the Main Jail, but said that, to the extent allowed by contract requirements, the County and the City could explore

expanded use of triaging for jail calls to improve system efficiencies and use of EMS resources.

We recommend updated policies and procedures be developed in the County Jail for when it is appropriate to use 9-1-1, given the existence of full-time nursing staff and weekday physician staff in that facility, and the inconsistencies between current Department of Correction and San Jose Fire Department policies and procedures. These policies need to further describe situations that would constitute “immediately life threatening” medical emergencies necessitating firefighter response. These policies should emphasize that 9-1-1 should not be used to secure ambulance transportation for inmate/patients, except in emergency situations where immediate emergency medical care is needed that is beyond the capabilities of the jail medical staff. Otherwise, ambulance transports from the jail should be arranged on a non-emergency basis from ambulance providers. If sufficient demand exists, the County should also consider staging a non-emergency ambulance at the jail during selected periods when transports are most convenient to occur.

We also recommend that Department of Correction, San Jose Fire Department, County Communications and County Emergency Medical Services Agency staff confer on additional triaging procedures on calls from the Main Jail, designed to determine whether firefighters need to respond to the facility, or if only ambulance transport is required. While San Jose Fire Department firefighters would still be dispatched when needed, through the interconnection between the County and City computer-assisted-dispatching systems, the calls could be triaged by County dispatchers, under additional procedures geared toward sending firefighters to the Main Jail only in situations that exceed the Jail medical staff’s capacity. We believe County Communications could provide this role, since it has lower call volume than does the City’s dispatch center, and most of the County’s dispatchers, as discussed elsewhere in this report, are trained to triage medical 9-1-1 calls. If County dispatchers determine that firefighter first-response is warranted, those calls would be transferred to the City dispatch center for dispatching, as occurs now in selected areas of the County served by City firefighters under a contract between the City and County.

In terms of curbing inappropriate EMS system use among members of the general public, one step is increasing public education about appropriate and inappropriate uses of the system. The Lake County, Florida emergency medical services system currently provides an Internet site, www.whentocall911.com, that describes questions citizens should ask to determine when calling 9-1-1 is appropriate, examples of symptoms, taken from the American College of Emergency Physicians, that are warning signs of a medical problem requiring immediate assistance and descriptions of the information to give a 9-1-1 dispatcher regarding a medical emergency. The site also describes what emergency medical technicians and paramedics do, as well as emergency room medical staff. It also describes situations where calling 9-1-1 is not appropriate, and specifically advises against calling for non-emergency transportation. According to media coverage, other rescue agencies across the country link to the Lake County site, and that agency also has developed posters, flyers and billboards on proper 9-1-1 use. We recommend that the City of San Jose contact Lake County to see if its materials can be adapted for use in San Jose, including linking to the web site.

During the exit conference for this audit, City staff indicated that they were initiating more public outreach on proper use of the 9-1-1 system as among “community alliance initiatives,” included in a Fire Department strategic plan that is nearing completion. To date, no link to the website cited above was found on the Fire Department’s web site, nor any other information on the topic. Use of the Florida program was cited as an example of an effective 9-1-1 awareness campaign in a February 2013 assessment of the Countywide EMS system prepared for the County Emergency Medical Services Agency.

A more drastic step has been taken in the County of Fresno, which in 2012 adopted Policy Number 570 of the Central California Emergency Medical Services, which oversees emergency medical services in that County. Key features of that policy are:

- Defines system abusers as individuals who have accessed the EMS system at least once per week over three months, or 12 or more responses in a 90-day period. Such individuals, once identified, will have their cases reviewed by the EMS Medical Director and EMS Director for further action.

- Specifically excludes public drunkenness from being an emergency medical condition, and includes responses initiated for an individual by law enforcement in these circumstances as cases potentially triggering an abuse review.
- Requires individuals identified as EMS abusers to be identified to the relevant law enforcement agency, County Department of Social Services, primary care physician, County mental health agency and the social services department of the hospital most frequently used.
- Individuals identified as system abusers receive three written notices, followed by a final written notice, 70 days after the first warning, which is hand-delivered to the individual, and advises them that ambulance transport privileges have been discontinued, and they will no longer receive an ambulance response or transport. At any subsequent call, unless the individual is found to meet specific criteria indicating immediate medical treatment is needed, they will be advised that no transport will be provided. Essentially, if they can't sit-up, stand and walk without assistance, no transport is provided. An appeals process is also provided. The full text of the policy is provided as an attachment to this section.

According to a presentation by Dan Lynch, the Central California EMS Agency Director, the policy was developed after the County identified the top 50 abusers of its EMS system, including two individuals that received 329 and 471 transports, respectively, in a one-year period. It found those 50 individuals were responsible for 4,367 response in 2012, at a cost of nearly \$3.9 million. It attempted to connect these individuals with social services to address underlying causes of frequent EMS use, including homelessness, mental health problems, substance abuse, etc. In the first year of the new policy, the number of calls from these individuals was reduced by 1,991, saving about \$1.8 million. An Aug. 9, 2014 report in *The Fresno Bee* on the program reported that in 2013, the same 50 users took only 913 trips to the hospital, a reduction of 3,454 trips. Although it is not clear whether such a program would also reduce calls for service from firefighter first responders, we believe it should have some impact,

based on firefighters' comments that so-called "frequent fliers" use the 9-1-1 system primarily to get ambulance transportation to a hospital.

A slightly different approach, emphasizing connecting frequent 9-1-1 users with social services and preventative medical care, has been adopted by several fire departments in the state of Washington, including the cities of Tacoma and Spokane. Their program, called FDCARES (Fire Department Community Assistance Response Team), uses 9-1-1 medical calls as a way to identify individuals who have barriers in identifying and utilizing community resources. In Spokane, the program operates as a non-profit brokering social services agency within the Spokane Fire Department, which uses social work interns from Eastern Washington University, supervised by a social worker and a community services director, to do outreach to frequent 9-1-1 users. We think it possible that a similar program could be developed here among the San Jose Fire Department, County of Santa Clara Social Services Agency, and San Jose State University, which has a school of social work.

We recommend that the City of San Jose, working with the County EMS Agency, contact staff in the County of Fresno, and one of the FDCARES programs in Washington state, and consider implementing pilot versions of the FDCARES program, and the County of Fresno policy for medical responses, in the City of San Jose. The first step in such a procedure would be to compile a list of the most frequent users of 9-1-1 services, from Patient Care Reports or other sources, and determine which individuals are potential abusers of the system.

During the exit conference for this audit, City staff presented two additional options it believes would help address this problem with overuse of the emergency medical system by individuals. First, it provided a letter that had been sent to the California Emergency Medical Services Authority, proposing a pilot program in community paramedicine, which would have used paramedics to divert frequent 9-1-1 users to other modes of medical treatment or to social services as an alternative to calling 9-1-1 for first-response by firefighters and transport to a hospital emergency room. The letter proposed a partnership between the Fire Department and the County Emergency

Medical Services Agency on this project, but Department staff said the Agency declined to participate, and therefore the proposal was dropped.

In response, the County Director of Emergency Medical Services stated that his agency declined to participate because it felt that the City's proposal was not specific enough in how the proposed pilot program would operate and how its performance would be evaluated; was too large in proposing 30 paramedic participants for a pilot project; did not address the economic effects on the EMS system if a large volume of patients no longer required ambulance transport; and required extensive participation by the EMS Agency, in addition to its other duties. The Director further said that the Agency believed that the City should address its existing response-time problems first, before embarking on a new research initiative.

We believe that while the Fire Department's proposed pilot project has merit, it is a longer-term solution to a portion of the response-time problem, akin to changes in the emergency medical triaging system discussed later in this report. We believe the two recommendations we have made are a more direct response to 9-1-1 abuse issues, and have the advantage of not requiring additional resources from the Fire Department.

Second, the Department presented information on efforts since 2012 to reestablish a sobering center in the County, as an alternative to hospitalization or incarceration for individuals whose only symptoms appear to be inebriation. The County operated such a center from 1995 to 2003, funding it jointly with San Jose for the first two years, and then with County resources afterward. The center was closed in 2003 based on the conclusion that its usage, and the benefits to clients, did not justify the cost. The Public Health Department has estimated the cost of such a center at \$1.7 million to \$2.3 million. Presentations to the Hospital Council of Santa Clara County and local hospital executives revealed concern from these stakeholders about the cost, and a suggestion that funding also be sought from local law enforcement agencies, who would benefit from using this facility as an alternative to taking inebriates to the Main Jail.

According to minutes of the October 3, 2013 Emergency Medical Services Committee, since the May 2013 presentation to the hospital officials, work on this project has halted,

due to other priority issues in the EMS system and the County. Based on the County's previous experience, we believe such a facility should only be implemented based on ongoing funding commitments from other stakeholders to support it, including cities, because of the law enforcement benefit, and private hospitals, who benefit via diversions from emergency rooms.

In regard to excessive unnecessary use of emergency medical services by convalescent homes and similar facilities, additional education of facility staff and managers should reduce inappropriate use. In response to a draft version of this report, the Emergency Medical Services Agency reported that it created a reference document "Interfacility Transfer by Ground or Air Ambulance" in 2003 to help providers do outreach with such facilities, including providing information on when 9-1-1 is appropriate or not appropriate to use for transportation of patients, and what non-emergency transport resources are available in the County. Use of this document, available at www.sccgov.org/sites/ems/Documents/pcm800/808.pdf, was not mentioned by any of the firefighters interviewed. We recommend that copies of this document be obtained by San Jose Fire Department stations that have frequent calls to such facilities, and be used by firefighters to work with staff and management at these facilities to curb inappropriate 9-1-1 use.¹⁰

We also note that our proposal for the City to adopt a voluntary emergency medical services subscription fee, discussed elsewhere in this report, may reduce use of the service by such facilities, or at least provide a source of revenue to pay for providing the services. For example, the subscription fee in Murrieta includes a specific proposed fee of \$300 per year for all outpatient medical care facilities, which City staff justified by stating that the fire department, "receives a disproportionately greater number of emergency calls from outpatient medical care facilities as compared to other businesses." Similarly, the City of Fullerton's fee charges care facilities \$42 per bed annually, and a fee proposed but not implemented in Santa Rosa included a cost of \$16 per unit for assisted living facilities. As noted elsewhere in the report, non-subscribers

¹⁰ This recommendation was developed after completion of the Revised Draft Report, based on information provided by the County EMS Agency. Consequently, the Fire Department was not able to respond to this recommendation.

to these fees are charged a separate fee, usually \$350 or more, for each call to which firefighter paramedics must respond. We believe these fees, in the case of convalescent homes, assisted living facilities and similar facilities, should be charged to the home, not to the resident, since it is facility staff that is making the 9-1-1 call for services. During the exit conference for this audit, the City agreed with the concept of pursuing a subscription fee, and had included it as part of the Department's strategic planning process.

3.9 Response Time Issues Associated with Triaging of EMS Calls

When someone in the City of San Jose dials 9-1-1 for emergency assistance, the call is usually received by a call-taker in the San Jose Police Department dispatch center. If the call is determined to be a medical emergency, the call is transferred by the call-taker to a dispatcher in the San Jose Fire Department dispatch center, which is located in a different room in the same building as the police center, adjacent to police headquarters.

Upon receiving the call, a fire department dispatcher asks a series of questions, provided in the computer-aided-dispatch system through a protocol called the Medical Priority Dispatch System (MPDS), to determine the nature of the medical emergency. Based on the responses to the questions, the dispatcher assigns one of about 2,800 alphabetic, numerical, or alpha-numeric codes that reflect the nature of the medical emergency.

Associated with each of the codes is an alphabetic indicator of the seriousness of the emergency. In order of increasing concern, those levels are: Alpha, Bravo, Charlie, Delta and Echo. Under San Jose Fire Department policies, Alpha-level incidents are dispatched as Code 2 (no lights or siren) responses, which under the first-responder contract with the County of Santa Clara must be reached in fewer than 12 minutes. All other levels are dispatched Code 3 (lights and siren), and must be reached in fewer than eight minutes.

Research for this review identified two issues related to this triaging system by dispatchers which affect, or could affect, response time to medical calls:

- First, firefighters frequently cited a problem with untriaged calls, that come from Police Department call takers, but are not triaged, because they involve a law enforcement incident where the reporting caller is never transferred to a Fire Department dispatcher for triage purposes, or they are requests for an EMS response by law enforcement officers, where again the reporting party is not transferred to Fire Department dispatchers who could triage the call. According to firefighters, these calls often result either in situations where there is no medical problem, but fire engines are basically sent in place of police patrol units that are not available, or in a situation where firefighters cannot address the medical emergency, because the location is not secure, and police have not arrived at the scene.
- Second, emergency medical field research, conducted in other jurisdictions, suggests that the eight-minute standard for Code 3 calls, which was originally developed to respond to heart-related problems, may not be applicable to other types of medical emergencies, from the standpoint of patient outcomes. This provides the possibility of extending the time standard for some types of medical emergencies, matching the San Jose Fire Department's response requirements to its resource capabilities, which are lacking as discussed elsewhere in this report.

The remainder of this section discusses these two issues.

Tying Up Firefighters in Untriaged Medical Calls

During our interviews with firefighters at all San Jose fire stations, many firefighters reported problems with untriaged medical calls. These are calls that have not gone through the structured MPDS questioning that permits dispatchers to assign a code reflecting the nature of the emergency. Under current Fire Department policy, all untriaged calls are assigned a Delta level of seriousness, requiring a lights-and-siren response, because the nature of the medical problem, and its urgency, are not known.

According to firefighters, and Fire Department management, this situation most often occurs when the call has both some sort of injury or other medical problem, and also is a potential law enforcement situation. When this happens, according to firefighters, Police Department call-takers will keep the reporting party on their phone line, pending a police department response, and don't transfer a call in time for the call to be triaged before firefighters arrive.

Firefighters report finding one of two situations when they respond to such calls. First, they encounter situations that are not true medical emergencies, but are the equivalent of welfare checks, such as a homeless person being injured, but instead just being someone that is sleeping off the side of a road. One firefighter stated: "They don't do any triage (referring to Police). It all seems like we're getting more calls where they don't have the ability to respond, so we're sent in and then they say 'Is PD needed?'" Many firefighters reported this same scenario of being sent on a call, then being asked once they arrive if police assistance is needed. Another firefighter stated that "people know the fire department is going to come quicker than the police department," resulting in calls that should be law enforcement situations are instead dispatched as medical calls. This firefighter cited an instance on the morning of the interview of responding to an Alzheimer's Disease patient acting out, which he felt was more properly a law enforcement situation.

The other situation cited by firefighters on non-triaged calls is responding to them, and finding that the potential medical situation is injuries from a domestic dispute, a fight, or some other situation that requires a law enforcement response. Because the scene is not secure, Fire Department policies require firefighters to pull out of the location to a safe distance, until it is secured by police. One firefighter reported having to stage at the scene of a domestic violence incident for 45 minutes, waiting for police to respond so firefighters could enter and treat injuries. This situation was not resolved until a battalion chief intervened, and ultimately arranged for the California Highway Patrol to respond to the scene. A firefighter at another station reportedly recently responding to a Code 2 call that ended up being a guy with a knife who may have attacked a woman. Firefighters staged, waiting for police. They ended up waiting an hour before they could safely enter the location. Staff at another station reported being sent to a traffic

accident, which was a major high-speed collision, with one driver probably under the influence. The incident occurred during a Police Department shift change, and refused to send anyone until the new shift began, a delay of 25 minutes in which firefighters had no one to secure the location while they provided treatment.

Our review of the database of all medical calls from July 2012 to April 2014 indicates that firefighters' concern in this area is well-placed. Of 90,481 Code 3 medical calls responded to in that period, 19,759 were not triaged. This included 13,707 untriaged calls dispatched as a Level Delta response, the type of call described by firefighters as usually a problem, and another 6,052 medical calls just reported as untriaged.

To assess the likelihood that firefighters are being delayed at some calls due to staging as they described, we also compared, for all untriaged calls, the time firefighters were reported on scene to the call, and the time they were cleared from the call. Our assumption is that while some situations where firefighters are at the call site for 30 minutes or more could reflect extended treatment situations, it is likely that many of these extended calls reflect staging situations, as described by firefighters.

Our review found that of the 19,291 untriaged medical calls where both time on scene and time cleared from the call were available, 1,501 calls, or nearly 7.8 percent of the total, were calls where firefighters were on scene for 30 minutes or more. Of that number, 181 calls, or nearly 1 percent, were calls where firefighters were on scene for one hour or more. The 1,501 calls on scene for 30 minutes or more represented 1.67 percent of all Code 3 medical calls responded to by firefighters. To the extent that most of these calls represent staging situations as described by firefighters, this represents a drain on resources, since firefighters staging for one medical call, while waiting for police to secure the scene, are unable to respond to other medical calls that may occur in their first-due area at the same time. Similarly, every time firefighters respond to a situation where police more appropriately should have responded for assessment, they are not available to respond to another call that may be a bona fide medical emergency. Given our analysis elsewhere in this report that identifies the frequency of second-due responses as a major source of non-timely response to medical calls, any such diversions of firefighters are a significant problem.

San Jose Fire Department procedures for responding to calls where the scene may not be secure assign the company officer at the scene, usually the captain of the responding vehicle, the responsibility for determining if a scene is secure. If it is not, they notify dispatchers to notify law enforcement, and stage outside the area. Department management reported that the practice is that if firefighters are staging for more than 30 minutes, they are to contact their battalion chief, who is supposed to then contact parallel San Jose Police Department command staff to try and get a police response to secure the scene. Firefighters are not allowed to clear from the incident until they are released by another agency, such as law enforcement or ambulance personnel, or they have determined no medical response is needed to the incident.

In interviews, Fire Department management acknowledged that there have been periodic discussions with Police Department counterparts about this problem, with the goal of getting police to more quickly free up patrol officers from other calls to respond to non-secure scenes where firefighters are staging. However, no changes in procedure have been made and no formal resolution has occurred.

We recommend that the Fire Department develop additional policies in this area. First, a protocol should be developed to permit dual law enforcement-medical calls to be triaged by Fire Department dispatchers, if police response to the incident is going to be delayed by more than a certain amount, perhaps 10 minutes. This could be accomplished by transferring the call to Fire Department dispatchers for triaging purposes, or possibly by some sort of conferencing arrangement, where a Fire Department dispatcher could speak to the reporting party and go through the MPDS protocol while the Police Department call-take remains on the lines. Through such an approach, firefighters would have some information about the nature of the medical emergency to consider when deciding whether to enter the scene.

Additional dispatch resources could also ameliorate this problem. For comparison, we asked managers at the County of Santa Clara Communications Department, which provides dispatch services for Sheriff's Department patrol officers serving non-city areas and selected cities by contract, and also provides dispatch services for the Santa

Clara County Fire Department, which serves the unincorporated area and selected cities, how they addressed this problem of dual-responder emergencies. They reported that the problem rarely occurs, because 51 of 59 dispatchers in the Department are trained in emergency medical dispatching, including use of MPDS, and thus call-takers are usually available to gather information for both law enforcement and emergency medical services purposes from reporting parties. San Jose could expand this capability, but that would require additional cost in training and dispatcher pay differentials.

In addition, the Fire Department should develop additional formal policies for how to address situations where police response is going to be extensively delayed, including requesting that other law enforcement agencies, such as the California Highway Patrol, the County of Santa Clara Sheriff's Department, or the nearest adjacent police agency, provide response to secure incident scenes when the San Jose Police Department is unable to because of insufficient resources. Such requests should be informed by the triage information we have recommended by obtained in such dual-response situations, so that firefighters can inform law enforcement peers of their assessment of the seriousness of the medical situation that exists.

During the exit conference for this audit, Fire Department and other City management staff said they believe another, if not more significant cause for delays in clearing fire crews from emergency medical scenes, is delays by Rural Metro in responding to such scenes for purposes of transporting patients to the hospital. Staff stated that fire crews regularly complete their assessment and initial treatment of the patient at the scene, but then are required to wait at the scene until an ambulance arrives. They presented a list of 16 incidents in Calendar Years 2013 and 2014 where firefighters reported waiting 21 to 41 minutes for an ambulance to arrive, or arranged for a Fire Department squad to provide the transport instead, as permitted under County and Fire Department EMS policies when the contracted ambulance company is not available.

In interviews at fire houses, views of firefighters were mixed as to whether response time by the ambulance provider was a significant problem. Crews in stations serving the core service area in central San Jose generally did not find ambulance response time to delay them from clearing calls, and we did not experience this problem on the calls

we witnessed. However, firefighters in outlying stations said response time was a problem, and that it was inconsistent, with ambulances arriving promptly at some times and being extensively delayed at others, a problem they identified as related to Rural Metro's stationing of ambulances around the City.

Monthly reports on Rural Metro's on-time compliance from January 2013 through August 2014, provided on the Emergency Medical Services Agency web site, show the ambulance provider has achieved more than 90 percent on-time compliance in the five zones for which the data is reported, for every month during that period. Of the five zones, Zones 2, 3 and 4 include portions of the City of San Jose. While Fire Department staff believe the overall compliance by the ambulance provider masks significant incidents of non-compliance in selected areas, which adversely affects Fire Department response times, assessment of this issue, which would have required detailed analysis of ambulance provider performance, as opposed to looking at issues within the Fire Department, was believed by Management Audit staff to be outside the scope of the review requested by the Board of Supervisors. We recommend that this claim by the Fire Department be investigated by the Emergency Medical Services Agency, and its validity reported to both the City Council and the Board of Supervisors. If the City's claim is found to be true, additional requirements for ambulance service performance, as they effect Fire Department response times, should be developed as part of the negotiation of a new Countywide ambulance service contract that is expected to occur by 2016.

Matching Medical Call Response Times to Patient Outcomes

As described earlier in this review, the San Jose Fire Department is supposed to respond to Code 3 (lights-and-siren) medical calls in fewer than eight minutes, 90 percent of the time. Code 3 calls include all calls determined through the Medical Priority Dispatching System to be Bravo, Charlie, Delta or Echo level calls.

A review of existing research regarding emergency medical services response times revealed that the eight-minute standard is not one established by law. An arguably less stringent standard is provided by National Fire Protection Association , Standard NFPA

1710, which says that firefighters should be able to depart their station or other current location for the medical call location within 60 seconds of receiving notification of the call, and that Advanced Life Support crews should be able, once they begin traveling to the location, to arrive within eight minutes. This total turnout time plus travel time of nine minutes is one minute longer than the standard in the contract between the City and the County. However Standard 1710 also says the eight-minute travel-time standard for Advanced Life Support crews assumes they are preceded by a first responder providing automatic external defibrillation for a heart attack, or basic life support services for other medical emergencies, that arrives within four minutes, which is a far more stringent time standard than is now being followed in the County of Santa Clara. We believe this more stringent standard could not realistically be achieved in a highly-urbanized area such as San Jose, given the resources required.

Further review shows that these standards date back to research in the 1970s, such as a 1979 study in the *Journal of the American Medical Association* regarding paramedic programs in King County, Washington, near Seattle¹¹ That study found that survival rates for patients who received Advanced Life Support care, such as defibrillation and intubation, within eight minutes were three times as high as patients for whom such care took more than eight minutes to initiate. The difference was even more dramatic when patients received cardiopulmonary resuscitation within four minutes and ALS care within eight. Of those patients, 43 percent survived and were discharged from the hospital. By contrast, only 3 percent of patients whose care did not meet those two standards were successfully discharged.

While research on the impact of quick response on cardiac-related illnesses has been consistent and definitive, other research shows that extending the eight-minute standard to other types of still-serious medical emergencies, may not have the same impact on patient care.

¹¹ Eisenberg, Mickey S.; Bergner, Lawrence; and Hallstrom, Alfred. Cardiac Resuscitation in the Community-Importance of Rapid Provision and Implications for Program Planning. *Journal of the American Medical Association*, May 4, 1979, Vol. 241, No. 18, pp. 1905-07.

For example, a 2005 study published in the journal *Academic Emergency Medicine* reviewed 9,559 patients in the Denver area, matching information from the paramedic reports from these patients transport to the hospital with information from hospital emergency department records, and taking into account each patient's medical acuity, in terms of whether they were at low, intermediate or high risk for mortality based on the dispatch call MPDS code and emergency department diagnosis. This study found that only response times of less than four minutes had a statistically significant impact on survival rates, whereas response times less or greater than eight minutes had no statistical impact¹².

A separate study from the same data set, reviewing 3,576 patients suffering patients of traumatic injuries, including both blunt or penetrating injuries, found no significant effect on survival rates based on response time being greater or less than eight minutes, and no differences in the frequency of intubation of patients in the two time-response groups.

A similar study conducted in Mecklenburg County, North Carolina (which includes the City of Charlotte), and published in 2002, found similar results. This study looked at 5,424 lights-and-siren responses that resulted in transport to the region's primary emergency room facility. That study, which looked at ambulance responses that are supposed to be less than 11 minutes for emergency life-threatening calls, and less than 13 minutes for emergency non-life-threatening calls, found that only responses of less than five minutes resulted in fewer deaths that would have been expected statistically. By contrast, response times greater than five minutes but less than 10 minutes did not produce fewer deaths from faster responses than were statistically expected. That is, no benefit was found when response times were nine minutes versus 10, or eight versus nine, seven versus eight, etc. Independent doctors asked to assess cases in the same where the patient did not survive agreed that in 83 percent of the cases, a one- to three-minute quicker response time would not have impacted the patient's survival.

¹²Pons, Peter T.; Haukoos, Jason S.; Bludworth, Whitney; Cribley, Thomas; Pons, Kathryn A.; and Markovchick, Vincent J. Paramedic Response Time: Does It Affect Patient Survival? *Academy of Emergency Medicine*, July 2005, Vol. 12, No. 7, pp. 594-600.

A broader geographic study, assessing 3,656 trauma patients served by 146 EMS agencies and transported to 51 trauma hospitals in 10 metropolitan areas across North America from December 2005 through March 2007, also found no statistical association between faster response times and mortality for these trauma patients. That study also found no support for what is known as the Golden Hour theory, which says a key for survival of trauma patients is to reach hospital care within one hour of when the injury occurs¹³.

Lastly, a 2010 study, conducted by Toronto Emergency Medical Services and its associated hospital, looked specifically at which MPDS determinants (the codes that dispatchers use to identify the specific medical situation reported by a caller), actually merited response within eight minutes or less, by looking at patient outcomes in a 16-month retrospective sample of 220,358 incidents. The sample included 93,058 incidents where a lights-and-siren response occurred, and was designed to identify a subset of determinants that maximize the opportunities for beneficial interventions for firefighters while minimizing unwarranted responses, based on patient outcomes.

This study assumed that a lights-and-siren response was appropriate if the response resulted in firefighters performing CPR, defibrillation, automated external defibrillation, or if the patient was classified by treating paramedics as needing resuscitation under a Canadian triage and acuity scale. The researchers then ranked the 509 MPDS determinants used in this system from the one with the highest proportion of calls producing an opportunity for intervention, to the one with the least. The study found that an optimized system would respond lights-and-siren to calls representing only 27 MPDS determinants, representing 16,091 incidents of the 220,358 in the 16-month sample. These determinants included cardiac arrest, choking, unconsciousness, convulsions or seizures, other breathing problems, traumatic injuries of various types and pregnancy. Another 58,275 incidents were recommended for conversion to a non-

¹³ Newgard, et. al. Emergency Medical Services Intervals and Survival in Trauma; Assessment of the 'Golden Hour' in a North American Prospective Cohort. *Annals of Emergency Medicine*, March 2010, Vol. 55, No. 3, pp 235-246.

emergency response by firefighters, and the remaining 18,692 were recommended for no firefighter response at all.¹⁴

The thrust of this research was captured in a presentation by Dr. Tom Blackwell, Clinical Professor of Emergency Medicine at the University of South Carolina. His presentation was titled *Time is Not of the Essence: Reevaluating the Traditional Response Interval*, and his concluding presentation slide stated: “What’s all this stuff about ‘Response Time?’ For most, it probably doesn’t matter. . . .”

Firefighters offered mixed reactions to questions about the adequacy of the current 9-1-1 triage system in San Jose. None blamed dispatchers, saying it is often extremely difficult to get accurate information from reporting parties even once on scene, indicating that dispatchers have a very difficult job. Many firefighters said they’re actually concerned about under-trianging of some calls, particularly seizures, which are sometimes assessed as Level A calls, if the seizure is supposedly over, when firefighters don’t know what may have caused it. A few firefighters suggested that more tiers for response time be provided, such as 12 minutes for Alpha, 10 minutes for Bravo, and eight minutes for Charlie, Delta and Echo.

However, another firefighter, describing what firefighters find at calls versus what they’re told by dispatchers, said it’s not uncommon to respond to a Bravo-level call for a person with a bleeding leg, and find out it’s a severed artery, which is much more serious. That happens “Bravo, after Bravo, after Bravo,” the firefighter said. “It’s a good thing that we’re still going Code 3 on those.”

Given the shortage of EMS resources in the San Jose Fire Department, and its status as the largest first-responder agency in the County of Santa Clara, and the need to use resources as efficiently as possible, we recommend that research similar to that described here be pursued in the County of Santa Clara. The County Emergency Medical Services Agency should seek academic assistance for such research, potentially

¹⁴ Craig, Alan M.; Verbeek, P. Richard; and Schwartz, Brian. Evidence-Based Optimization of Urban Firefighters First Response to Emergency Medical Services 9-1-1 Incidents, *Prehospital Emergency Care*, January/March 2010, Vol. 14, No. 1, pp. 109-117.

through the medical school at Stanford University, which is affiliated with Valley Medical Center and also operated Stanford Medical Center, which are the County's two primary trauma facilities. Grant funding for such research should be pursued. Most immediately, the EMS agency should determine if there is existing data on patient outcomes, in Pre-hospital Care Reports by firefighters, and VMC and Stanford emergency room records, to support such a project, or if data should now begin to be collected for future use. The goal of such research should be to determine if the current eight-minute response standard is required in all situations where it is now being applied, from the standpoint of patient outcomes, or if different standards could be applied without affecting such outcomes. During the exit conference for this audit, Fire Department management staff said they concurred with this recommendation, and would participate in any such research initiated by the County, but concurred that the County, as the local regulatory authority over the EMS system, should lead this effort.

Also during the review of the draft audit report, the County Director of Emergency Medical Services noted that a local model for assembling the data for this kind of research exists in Alameda County. The Alameda County Emergency Medical Services Agency provides, as part of its Internet site, two years of Medical Priority Dispatch System data, broken down by each MPDS determinant. The data shows, over that time period the percentage of calls under each determinant that resulted in an ambulance transport, a cancelled call, pronouncement in the field, or other result. It also shows the percentage of calls with no interventions, non-Advanced Life Support Critical interventions, or Advanced Life Support Critical interventions such as intubation, defibrillation, or administration of medication. For each determinant, it also shows the percentage of interventions of various types, for all interventions provided on five or more calls during the period of the data. The County of Santa Clara EMS Director stated he would like to begin gathering similar data here, as a first step to the research that would be necessary before any change in time standards could occur.

3.10 Providing Resources Via A Paramedic Subscription Fee

As described previously in this section, the City of San Jose Fire Department has fewer resources, in terms of manpower, equipment and stations, to respond to emergency

medical services calls than do its peer fire departments in Santa Clara County, or peer fire departments in other major California cities.

Among the reasons for this shortfall is that the Fire Department is supported by the City's General Fund, and therefore must compete for resources against other departments supported by the General Fund, including police, libraries, parks and other services. By contrast, the Santa Clara County Fire District, as a special district, receives a dedicated share of property taxes which must be devoted to district functions. Areas served by the District, including the cities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno and Saratoga, have far fewer calls per fire station, lower populations per station and fewer square miles for each station to cover, than does the San Jose Fire Department.

Having identified a shortfall in resources as a significant cause of San Jose's response-time difficulties, we then must identify a way to generate additional resources for this service. One approach tried by other California fire departments, providing resources specifically for emergency medical services, is adoption of a voluntary paramedic subscription fee program paid by residents.

Such voluntary fees are relatively common in Southern California, but have not been widely implemented in Northern California. A 1992 *Los Angeles Times* article on the practice identified the City of Fullerton as among the first to establish such a program, in 1984. Typically, establishing such a fee is a two-step process. First, a jurisdiction would establish a fee for responding to EMS calls, which would be billed to residents who request 9-1-1 medical assistance, and have firefighters provide treatment. The per-call fee is established to recapture costs of supplies used in providing treatment, and to provide additional staffing and other resources to improve response times. Typical per-call fees in cities that have implemented the program are \$300 or more per call. Accompanying the per-call fee is establishment of the voluntary subscription fee, which households would pay annually, and would cover the full cost of any medical call to which firefighters respond, including any amounts that cannot be recovered from insurance carriers. Some cities include the costs of ambulance transportation in the fee, but many do not, because their department does not provide that service.

The following table, compiled by staff in Santa Rosa when it was considering a fee, and updated by Management Audit staff where the information was available, shows some of the cities that currently provide this system:

Table 5

**Paramedic Subscription Fee Information
For Selected California Cities**

<u>City</u>	<u>Subscription Cost</u>	<u>Per-Response Fee</u>	<u>Pct./Homes Subscribed</u>	<u>No. or Pct./Bus. Subscribed</u>	<u>Revenue</u>
Anaheim	\$36	\$350	61%	50%	\$1,539,854
Arcadia	42	Cost	N/A	N/A	138,422
Buena Park	45	300	N/A	N/A	602,391
Burbank	48	100	N/A	N/A	1,860,000
Corona	48	350	N/A	N/A	1,062,015
Fountain Valley	60	300	N/A	N/A	129,790
Fullerton	42*	500	37%	189	1,551,000
Huntington Beach	60	cost	37%	2	1,282,370
Newport Beach	48	cost	15%	200	256,416
Murrieta	48***	350	N/A	N/A	200,000
Norco	48	350	N/A	N/A	348,330
Orange	48	Cost	40%	N/A	517,218
Santa Ana	50	428	18%	N/A	200,000
San Clemente	40	Cost	N/A	N/A	24,020
Westminster	42/100****	Cost	N/A	N/A	207,527

*Fullerton's subscription program includes a specific component for care facilities, who are asked to pay \$42 per bed annually.

**Montclair charge for businesses is \$50 for 15 or fewer employees, \$100 for greater.

***Murrieta's program includes a \$300 per year fee for outpatient medical care facilities.

****Business cost is \$100 per 10 employees annually.

As the table shows, most of the fees charged by cities were close to \$50 per year, per household or business, and participation in this voluntary program, and the amount of

revenue generated, varied widely from one city to another. Furthermore, a review of budgets for these cities showed that in many cases, more revenue was derived from per-call charges to residents or businesses that chose not to participate in the subscription program, than was obtained from subscription fees themselves. Many of the cities also offer reduced rates for households with incomes below selected thresholds.

Information from the United States Census and the California Department of Finance, reported by the City's Planning Division, estimated that there were 306,727 households in the City in Calendar Year 2013. If only 10 percent of such households paid a \$48 paramedic subscription fee, the City would receive \$1,472,290, a significant addition to the Fire Department's resources to provide emergency medical services. We note in looking at information from other cities that participation is enhanced when residents are given an easy way to make payments for such a program, such as collecting the annual fee along with utility bills. In the City of San Jose, that could be accomplished by collecting the fee along with the monthly trash disposal bill sent to households, which to our knowledge is the only widespread service currently billed for by the City.

Based on the potential to receive new resources to support emergency medical service response, we recommend the City pursue adoption of a voluntary paramedic subscription program, as other cities have done. Other cities have stated to residents that property taxes and other discretionary revenues basically pay for firefighting capabilities, not emergency medical services. To the extent that the historical distribution of fire stations in San Jose, which contributes considerably to the difficulty in responding to medical calls in a timely manner, and differs from the City's peer fire departments, reflects a focus on firefighting, rather than emergency medical services, the City could also make this argument. During the exit conference for this audit, Fire Department management concurred with this recommendation, and said they would pursue such a program.

3.11 County EMS Oversight and Evaluation of City First-Responder Performance

The County Emergency Medical Services Agency (County EMS) receives monthly electronic data files from the City, which include all 9-1-1 medical incidents that were received by the City's 9-1-1 Computer-Aided Dispatch (CAD) system. The data reported includes selected fields of information recorded by the City's CAD system, along with additional analysis performed by the City's Fire Department for purposes of reporting EMS medical response information pertaining to EMS 9-1-1 calls, including

the calculation of the City's on-time response percentage for the month. The monthly data includes approximately 33 data elements, as opposed to the 88 provided to the Management Audit Division for this review. However, County EMS does not independently calculate on-time performance, but rather does a review of a sample of the call data and calculates the amount of liquidated damages to be deducted from the City's first-responder monthly payment.

Section XII of the County contract also specifies that the required response-time data reporting shall be in a manner and format acceptable to the County. Since the current electronic monthly data reports do not provide comprehensive 9-1-1 data reporting from the prior month, including all calls and all data fields, and since the County has not specified a monthly reporting format for the City, it is recommended that a one-page summary sheet in the format shown in Attachment 10 be specified by County EMS to accompany each monthly electronic data report, and that the electronic data report be expanded to include all the data elements required to calculate the incident data included in the recommended monthly summary. It is also recommended that County EMS (1) independently verify the amounts included in the monthly summary, and (2) prepare and issue detailed written reporting procedures identifying and defining all permissible exclusions from the monthly calculation of response time performance as permitted by contract sections V.E. and XII. of Annex B to ensure a common understanding with the City of permissible exclusions to the calculation of monthly response time reporting.

Section 4. Summary of Recommendations

It is recommended that:

1. The City determine if its current actual EMS response time performance and goals are being met by existing station and EMS unit resources, given the relatively high number of calls, population and square miles of responsibility per station when compared with other cities within the County and throughout California.

2. The San Jose Fire Department commence a comprehensive review of its first-due areas of responsibility for each station with consideration of the actual Code 3 response timeliness performance of each station in the realignment process. The Department should conduct an annual analysis of late Code 3 response rates by station, including a comparison to performance of adjacent stations, in order to identify and correct performance imbalances in the City-wide EMS system in a timely manner.
3. The San Jose Fire Department obtain updated maps from Lynx Technologies, or another source, to provide all stations current maps to use on duty.
4. The San Jose Fire Department provide an alternative to the existing MDC on-board computers on fire vehicles, using iPads issued to firefighters, or other solutions based on approaches taken by other fire departments.
5. The San Jose Fire Department request the City Department of Transportation inspect Opticomm traffic-signal preemption equipment at intersections for proper operation, starting with a request to firefighters to identify intersections where the equipment does not appear to be operating correctly.
6. The San Jose Fire Department, assisted by the County Emergency Medical Services Agency as a liaison, work with the County Roads and Airports Department to install traffic-signal preemption equipment at key intersections of the county-maintained expressway system that currently lack it.
7. The San Jose Fire Department install additional traffic-signal preemption equipment at key City intersections that do not have it, based on locations identified by firefighters, and prioritizing the locations City-wide based on EMS response volume.
8. The San Jose Fire Department provide in-station control of key traffic signals needed at some stations to permit fire vehicles to exit safely, as has been

provided at Station 23. Stations 10, 18 and 22, because of their locations, are potential priorities for this step.

9. The San Jose Fire Department request the Department of Transportation to consider fire vehicle needs in prioritizing street repairs, so as to provide smooth pavement on key access routes for firefighters, and in street design, so as not to impede travel time for fire vehicles.
10. The San Jose Fire Department request the Police Department to properly enforce street parking restrictions in hillside residential areas where firefighters identify access problems due to narrow streets blocked by parked cars.
11. The San Jose Fire Department reactivate the “exceptional circumstances” incident reporting field in Firehouse and direct all stations to again report circumstances that meet the County criteria for exemption from the response time calculations so that they can be included as requested exemptions in the City’s monthly report to County EMS.
12. The San Jose Fire Department provide monthly emergency medical services response-time performance information to all fire stations, without firefighters having to access it themselves, so all firefighters can review their performance by shift and by station.
13. The San Jose Fire Department provide monthly reports on turnout time to all fire stations, without firefighters having to access these reports on-line themselves, so all firefighters can review performance by shift and station.
14. The City explore the feasibility of recording as the en-route time the time fire station apparatus are identified as moving out of the station, based on the wireless automatic vehicle location equipment on each apparatus, following the dispatch. If the apparatus is dispatched while in the field, the manual depressing of the en-route button may be necessary for such incidents.

15. Valley Medical Center management staff, San Jose Fire Department management staff, County Communications management staff, and County Emergency Medical Services Agency staff develop additional triaging procedures for calls coming from the Valley Medical Center campus, focused on identifying situations where ambulance transport within the campus is needed, but treatment by firefighter paramedics is not. This process should also ensure that 9-1-1 calls from the campus go to the County Communications dispatch center, which would triage them to determine if first-responder care or only an ambulance are needed.
- 16a. Department of Correction, San Jose Fire Department, County Communications and County Emergency Medical Services Agency staff confer on additional triaging procedures for calls from the Main Jail, designed to determine whether firefighters need to respond, or if only ambulance transport is required. If firefighter response is needed, the calls would be transferred to the City for firefighter dispatching, as now occurs in County-governed areas served by City firefighters under agreements between the City and County.
- 16b. The San Jose Fire Department adopt the www.whentocall911.com campaign developed in Florida, linking to that website, or adapting the materials for use on the Fire Departments website, and developing posters and other materials for improved 9-1-1 education of residents.
17. The San Jose Fire Department, in conjunction with the County of Santa Clara Emergency Medical Services Agency, pursue a 9-1-1 abuse ordinance similar to what has been developed in Fresno County, as well as a version of the FDCARES program developed in Washington State in order to direct frequent individual 9-1-1 callers to social services assistance.
18. The San Jose Fire Department, in conjunction with the Police Department, develop protocols that allow emergency medical service responses, that also require law enforcement response, to be triaged by Fire Department dispatchers

if law enforcement response is going to be significantly delayed, so that firefighters can determine whether to enter the scene.

19. The San Jose Fire Department develop additional policies to address situations where Police Department response to secure scenes of emergency medical services responses are going to be extensively delayed, including seeking assistance from other law enforcement jurisdictions where necessary.
20. The San Jose Fire Department, in conjunction with the County of Santa Clara Emergency Medical Services Agency, pursue research to determine if the current eight-minute response time is medically necessary to all types of Code 3 emergency medical responses to which it is now applied, or if a longer standard could be applied to certain MPDS dispatch determinants, as research in other regions has suggested.
21. The San Jose Fire Department pursue development of a voluntary paramedic subscription program among residents, as well as a per-call emergency medical response fee for non-subscribers, as an additional source of revenues for the Department's emergency medical services response function.
22. The County of Santa Clara Emergency Medical Services Agency require first-responder agencies to provide a one-page summary sheet in the format shown in Attachment 10 to accompany each monthly electronic data report, and that the electronic data report be expanded to include all the data elements required to calculate the incident data included in the recommended monthly summary. It is also recommended that County EMS (1) independently verify the reported monthly rate of on-time performance, and (2) prepare detailed written reporting procedures identifying and defining all permissible exclusions from the monthly calculation of response time performance as permitted by contract sections V.E. and XII. of Annex B to ensure a common understanding with the City of permissible exclusions to the calculation of monthly response time reporting.

23. The San Jose Fire Department request the County of Santa Clara to assess whether it would be faster to transport patients from Valley Specialty Center to the main hospital by gurney, using the basement-level access between the buildings, rather than requiring ambulance transport.¹⁵
24. The San Jose Fire Department obtain the County Emergency Medical Services Agency publication “Interfacility Transfer by Ground or Air Ambulance” for distribution to convalescent homes and assisted living facilities that are source of frequent unnecessary 9-1-1 calls, to educate facility staff and management as to when 9-1-1 calls for ambulance transportation are appropriate.¹⁶

¹⁵ This recommendation was added after preparation of the Revised Draft Report, based on new information developed in response to discussions with Valley Medical Center staff. Therefore, the Fire Department was not able to respond to this recommendation.

¹⁶ This recommendation was developed after completion of the Revised Draft Report, based on information provided by the County EMS Agency. Consequently, the Fire Department was not able to respond to this recommendation.

COMPARISON OF FIRE DEPARTMENT EMS WORKLOAD AND RESOURCES OF 20 SELECTED CALIFORNIA CITIES

Count	City	Total Square Miles	Estimated 1-Jan-14 Population	Number of Operational Stations	Total Number of EMS Units	Number of Annual Calls	Average Calls Per Station	Rank	Average Population Per Station	Rank	Average Population Per EMS Unit	Rank	Average Square Miles Per Station	Rank
1	Campbell	7	41,993	2	2	1,749	875	12	20,997	6	20,997	7	3.3	15
2	Cupertino	11	59,946	3	5	2,025	675	14	19,982	8	11,989	16	3.8	12
3	Fresno*	112	515,609	22	21	35,649	1,620	6	23,437	4	24,553	3	5.1	7
4	Gilroy	16	52,413	3	3	4,514	1,505	7	17,471	10	17,471	8	5.4	6
5	Long Beach	51	467,892	23	22	52,377	2,277	5	20,343	7	21,268	6	2.2	17
6	Los Altos	7	29,969	2	2	1,280	640	15	14,985	14	14,985	12	3.5	13
7	Los Altos Hills	9	8,354	1	1.5	238	238	19	8,354	19	5,569	19	9.0	1
8	Los Gatos	14	30,532	3	4	1,729	576	17	10,177	18	7,633	18	4.7	8
9	Milpitas	14	70,092	4	5	4,663	1,166	10	17,523	9	14,018	13	3.4	14
10	Monte Sereno	2	3,450	1	1	57	57	20	3,450	20	3,450	20	1.6	20
11	Morgan Hill	13	41,197	3	3	1,801	600	16	13,732	15	13,732	14	4.3	9
12	Mountain View	12	76,781	5	5	5,196	1,039	11	15,356	13	15,356	11	2.4	16
13	Oakland	54	406,023	26	26	62,729	2,413	3	15,616	11	15,616	10	2.1	18
14	Palo Alto	26	66,861	6.5	3	7,909	1,217	9	10,286	17	22,287	4	4.0	11
15	Sacramento	146	516,167	24	13	74,130	3,089	1	21,507	5	39,705	1	6.1	3
16	San Diego	372	1,337,029	47	38	129,880	2,763	2	28,447	2	35,185	2	7.9	2
17	Santa Clara	19	121,229	10	7	8,337	834	13	12,123	16	17,318	9	1.9	19
18	Saratoga	12	30,887	2	3	1,141	571	18	15,444	12	10,296	17	6.0	4
19	Sunnyvale*3	24	147,055	6	0	7,605	1,268	8	24,509	3	NA	15	4.0	10
Average Excl San Jose		49	211,762	10	9	21,211	1,233		16,513		17,302		4.2	
20 San Jose		180	1,000,536	33	45	77,481	2,348	4	30,319	1	22,234	5	5.5	5
Comparison of San Jose to Average							190%		184%		129%		129%	

COMPARISON OF FIRE DEPARTMENT EMS WORKLOAD AND RESOURCES BY CITY WITH POPULATION OVER 100,000

Count	City	Total Square Miles	Estimated 1-Jan-14 Population	Number of Operational Stations	Total Number of EMS Units	Number of Annual Calls	Average Calls Per Station	Rank	Average Population Per Station	Rank	Average Population Per EMS Unit	Rank	Average Square Miles Per Station	Rank
1	Fresno*	112	515,609	22	21	35,649	1,620	6	23,437	4	24,553	3	5.1	4
2	Long Beach	51	467,892	23	22	52,377	2,277	5	20,343	6	21,268	5	2.2	6
3	Oakland	54	406,023	26	26	62,729	2,413	3	15,616	7	15,616	7	2.1	7
4	Sacramento	146	516,167	24	13	74,130	3,089	1	21,507	5	39,705	1	6.1	2
5	San Diego	372	1,337,029	47	38	129,880	2,763	2	28,447	2	35,185	2	7.9	1
6	Sunnyvale*3	24	147,055	6	0	7,605	1,268	7	24,509	3	NA	NA	4.0	5
7	Santa Clara	19	121,229	10	7	8,337	834	8	12,123	8	17,318	6	1.9	8
Average Excl San Jose		111	501,572	23	21	52,958	2,038		20,955		25,608		4.2	
8 San Jose		180	1,000,536	33	45	77,481	2,348	4	30,319	1	22,234	4	5.5	3
Comparison of San Jose to Average							115%		145%		87%		130%	

*1 Fresno has 325 square miles when including contract fire protection districts. And 24 stations.

*2 From 2005-2009 (Entire SCFD system)

*3 Sunnyvale public safety officers are certified at the basic life support level (BLS) only and receives ALS responses from the County ambulance contract.

Source: 4-FIRE & EMS City Comparison Table9-5 (version 1)
Tab: California Cities

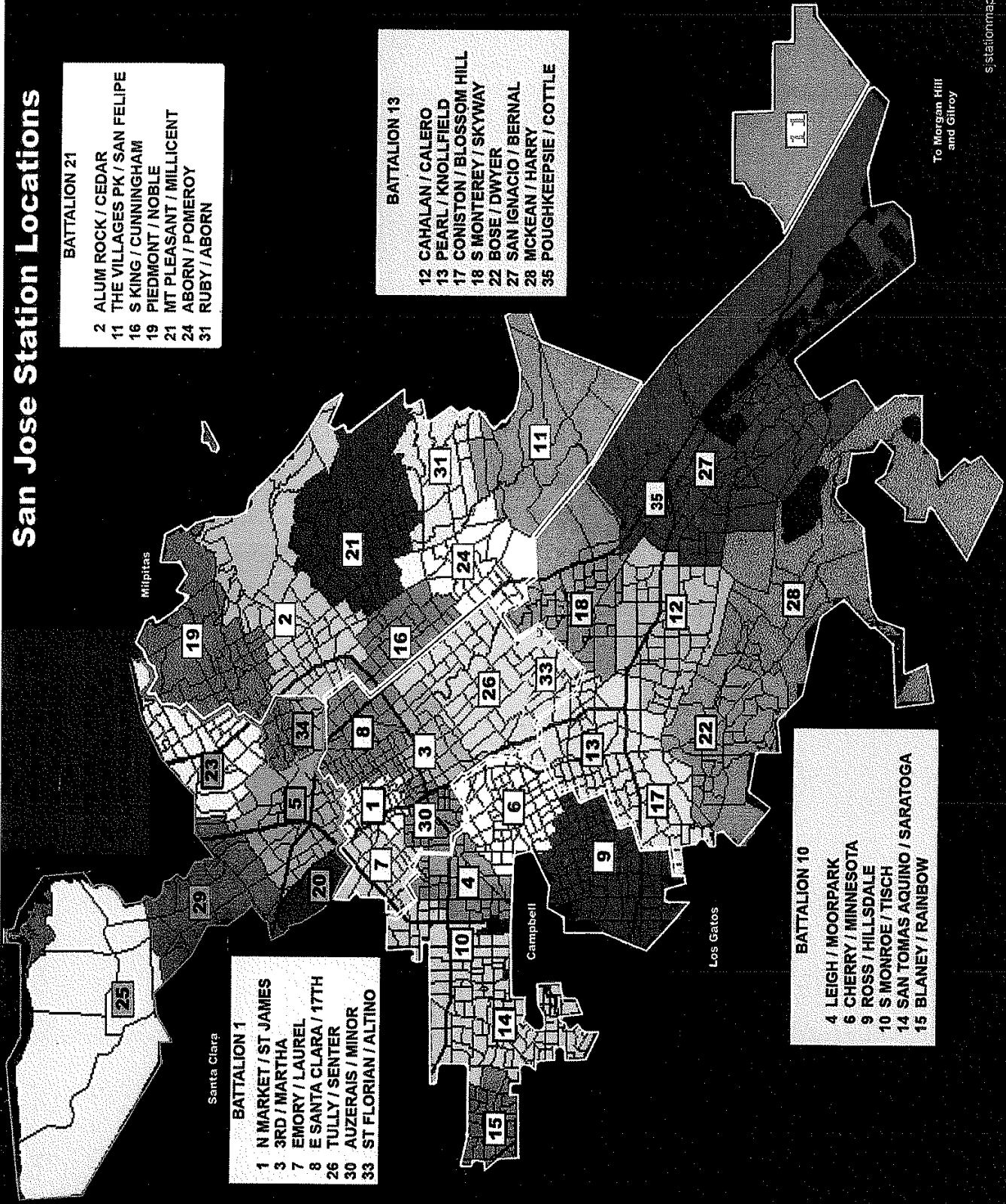
San Jose Station Locations

- BATTALION 21**
- 2 ALUM ROCK / CEDAR
 - 11 THE VILLAGES PK / SAN FELIPE
 - 16 S KING / CUNNINGHAM
 - 19 PIEDMONT / NOBLE
 - 21 MT PLEASANT / MILLICENT
 - 24 ABORN / POMEROY
 - 31 RUBY / ABORN

- BATTALION 13**
- 12 CAHALAN / CALERO
 - 13 PEARL / KNOLLFIELD
 - 17 CONISTON / BLOSSOM HILL
 - 18 S MONTEREY / SKYWAY
 - 22 BOSE / DWYER
 - 27 SAN IGNACIO / BERNAL
 - 28 MCKEAN / HARRY
 - 35 POUGHKEEPSIE / COTTLE

- BATTALION 1**
- 1 N MARKET / ST JAMES
 - 3 3RD / MARTHA
 - 7 EMORY / LAUREL
 - 8 E SANTA CLARA / 17TH
 - 26 TULLY / SENTER
 - 30 AUZERASIS / MINOR
 - 33 ST FLORIAN / ALTINO

- BATTALION 10**
- 4 LEIGH / MOORPARK
 - 6 CHERRY / MINNESOTA
 - 9 ROSS / HILLSDALE
 - 10 S MONROE / TISCH
 - 14 SAN TOMAS AQUINO / SARATOGA
 - 15 BLANEY / RAINBOW



To Morgan Hill and Gilroy

s:\stationmap1a.jpg

**Code 3 EMS Responses by Station
July 2012 to April 2014**

(In Order by Percent On-time)

Station	On-time	Late	Total	% On-time	% late
08	4,008	227	4,235	94.64%	5.36%
01	4,259	264	4,523	94.16%	5.84%
19	1,923	127	2,050	93.80%	6.20%
07	1,803	128	1,931	93.37%	6.63%
15	1,103	81	1,184	93.16%	6.84%
04	4,557	335	4,892	93.15%	6.85%
31	1,129	85	1,214	93.00%	7.00%
16	4,112	327	4,439	92.63%	7.37%
12	2,295	188	2,483	92.43%	7.57%
22	1,081	91	1,172	92.24%	7.76%
03	3,961	377	4,338	91.31%	8.69%
21	1,937	190	2,127	91.07%	8.93%
18	3,981	398	4,379	90.91%	9.09%
30	2,608	284	2,892	90.18%	9.82%
10	2,652	296	2,948	89.96%	10.04%
13	2,431	278	2,709	89.74%	10.26%
14	2,822	323	3,145	89.73%	10.27%
06	2,226	263	2,489	89.43%	10.57%
17	1,979	237	2,216	89.31%	10.69%
24	2,796	343	3,139	89.07%	10.93%
02	5,184	646	5,830	88.92%	11.08%
27	1,308	164	1,472	88.86%	11.14%
26	4,646	614	5,260	88.33%	11.67%
25	308	42	350	88.00%	12.00%
34	2,390	355	2,745	87.07%	12.93%
35	2,437	387	2,824	86.30%	13.70%
09	2,583	430	3,013	85.73%	14.27%
23	1,611	281	1,892	85.15%	14.85%
33	314	62	376	83.51%	16.49%
11	1,329	268	1,597	83.22%	16.78%
29	830	201	1,031	80.50%	19.50%
28	224	57	281	79.72%	20.28%
20	368	115	483	76.19%	23.81%
05	2,102	721	2,823	74.46%	25.54%
MISC	352	654	1,006	34.99%	65.01%
Total	79,649	9,839	89,488	89.01%	10.99%

(In Order by Station Number)

Station	On-time	Late	Total	% On-time	% late
01	4,259	264	4,523	94.16%	5.84%
02	5,184	646	5,830	88.92%	11.08%
03	3,961	377	4,338	91.31%	8.69%
04	4,557	335	4,892	93.15%	6.85%
05	2,102	721	2,823	74.46%	25.54%
06	2,226	263	2,489	89.43%	10.57%
07	1,803	128	1,931	93.37%	6.63%
08	4,008	227	4,235	94.64%	5.36%
09	2,583	430	3,013	85.73%	14.27%
10	2,652	296	2,948	89.96%	10.04%
11	1,329	268	1,597	83.22%	16.78%
12	2,295	188	2,483	92.43%	7.57%
13	2,431	278	2,709	89.74%	10.26%
14	2,822	323	3,145	89.73%	10.27%
15	1,103	81	1,184	93.16%	6.84%
16	4,112	327	4,439	92.63%	7.37%
17	1,979	237	2,216	89.31%	10.69%
18	3,981	398	4,379	90.91%	9.09%
19	1,923	127	2,050	93.80%	6.20%
20	368	115	483	76.19%	23.81%
21	1,937	190	2,127	91.07%	8.93%
22	1,081	91	1,172	92.24%	7.76%
23	1,611	281	1,892	85.15%	14.85%
24	2,796	343	3,139	89.07%	10.93%
25	308	42	350	88.00%	12.00%
26	4,646	614	5,260	88.33%	11.67%
27	1,308	164	1,472	88.86%	11.14%
28	224	57	281	79.72%	20.28%
29	830	201	1,031	80.50%	19.50%
30	2,608	284	2,892	90.18%	9.82%
31	1,129	85	1,214	93.00%	7.00%
33	314	62	376	83.51%	16.49%
34	2,390	355	2,745	87.07%	12.93%
35	2,437	387	2,824	86.30%	13.70%
MISC	352	654	1,006	34.99%	65.01%
Total	79,649	9,839	89,488	89.01%	10.99%

Source: 6-Percent Late by Station
Tab: Pivot Table-Late by Station

**ANALYSIS OF SAN JOSE EMS MEDICAL CODE 3 RESPONSE TIME
 JULY 1, 2012 TO APRIL 30, 2014
 PERFORMANCE IMPROVEMENT REQUIRED TO ACHIEVE 90 PERCENT COUNTY CONTRACT STANDARD**

	Actual	Less 1 second	Less 2 seconds	Less 5 seconds	Less 8 seconds	Less 10 seconds
Total Medical Code 3	89,517	89,517	89,517	89,517	89,517	89,517
On-time	79,668	79,774	79,868	80,166	80,469	80,637
Late	9,849	9,743	9,649	9,351	9,048	8,880
% On-time	89.00%	89.12%	89.22%	89.55%	89.89%	90.08%

Note: To achieve the 90.00% on-time performance goal, Code 3 Medical Responses would need to be reduced by an average of 10 seconds, or Late Code 3 Medical Responses would have had to be reduced by 969, from 9,849 to 8,880. 2nd due response analysis shows that 2nd due units accounted for about 14.00% of all Code 3 medical responses, resulting in 2,823 late responses. Consequently, reducing the 2nd due response rate from 14.00% to about 9.19% would also enable the City to achieve a 90.00% On-time medical code 3 response rate.

Source: ANALYSIS JUL 2012 - APR 2014 (8-27 & 9-10)
 Tab: Anal Med Code 3 Perf

LATE CODE 3 EMS RESPONSES BY HOUR OF DAY AND STATION
JULY 2012 TO APRIL 2014

Hour of Day	Station Number																								Total										
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		25	26	27	28	29	30	31	33	34	35
0:00 - 0:59	21	34	21	18	32	10	6	14	13	12	9	6	12	16	5	18	11	16	4	2	9	5	7	14	1	21	4	2	13	13	7	7	16	21	420
1:00 - 1:59	27	36	18	11	42	10	9	10	17	18	5	11	15	18	9	11	12	22	4	2	8	5	18	16	2	23	4	3	11	22	2	2	25	16	464
2:00 - 2:59	16	36	17	5	19	11	5	7	24	17	9	6	18	16	6	18	8	15	8	3	13	2	10	15	1	38	5	1	5	17	7	1	18	31	428
3:00 - 3:59	8	26	21	12	22	11	7	9	16	4	10	9	10	17	0	15	8	14	8	2	12	6	19	10	0	22	3	0	4	6	5	3	18	13	350
4:00 - 4:59	8	21	10	7	21	6	5	2	22	15	13	4	8	11	8	9	12	31	3	1	6	4	9	10	3	28	5	2	4	9	3	4	15	12	331
5:00 - 5:59	5	14	13	11	25	3	2	10	20	8	11	6	10	13	3	11	12	15	7	9	7	2	7	10	2	24	7	3	4	15	4	3	12	15	323
6:00 - 6:59	10	20	14	9	27	13	3	5	20	6	9	4	17	8	3	12	13	12	4	5	4	6	6	17	1	24	7	2	4	13	3	6	8	11	326
7:00 - 7:59	9	18	11	19	38	12	5	5	22	10	10	5	10	15	4	9	5	15	3	8	6	6	13	13	0	26	4	2	6	15	3	3	14	11	355
8:00 - 8:59	12	22	12	16	34	13	7	9	20	9	10	4	9	13	4	9	3	7	6	8	8	4	12	21	2	23	11	3	10	14	0	2	19	16	372
9:00 - 9:59	2	29	17	14	27	9	8	13	23	12	8	9	17	17	2	7	10	22	7	6	8	1	13	7	7	22	10	3	14	8	3	2	15	16	388
10:00 - 10:59	6	36	18	18	35	18	2	15	24	18	26	9	15	11	6	13	15	17	12	3	11	5	13	10	2	27	11	4	8	10	2	2	13	10	445
11:00 - 11:59	10	32	17	28	37	14	6	15	24	18	15	6	14	16	1	24	13	12	10	5	14	5	21	13	1	25	10	3	13	14	1	3	19	20	479
12:00 - 12:59	4	25	14	10	30	15	4	12	20	5	19	8	10	12	3	15	9	11	5	11	7	2	15	20	1	26	8	5	7	6	4	2	13	12	370
13:00 - 13:59	13	23	16	12	29	10	4	6	15	13	10	12	14	13	2	9	11	11	6	4	4	3	7	15	5	23	5	2	6	9	4	4	14	13	347
14:00 - 14:59	8	34	19	24	36	15	9	12	15	12	10	7	18	2	20	10	17	2	5	5	3	16	15	2	24	7	3	7	11	2	1	12	16	409	
15:00 - 15:59	16	20	14	10	31	11	10	9	15	12	11	9	8	10	4	26	8	13	6	1	15	2	10	15	2	33	9	5	10	14	3	1	15	21	399
16:00 - 16:59	7	39	17	22	33	11	3	13	19	16	9	8	10	24	2	12	8	25	1	7	1	4	13	24	3	28	9	3	12	11	8	3	11	23	439
17:00 - 17:59	11	31	22	22	49	7	7	10	24	18	13	11	9	7	2	18	18	13	2	7	6	4	7	18	1	26	13	0	9	11	6	1	15	23	441
18:00 - 18:59	16	26	19	11	26	15	4	5	15	18	12	9	13	13	2	18	8	16	4	7	14	3	13	21	1	28	6	1	13	19	5	2	19	13	415
19:00 - 19:59	6	24	17	8	30	13	2	8	19	12	6	8	9	7	3	11	4	16	2	5	7	2	8	12	3	34	4	2	4	8	3	2	13	17	329
20:00 - 20:59	11	23	22	14	22	9	7	12	10	13	6	10	13	11	4	11	12	23	6	4	7	1	10	16	0	27	9	2	7	10	3	1	10	15	361
21:00 - 21:59	12	23	12	13	23	13	3	8	11	5	11	7	8	9	1	8	4	17	3	6	8	7	8	12	0	19	5	1	10	10	2	2	22	15	318
22:00 - 22:59	11	25	5	10	30	4	2	7	12	8	12	9	9	2	11	14	22	3	3	5	6	12	2	2	22	5	3	11	8	3	2	11	14	314	
23:00 - 23:59	15	29	11	11	23	10	7	11	10	16	14	8	13	19	2	11	9	16	10	1	4	3	14	17	0	21	3	2	9	10	2	3	7	13	354
Total	264	646	377	395	721	263	127	227	430	295	268	188	278	323	80	326	237	398	126	115	189	91	281	343	42	614	164	57	201	283	85	62	354	387	9,177

Note: 9 Stations had the highest or second highest number of late responses between 1:00-1:59 am, 10:00-10:59 am, and 11:00-11:59 am.

On a City-wide basis, the greatest number of late responses occurred between 11:00-11:59 am, followed by 1:00-1:59 am.

Hours of high number of late responses

Source: 7-Late by Hour of Day & Station
Tab: Late Hr of Day & Station

**Analysis of Late Code 3 Response Rates by Station and Comparison to Performance of Adjacent Stations
July 2012 through April 2014**

Station	Address	Zip	On-time	Late	Total	Percent Late	Adjacent Stations with a Lower Rate of Late Responses		% Lower Late Response Rate by Adj. Stations	
							Percent Late	Percent Late		
5	1380 North 10th Street	95112	2,102	721	2,823	25.54%	(1) 5.84%	(23) 14.85%	9.75%	
20	1433 Airport Boulevard	95110	368	115	483	23.81%	No adjacent stations with a late response rate at least 1.00% lower	(34) 12.93%	62%	
28	19911 Mckean Road	95120	224	57	281	20.28%	(12) 7.57%	(27) 11.14%	NA	
29	199 Innovation Drive	95134	830	201	1,031	19.50%	(23) 14.85%	(35) 13.70%	10.04%	
11	2840 The Villages Parkway	95135	1,329	268	1,597	16.78%	(18) 9.09%	(25) 12.00%	13.43%	
23	1771 Via Cinco de Mayo	95132	1,611	281	1,892	14.85%	(19) 6.20%	(31) 7.00%	10.18%	
9	3410 Ross Avenue	95124	2,583	430	3,013	14.27%	(6) 10.57%	(34) 12.93%	9.57%	
35	135 Poughkeepsie Road	95123	2,437	387	2,824	13.70%	(13) 10.26%	(17) 10.69%	10.51%	
34	1634 Las Plumas Avenue	95133	2,390	355	2,745	12.93%	(12) 7.57%	(27) 11.14%	9.27%	
25	1525 Wilson Way	95002	308	42	350	12.00%	(2) 11.08%	(19) 6.20%	7.55%	
26	528 Tully Road	95111	4,646	614	5,260	11.67%	No adjacent stations with a late response rate at least 1.00% lower	(13) 10.26%	NA	
27	6027 San Ignacio Road	95119	1,308	164	1,472	11.14%	(3) 8.69%	(18) 9.09%	8.85%	
2	2933 Alum Rock Avenue	95127	5,184	646	5,830	11.08%	No adjacent stations with a late response rate at least 1.00% lower	(16) 7.37%	NA	
24	2525 Aborn Road	95121	2,796	343	3,139	10.93%	(8) 5.36%	(16) 7.37%	6.97%	
17	5170 Coniston Way	95118	1,979	237	2,216	10.69%	(18) 9.09%	(21) 8.93%	37%	
6	1386 Cherry Avenue	95125	2,226	263	2,489	10.57%	(22) 7.76%	(16) 7.37%	26%	
14	1201 San Thomas Aquino Road	95117	2,822	323	3,145	10.27%	(4) 6.85%	(3) 8.69%	28%	
13	4380 Pearl Avenue	95136	2,431	278	2,709	10.26%	(12) 7.57%	(21) 8.93%	26%	
10	511 South Monroe Street	95128	2,652	296	2,948	10.04%	(4) 6.85%	(16) 7.37%	7.67%	
30	454 Auzerals	95126	2,608	284	2,892	9.82%	(1) 5.84%	(4) 6.85%	26%	
18	4430 South Monterey Road	95111	3,981	398	4,379	9.09%	(7) 6.63%	(3) 8.69%	26%	
21	1749 Mount Pleasant Road	95148	1,937	190	2,127	8.93%	(12) 7.57%	(4) 6.85%	29%	
3	98 Martha Street	95112	3,961	377	4,338	8.69%	(16) 7.37%	(31) 7.00%	17%	
22	6461 Bose Lane	95120	1,081	91	1,172	7.76%	(8) 5.36%	(3) 8.69%	20%	
12	5912 Cahalan Avenue	95123	2,295	188	2,483	7.57%	No adjacent stations with a late response rate at least 1.00% lower	(8) 5.36%	38%	
16	2001 South King Road	95122	4,112	327	4,439	7.37%	No adjacent stations with a late response rate at least 1.00% lower	(3) 8.69%	NA	
31	3100 Ruby Avenue	95135	1,129	85	1,214	7.00%	No adjacent stations with a late response rate at least 1.00% lower	(4) 6.85%	NA	
4	710 Leigh Avenue	95128	4,557	335	4,892	6.85%	No adjacent stations with a late response rate at least 1.00% lower	(3) 8.69%	NA	
15	1248 Blaney Avenue	95129	1,103	81	1,184	6.84%	No adjacent stations with a late response rate at least 1.00% lower	(4) 6.85%	NA	
7	800 Emory Street	95126	1,803	128	1,931	6.63%	No adjacent stations with a late response rate at least 1.00% lower	(3) 8.69%	NA	
19	1025 Piedmont Road	95132	1,923	127	2,050	6.20%	No adjacent stations with a late response rate at least 1.00% lower	(3) 8.69%	NA	
1	225 North Market Street	95110	4,259	264	4,523	5.84%	No adjacent stations with a late response rate at least 1.00% lower	(3) 8.69%	NA	
8	802 East Santa Clara Street	95112	4,008	227	4,235	5.36%	No adjacent stations with a late response rate at least 1.00% lower	(3) 8.69%	NA	
Average of 21 Stations									5.36%	32%

Source: 6-Percent Late by Station
Tab: Adjacent Station Comparison

**ANALYSIS OF CODE 3 EMS RESPONSES BY STATION
1ST DUE vs. 2ND DUE TIMELINESS
JULY 2012 TO APRIL 2014**

1st Due Responses				
Station	On-Time	Late	Total	% Late
01	3,906	219	4,125	5.3%
02	4,828	543	5,371	10.1%
03	3,078	207	3,285	6.3%
04	4,093	278	4,371	6.4%
05	1,250	195	1,445	13.5%
06	1,910	143	2,053	7.0%
07	1,609	98	1,707	5.7%
08	3,310	137	3,447	4.0%
09	2,452	369	2,821	13.1%
10	2,269	191	2,460	7.8%
11	1,222	185	1,407	13.1%
12	2,069	131	2,200	6.0%
13	2,312	238	2,550	9.3%
14	2,745	317	3,062	10.4%
15	1,047	59	1,106	5.3%
16	3,873	239	4,112	5.8%
17	1,793	183	1,976	9.3%
18	3,796	352	4,148	8.5%
19	1,608	80	1,688	4.7%
20	348	113	461	24.5%
21	1,732	141	1,873	7.5%
22	1,026	69	1,095	6.3%
23	1,420	225	1,645	13.7%
24	2,354	242	2,596	9.3%
25	286	26	312	8.3%
26	4,389	594	4,983	11.9%
27	1,138	103	1,241	8.3%
28	209	54	263	20.5%
29	767	169	936	18.1%
30	2,436	279	2,715	10.3%
31	1,047	53	1,100	4.8%
34	1,360	240	1,600	15.0%
35	2,007	270	2,277	11.9%
Total	69,689	6,742	76,431	8.82%

2nd Due Responses				
Station	On-Time	Late	Total	% Late
01	354	53	407	13.0%
02	364	133	497	26.8%
03	883	185	1,068	17.3%
04	470	74	544	13.6%
05	852	548	1,400	39.1%
06	315	125	440	28.4%
07	194	35	229	15.3%
08	697	100	797	12.5%
09	127	74	201	36.8%
10	386	117	503	23.3%
11	107	91	198	46.0%
12	226	64	290	22.1%
13	119	47	166	28.3%
14	76	22	98	22.4%
15	55	25	80	31.3%
16	239	101	340	29.7%
17	186	66	252	26.2%
18	185	62	247	25.1%
19	317	53	370	14.3%
20	20	7	27	25.9%
21	205	59	264	22.3%
22	55	26	81	32.1%
23	191	69	260	26.5%
24	441	119	560	21.3%
25	22	16	38	42.1%
26	256	56	312	17.9%
27	170	68	238	28.6%
28	15	4	19	21.1%
29	63	44	107	41.1%
30	172	21	193	10.9%
31	82	35	117	29.9%
34	1,031	127	1,158	11.0%
35	429	133	562	23.7%
Total	9,304	2,759	12,063	22.87%

Note: Data excludes Station 33 which is closed.

Source: 1st Due vs 2nd Due
Tab: Summary

**Comparison of 2nd Due EMS Code 3 Late Responses
Two-ALS Unit vs. One-ALS Unit Stations
July 2012 to April 2014**

Station	EMS Units				Station	Late Code 3 EMS Responses			Percent 2nd Due Late of Total Late
	Engine	Truck	Squad	Total		1st Due	2nd Due	Total	
<i>One ALS Unit Stations</i>									
03	1	0	0	1	03	207	185	392	49%
05	1	0	0	1	05	195	548	743	76%
06	1	0	0	1	06	143	125	268	48%
07	1	0	0	1	07	98	35	133	28%
08	1	0	0	1	08	137	100	237	44%
10	1	0	0	1	10	191	117	308	40%
11	1	0	0	1	11	185	91	276	34%
12	1	0	0	1	12	131	64	195	34%
15	1	0	0	1	15	59	25	84	31%
17	1	0	0	1	17	183	66	249	28%
19	1	0	0	1	19	80	53	133	42%
20	1	0	0	1	20	113	7	120	6%
21	1	0	0	1	21	141	59	200	31%
22	1	0	0	1	22	69	26	95	29%
23	1	0	0	1	23	225	69	294	25%
24	1	0	0	1	24	242	119	361	35%
25	1	0	0	1	25	26	16	42	38%
27	1	0	0	1	27	103	68	171	41%
28	1	0	0	1	28	54	4	58	7%
31	1	0	0	1	31	53	35	88	41%
35	0	1	0	1	35	270	133	403	34%
Subtotal	20	1	0	21	Subtotal	2,905	1,945	4,850	
					Avg	138	93	231	40%
<i>Two ALS Unit Stations</i>									
01	1	1	0	2	01	219	53	272	20%
02	1	1	0	2	02	543	133	676	21%
04	1	0	1	2	04	278	74	352	22%
09	1	1	0	2	09	369	74	443	17%
13	1	1	0	2	13	238	47	285	17%
14	1	1	0	2	14	317	22	339	7%
16	1	1	0	2	16	239	101	340	31%
18	1	0	1	2	18	352	62	414	16%
26	1	0	1	2	26	594	56	650	9%
29	1	1	0	2	29	169	44	213	22%
30	0	1	1	2	30	279	21	300	7%
34*	1	0	1	2	34	240	127	367	36%
33**					33				
Subtotal	11	8	5	24	Subtotal	3,837	814	4,651	
Total	31	9	5	45	Avg	320	68	388	18%
					Total	6,742	2,759	9,501	29%
12 Stations with 2 ALS units						3,837	814	4,651	18%
21 Stations with 1 ALS unit						2,905	1,945	4,850	40%

* Station 34 ALS unit is an Urban Search and Rescue

**Station 33 is closed.

Source: 1-ANALYSIS JUL 2012-APR 2014 (8-27 & 9-10)

Tab: 1 ALS Unit vs 2 ALS Unit Compare

**CODE 3 MEDICAL RESPONSE TURNOUT TIME BY STATION AND SHIFT
APPARATUS FROM EACH RESPECTIVE STATION ONLY
JULY 1, 2012 TO APRIL 30, 2014**

(IN STATION NUMBER ORDER)

Station	Number of Incidents	Turnout Time			Station Wt. Avg.
		A Shift	B Shift	C Shift	
1	4,067	0:01:33	0:01:40	0:01:29	0:01:34
2	5,296	0:01:33	0:01:40	0:01:38	0:01:34
3	3,235	0:01:26	0:01:30	0:01:34	0:01:30
4	4,312	0:01:06	0:01:30	0:01:30	0:01:22
5	1,419	0:01:14	0:01:30	0:01:18	0:01:20
6	2,035	0:01:23	0:01:32	0:01:19	0:01:25
7	1,692	0:01:46	0:01:41	0:01:31	0:01:39
8	3,389	0:01:27	0:01:26	0:01:13	0:01:22
9	2,778	0:01:33	0:01:38	0:01:42	0:01:37
10	2,442	0:01:13	0:01:39	0:01:35	0:01:29
11	1,390	0:01:37	0:01:38	0:01:51	0:01:42
12	2,184	0:01:24	0:01:28	0:01:31	0:01:28
13	2,518	0:01:25	0:01:51	0:01:29	0:01:35
14	3,026	0:01:20	0:01:37	0:01:32	0:01:30
15	1,099	0:01:22	0:01:32	0:01:25	0:01:26
16	4,047	0:01:18	0:01:30	0:01:31	0:01:26
17	1,938	0:01:36	0:01:29	0:01:33	0:01:33
18	4,107	0:01:28	0:01:07	0:01:20	0:01:18
19	1,663	0:01:20	0:01:29	0:01:34	0:01:28
20	453	0:01:25	0:01:31	0:01:24	0:01:27
21	1,840	0:01:11	0:01:28	0:01:25	0:01:21
22	1,068	0:01:30	0:01:17	0:01:30	0:01:25
23	1,615	0:01:49	0:01:59	0:01:44	0:01:51
24	2,567	0:01:21	0:01:32	0:01:24	0:01:25
25	306	0:01:12	0:01:19	0:01:24	0:01:18
26	4,913	0:01:28	0:01:30	0:01:36	0:01:31
27	1,230	0:01:25	0:01:17	0:01:09	0:01:17
28	258	0:01:15	0:01:20	0:00:56	0:01:11
29	918	0:01:42	0:01:29	0:01:37	0:01:36
30	2,663	0:01:44	0:01:50	0:01:33	0:01:42
31	1,086	0:01:11	0:01:33	0:01:41	0:01:28
34	1,581	0:01:27	0:01:39	0:01:41	0:01:36
35	2,259	0:01:29	0:01:35	0:01:43	0:01:36
TOTAL	75,394				
AVERAGE	2,285	0:01:26	0:01:32	0:01:30	0:01:29

Source: 5-Turnout Time by Shift
Tab: Summary Turnout Time

Source: 5-Turnout Time by Shift
Tab: Summary Turnout Time

* No units from Station 33 reported dispatched during this period. Nearly all units dispatched were from Station 13.

**City of San Jose
Monthly EMS Report for October 2014**

SUMMARY

Total Incidents	Fire and Other	Total Medical	Medical Code 3			Medical Code 2			% On-time
			Total	On-time	Late	Total	On-time	Late	
XXXXX	XXXX	XXXXX	XXXXX	XXXXX	XXX	XXXX	XXXX	XX	XX.XX%

DETAIL

Total Incidents	XXXXXXXX
Less Fire and Other Incidents	(XXXXXX)
Total Medical Incidents	XXXXXXXX
Less Incidents with no vehicle dispatched	(XXXXXX)
Less Code 3 Incidents cancelled in less than 8 minutes	(XXXXXX)
Less Code 2 Incidents cancelled in less than 13 minutes	(XXXXXX)
Less incidents the responsibility of other jurisdictions	(XXXXXX)
Less incidents qualifying as contract exceptions*	(XXXXXX)
Total Reportable Medical Incidents	XXXXXXXX
<u>Medical Code 3:</u>	
Total Reported Code 3 Incidents	XXXXXXXX
Less Late Reported Code 3 Incidents	(XXXXXX)
On-time Reported Code 3 Incidents	XXXXXXXX
Medical Code 3 On-time Percentage	XX.XX%
<u>Medical Code 2:</u>	
Total Reported Code 2 Incidents	XXXXXXXX
Less Late Reported Code 2 Incidents	(XXXXXX)
On-time Reported Code 2 Incidents	XXXXXXXX
Medical Code 2 On-time Percentage	XX.XX%

* Requires a separate written report explaining the basis of each reported exception pursuant to Contract Annex B Section V.E.

Note: Contract Annex B, Section XII. Requires City to report its response time performance within 30 days of the close of the preceding month in a manner and format acceptable to the County.

Source: 1-ANALYSIS JUL 2012 - APR 2014 (8-27)

Goal	Project	Status	Timeline/Completion
Reliable Response Time Data	1. Analyze/Validate Response Time Data	Completed	April-14
	2. Enable "HALO" Unit Tracking	In Progress	September-14
	3. Establish Data Warehouse	In Progress	June-15
	4. Business Intelligence Tool (i.e. Dashboards)	In Progress	October-15
	5. Data Collection/Automation	In Progress	Ongoing
Minimize Dispatch Time	6. Implement Early Dispatch	Completed	March-14
	7. Response Area Mapping	In Progress	September-14
	8. Pro-QA Update (Dispatch software)	In Progress	September-14
	9. Base Map Update	In Progress	October-14
Minimize Turnout Time	10. Fire Communications Staffing	4 person academy begin. 8/14	May-15
	11. 911 Phone System Upgrade	In Planning	October-15
	12. Turnout Time Pilot	In Progress	January 2016 (Final Report)
Minimize Travel Time	13. Unit Availability	Decentralized Training	August-14
	14. Emerg. Service Zones Refinement	In Progress	December-14
	15. Apparatus Move-ups	Evaluating	January-15
	16. Navigation Technology	In Planning	December-15
	17. Closest Unit Dispatch	Technology in place	July-16
	18. Deployment Refinements	Data Analysis	July-16
	19. CAD to CAD Link (countywide apparatus locations)	In Process -SVRIA Dependent	TBD (SVRIA)
	20. Border Drops	In Process -SVRIA Dependent	TBD (SVRIA)
	21. Signal Preemption	Requires Funding	TBD
	22. Impact on SJFD Response Performance	In Progress	September-14
Assess County EMS Response Time Compliance	23. Organizational Review Study	Developing RFP	Winter 2015
	24. Implement Omega Protocol (min. out of service)	Requires County EMS Cooperation	TBD

**SAN JOSE FIRE EMERGENCY MEDICAL RESPONSE BY STATION
AVERAGE RESPONSE TIME IN MINUTES
JULY 2012 THROUGH APRIL 2014**

(In Station Number Order)

Station	Code 3 Medical Responses				Average Resp Time (Minutes)
	Ontime	Late	Total	Percent On-time	
01	4,259	264	4,523	94.2%	5.04
02	5,184	646	5,830	88.9%	5.81
03	3,961	377	4,338	91.3%	5.46
04	4,557	335	4,892	93.2%	5.24
05	2,102	721	2,823	74.5%	6.81
06	2,226	263	2,489	89.4%	5.78
07	1,803	128	1,931	93.4%	5.57
08	4,008	227	4,235	94.6%	4.80
09	2,583	430	3,013	85.7%	6.08
10	2,652	296	2,948	90.0%	5.85
11	1,329	268	1,597	83.2%	6.10
12	2,295	188	2,483	92.4%	5.51
13	2,431	278	2,709	89.7%	5.59
14	2,822	323	3,145	89.7%	5.73
15	1,102	81	1,183	93.2%	5.62
16	4,112	327	4,439	92.6%	5.22
17	1,979	237	2,216	89.3%	5.85
18	3,981	398	4,379	90.9%	5.72
19	1,923	127	2,050	93.8%	5.38
20	368	115	483	76.2%	6.22
21	1,937	190	2,127	91.1%	5.55
22	1,081	91	1,172	92.2%	5.46
23	1,611	281	1,892	85.1%	6.22
24	2,796	343	3,139	89.1%	5.81
25	308	42	350	88.0%	5.76
26	4,646	615	5,261	88.3%	5.83
27	1,308	164	1,472	88.9%	5.64
28	224	57	281	79.7%	6.56
29	830	201	1,031	80.5%	6.46
30	2,608	284	2,892	90.2%	5.52
31	1,129	85	1,214	93.0%	5.56
33	314	62	376	83.5%	6.47
34	2,390	355	2,745	87.1%	6.34
35	2,437	387	2,824	86.3%	6.20
Other	372	663	1,035	35.9%	16.07
Total	79,668	9,849	89,517	89.0%	5.80

(In Average Response Time Order)

Station	Code 3 Medical Responses				Average Resp Time (Minutes)
	Ontime	Late	Total	Percent On-time	
08	4,008	227	4,235	94.6%	4.80
01	4,259	264	4,523	94.2%	5.04
16	4,112	327	4,439	92.6%	5.22
04	4,557	335	4,892	93.2%	5.24
19	1,923	127	2,050	93.8%	5.38
03	3,961	377	4,338	91.3%	5.46
22	1,081	91	1,172	92.2%	5.46
12	2,295	188	2,483	92.4%	5.51
30	2,608	284	2,892	90.2%	5.52
21	1,937	190	2,127	91.1%	5.55
31	1,129	85	1,214	93.0%	5.56
07	1,803	128	1,931	93.4%	5.57
13	2,431	278	2,709	89.7%	5.59
15	1,102	81	1,183	93.2%	5.62
27	1,308	164	1,472	88.9%	5.64
18	3,981	398	4,379	90.9%	5.72
14	2,822	323	3,145	89.7%	5.73
25	308	42	350	88.0%	5.76
06	2,226	263	2,489	89.4%	5.78
24	2,796	343	3,139	89.1%	5.81
02	5,184	646	5,830	88.9%	5.81
26	4,646	615	5,261	88.3%	5.83
10	2,652	296	2,948	90.0%	5.85
17	1,979	237	2,216	89.3%	5.85
09	2,583	430	3,013	85.7%	6.08
11	1,329	268	1,597	83.2%	6.10
35	2,437	387	2,824	86.3%	6.20
20	368	115	483	76.2%	6.22
23	1,611	281	1,892	85.1%	6.22
34	2,390	355	2,745	87.1%	6.34
29	830	201	1,031	80.5%	6.46
33	314	62	376	83.5%	6.47
28	2,390	355	2,745	87.1%	6.34
05	2,102	721	2,823	74.5%	6.81
Other	372	663	1,035	35.9%	16.07
Total	79,668	9,849	89,517	89.0%	5.80

Source: 1 - ANALYSIS JUL 2012 - Apr 2014(8-27 89-10) (Autosaved)

Tab: Summary Tables



San José Fire Department

RUBEN TORRES, FIRE CHIEF

November 24, 2014

Board of Supervisors Management Audit Division
70 West Hedding Street
10th Floor, East Wing
San Jose, CA 95110

Re: San José Fire Department Response to Limited Scope Management Audit

This letter serves to provide the Board of Supervisors Management Audit Division with the San José Fire Department's response to the recent draft report of the Limited Scope Management Audit of the Emergency Response Function of the San José Fire Department.

Background

The Management Audit Division of the Santa Clara County Board of Supervisors released the revised draft report regarding the Limited Scope Management Audit of the Emergency Response Function of the City of San José Fire Department on October, 27, 2014. The audit was performed at the direction of the Santa Clara County Board of Supervisors, and its stated purpose was to, "...focus on the policies and procedures employed by the San José Fire Department to respond to 911-EMS calls, as well as to validate the data provided by the department for the audit for the timeframe between July 2012 and April 2014."

General Response to the Audit Draft

In general, the San José Fire Department ("SJFD," "the Department") finds the audit to be an accurate representation of the department's Emergency Medical Services delivery. The audit contains many recommendations for SJFD, but it does not fully explore the interrelated service providers within the entire Santa Clara County Emergency Medical System. As a result, external dependencies are not addressed. For example the SJFD first responder model relies heavily on the timeliness of the transporting unit's response. Many of the audit's recommendations do, however, provide an opportunity for collaborative solutions among the agencies participating in the system, including County EMS, Rural/Metro Ambulance, affiliated hospitals, and other facilities in the county.

Despite the exclusion of an analysis of the interrelated service providers, SJFD is pleased that 11 of the audit's 23 recommendations align with the department's existing Response Time Work



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Plan that was initiated in April 2014, discussed with the City Council in May 2014, and detailed in an informational memorandum to the San José City Council in September 2014 (Attachment #1). Of these 11 Recommendations, 2 have been implemented. While not included in the Response Time Work Plan, the SJFD will also work on four of the recommendations and has implemented one additional recommendation. The remaining seven recommendations would require inter-agency cooperation and coordination as indicated in each response. Although SJFD would have a significant role, it is anticipated that the County would take the lead in addressing the majority of these inter-agency recommendations.

Table #1 below contains the SJFD Response Time Work Plan. It is a modified version of County Auditor's Attachment #11 contained in the Revised Draft Report of the Limited Scope Management Audit. This Work Plan identifies the 9 project items that align with 11 of the audit recommendations.

Table #1 – SJFD Response Time Work Plan

Project	Status	Timeline/Completion	County Audit Reference
Reliable Response Time Data			
1. Analyze/Validate Response Time Data	Completed	4/1/2014-Ongoing	
2. Enable "HALO" Unit Tracking	In Progress	February-15	Audit Reco.#14 Record en-route time
3. Establish Data Warehouse	In Progress	June-15	
4. Business Intelligence Tool (i.e. Dashboards)	In Progress	October-15	Audit Reco: #12,13 Monthly Reports
5. Data Collection/Automation	In Progress	Ongoing	
Minimize Dispatch Time			
6. Implement Early Dispatch	Completed	Nov/Dec-14	
7. Response Area Mapping	In Progress	February-15	Audit Reco.#2 review first-due area
8. Pro-QA Update (Dispatch software)	In Progress	December-15	
9. Base Map Update	In Progress	June-15	Audit Reco.# 3,4 Station Maps, electronic maps
10. Fire Communications Staffing	4 person academy begin. 8/14	May-15	
11. 911 Phone System Upgrade	In Planning	October-15	
Minimize Turnout Time			
12. Turnout Time Pilot	In Progress	January 2016 (Final Report)	
Minimize Travel Time			
13. Unit Availability	Decentralized Training	Ongoing	
14. Emerg. Service Zones Refinement	In Progress	March-15	Audit Reco.#2 review first-due area
15. Apparatus Move-ups	Evaluating	January-15	
16. Navigation Technology	In Planning	December-15	Audit Reco.# 3,4 Station Maps, electronic maps
17. Closest Unit Dispatch	Technology in place	July-16	Audit Reco.#2 review first-due area
18. Deployment Refinements	Data Analysis	July-16	
19. CAD to CAD Link (countywide apparatus locations)	In Process -SVRIA Dependent	TBD (SVRIA)	
20. Border Drops	In Process -SVRIA Dependent	TBD (SVRIA)	
21. Signal Preemption	Requires Funding	TBD	Audit Reco.#5,6,7,8 Signal Preemption
Assess County EMS Response Time Compliance			
22. Impact on SFD Response Performance	In Progress	Ongoing-County Audit	
Performance Standards			
23. Organizational Review Study	Developing RFP	Winter 2015	Audit Reco.#1
Maximize Unit Availability			
24. Implement Omega Protocol (min. out of service)	Requires Co. EMS Cooperation	TBD	

Department Response to General Audit Comments

1. Page 4 of the audit states:

"Validation of 911 Call Information Provided by the Fire Department to County EMS"

"Through this process we were able to confirm the accuracy of 100 percent of the data in our random sample related to the time a unit was dispatched, the final call type (medical, fire, or other), the final call type code (code 3-lights and sirens, or code 2-no lights and sirens), the time a unit arrived on scene, and if an on-time cancellation occurred."

Department Response: Following the Department-initiated reporting of issues with response-time calculations and methodology, SJFD began the process of extracting data directly from the Computer Aided Dispatch System in an effort to validate City and County reporting measures. Once this was complete, a third-party consultant validated that the methodology and data were accurate. The Department is pleased that the County Auditors were also able to confirm the accuracy of SJFD response time data for County EMS reporting purposes.

2. Page 7 of the audit states:

“Of the remaining balance of 142,979 incidents...approximately 16 percent...were fire or other incidents, and 84 percent were medical emergencies.”

Department Response: More precisely, 84% of calls to which SJFD responded were initially triaged as one of several types of medical incident codes. However, after Department resources arrived on scene and assessed the situation, SJFD data indicate that only 62% of incidents were medical-only in nature. There are multiple reasons for this difference. Three examples include:

- Although a call may be received reporting a medical emergency, there may be other components involved beyond only a medical emergency. One example would be a multiple-vehicle accident that the audit identifies as a “medical emergency” but may include the control of fuel leaking toward a storm drain; rendering the vehicle safe from airbag activation; traffic control; and patient extrication. Vehicle accidents represent a sizable number of the Department’s incidents and thus require more resources and training than a medical-only emergency.
- A call may be received reporting a fire with someone suffering a burn injury. In this case, the audit might not count this as a medical call, although it does have a medical component.
- A call may be received reporting a medical emergency, but upon arrival it was determined to have been incorrectly triaged or “un-triaged.” The actual incident found upon arrival could be a false call, a kitchen fire, or a police matter.

From the point of view of the County audit, it is understandable that the focus is on how the department handles the medical component of an incident. To accurately report SJFD’s calls by incident type, however, requires a deeper understanding of what was found on arrival and identifying the calls dispatched as non-EMS but that actually have an EMS component. That data was not requested in the audit.

3. Page 8 of the audit states:

“To provide the emergency services as described above, the San José Fire Department currently operates and staffs 33 stations with 31 fire engines (pumper trucks), nine ladder trucks, and five squads that respond to emergency calls in smaller urban rescue and other similar vehicles (a total of 45 Advanced Life Support (ALS) apparatus).”

Department Response: The audit does not mention that during the timeframe covered by the audit (July 2012-April 2014), SJFD “browned out” apparatus on a daily basis due to budget

reductions that were approved by the City Council to balance severe General Fund shortfalls. Engine 9 and Engine 29 were browned out on a daily basis resulting in a total of 43 ALS apparatus available, not 45.

4. Page 10 of the audit states:

“The range of average response times ranged from a low of 4.80 minutes at Station 8, to a high of 6.81 minutes at Station 5.”

Department Response: Similar to the response to #3 above, the analysis does not take into account that Station 5 was closed for 10 months due to construction from August 2, 2012, to June 10, 2013, creating longer travel distances and longer response times.

5. Table 1 on page 12

Department Response: Table 1 on page 12 of the audit uses the Fresno Fire Department as a comparison to the SJFD and other fire departments in Santa Clara County when discussing rate of responses by second-due stations. It should be noted that the Fresno Fire Department does not provide ALS service, nor do they respond to Alpha and Bravo type medical calls and therefore would not be an appropriate department for comparison purposes.

6. Page 25 of the audit states:

“Although the County contract specifically provides for numerous exceptions for various types of EMS incidents, during the period of this review (July 2012 through April 2014), the City did not track and report several categories of excludable incidents, including”:

- 1) Incidents in Suburban areas of the City, defined as areas with a population ranging from 51 to 100 per square mile. An on-time Code 3 EMS response in a Suburban area is 9:59 or less, and Code 2 is 14:59 or less. □
- 2) Incidents in Rural/Wilderness areas of the City, defined as areas with a population of 50 or fewer residents per square mile. An on-time Code 3 EMS response in a Rural/Wilderness area is 11:59 or less, and Code 2 is 21:59 or less.”

Department Response: The Department began applying these exceptions to the monthly response time reporting to the County in May 2014. They represent a very small percentage of overall incidents, and the aggregate reported response time performance is not measurably changed by their inclusion. Therefore, the department has not requested these exemptions retroactively.

7. Page 26 of the audit states:

“No station reported receiving monthly response time performance data regarding turnout time by station or shift or for any of the other 32 stations, nor did they receive overall response time performance data for Code 3 or Code 2 responses by each station or on a City-wide basis.”

Department Response: The Department included this in its SJFD Response Time Work Plan as Project #4 in Table 1. Response time performance is available on the SJFD’s website for

viewing by department staff and the public at <http://www.sanjoseca.gov/index.aspx?NID=2352>.

This Project is further discussed later in this memo in response to Audit Recommendations #12 and #13.

8. Page 26 of the audit states:

“The Department reported that it believes units having to wait for an ambulance to be a frequent problem, however, insufficient data had been compiled to quantify the extent of the problem. Reactivation of the station incident reporting field in “Firehouse” will enable such quantification.”

Department Response: This issue underscores the interrelationships among all EMS agencies in the County, as mentioned earlier. The SJFD did provide a random sampling of significant late responses by Rural Metro Ambulance. Additionally, SJFD believes it is the County EMS Agency’s responsibility to monitor and report on the contracted service provider’s performance.

9. Page 54 of the audit states:

“Standard NFPA 1710, which says that firefighters should be able to depart their station or other current location for the medical call location within 60 seconds of receiving notification of the call, and that Advanced Life Support crews should be able, once they begin traveling to the location, to arrive within eight minutes. This total turnout time plus travel time of nine minutes is one minute longer than the standard in the contract between the City and the County.”

Department Response: This inaccurately represents the NFPA Standard, leading to the incorrect conclusion that the NFPA Standard is one minute longer than the County requirement.

NFPA does state that firefighters should be able to depart their station or other current location (turnout) for a medical call within sixty (60) seconds of receiving notification of the call.

It then allows “480 seconds or less travel time for the arrival of an advanced life support (ALS) unit at an emergency medical incident where this service is provided by the fire department *provided a first responder with AED or basic life support (BLS) unit arrived in 240 seconds or less.*”

Therefore the NFPA standard requires the first arriving medical response unit to arrive within 300 seconds (5 minutes) of being dispatched. The contract between the City and the County requires the first arriving medical response unit to arrive within 8 minutes of being dispatched. The NFPA standard is three minutes *shorter* than the standard in the contract between the City and the County.

Response to Audit Recommendations

The audit concludes with 23 recommendations to improve department response times (#16 was repeated in the County Auditor’s Draft). It should be noted again that many of these recommendations are already identified in the SJFD Response Times Work Plan as either implemented or in process.

Considering this, the following are SJFD responses to the audit recommendations:

Audit Recommendation #1:

“The City determine if its current actual EMS response time performance and goals are being met by existing station and EMS unit resources, given the relatively high number of calls, population and square miles of responsibility per station when compared with other cities within the County and throughout California.”

Department Response: SJFD agrees with this recommendation. In fact, the SJFD’s Response Time Work Plan Project #23 (Organizational Review Study) fully addresses this recommendation. Specifically, the Study goal is to review current workload activities by types of service delivered, evaluate resource allocation to align with an outcomes-based service model, and recommend options to current resource allocation/deployment to improve delivery of services and align all services (suppression, medical, special operations, fire prevention).

Audit Recommendation #2:

“The San José Fire Department commence a comprehensive review of its first-due areas of responsibility for each station with consideration of the actual Code 3 response timeliness performance of each station in the realignment process. The Department should conduct an annual analysis of late Code 3 response rates by station, including a comparison to performance of adjacent stations, in order to identify and correct performance imbalances in the City-wide EMS system in a timely manner”

Department Response: SJFD partially agrees with this recommendation. Audit Recommendation #2 aligns with the SJFD’s Response Time Work Plan Projects #7 (Response Area Mapping), #14 (Emergency Service Zones Refinement), and #17 (Closest Unit Dispatch). The Department segments the entire city into small geographic areas called “emergency service zones.” The distance from each station to each ESZ is calculated, and the priority run order of responding apparatus is determined in order to send the appropriate apparatus that can respond most quickly. Over time these run orders must be reviewed and updated due to the introduction of new stations, movement of apparatus, change in street network, or change in traffic patterns. Additionally, based upon line personnel feedback, ESZs may be divided to better reflect that a portion of one ESZ should be handled differently than the remainder of that ESZ.

A thorough review of ESZ run orders as recommended by the computer aided dispatch system is being performed by the department and has a targeted completion date of March 2015 as identified in the SJFD’s Response Time Work Plan Project #14. Each emergency service zone will be examined and run orders will be determined by which station is the closest by distance traveled using existing street networks.

In addition to evaluating ESZ assignments, SJFD has begun work to plan the implementation of “closest unit dispatch” (Work Plan Project #17) with a targeted completion date of July 2016. Currently, the CAD system recommends a unit for an incident based upon the ESZ run order. With closest unit dispatch, the CAD will recommend a unit that is geographically closest to an incident (evaluated by using the existing street network, and the Department will no longer use ESZs but will instead optimize responses based on each specific address and the real-time location of each individual apparatus. Finally, the SJFD believes that conducting an annual

analysis of late code-3 responses is inadequate. Real time monitoring and reporting will provide the best opportunity to improve response time performance in a timely manner.

Audit Recommendations #3 and #4:

“The San José Fire Department obtain updated maps from Lynx Technologies, or another source, to provide all stations current maps to use on duty.”

“The San José Fire Department provide an alternative to the existing MDC on-board computers on fire vehicles, using iPads issued to firefighters, or other solutions based on approaches taken by other fire departments.”

Department Response: The SJFD agrees with these recommendations and they are in alignment with the SJFD Response Time Work Plan Projects #9 (Base Map Update) and #16 (Navigation Technology). Specifically, the SJFD is currently evaluating more advanced navigation technologies with a planned implementation date of December 2015. Several technologies and solutions will be evaluated, from using tablets to updating the existing Mobile Data Computers.

Audit Recommendations #5, #6 and #7:

“The San José Fire Department request the City Department of Transportation inspect Opticomm equipment at intersections for proper operation, starting with a request to firefighters to identify intersections where the equipment does not appear to be operating correctly.”

“The San José Fire Department, assisted by the County Emergency Medical Services Agency as a liaison, work with the County Roads and Airports Department to install Opticomm equipment at key intersections of the county-maintained expressway system that currently lack it.”

“The San José Fire Department install additional Opticomm equipment at key City intersections that do not have it, based on locations identified by firefighters, and prioritizing the locations City-wide based on EMS response volume.”

Department Response: The SJFD agrees with these recommendations. Expansion of the signal preemption device program is also included in the SJFD Response Time Work Plan Project #21 (Signal Preemption). It should be noted that “Opticom” is a brand name. The Department is evaluating other available technologies and possible partnerships with agencies having existing signal preemption equipment installed on San José roadways.

Audit Recommendation #8:

“The San José Fire Department provide in-station control of key traffic signals needed at some stations to permit fire vehicles to exit safely, as has been provided at Station 23. Stations 10, 18, and 22, because of their locations, are potential priorities for this step.”

Department Response: The SJFD agrees with this recommendation, which is included in Work Plan Project #21 (Signal Preemption), and is evaluating other available “in-station” technologies.

Audit Recommendation #9:

“The San José Fire Department request the Department of Transportation to consider fire vehicle needs in prioritizing street repairs, so as to provide smooth pavement on key access routes for firefighters, and in street design, so as not to impede travel time for fire vehicles.”

Department Response: The SJFD agrees with this recommendation. The City of San José has a well-documented pavement rehabilitation backlog that is estimated to total \$434 million. With the limited pavement funding available, street maintenance and repair efforts are focused primarily on spot repairs to address critical vehicular safety needs and to maintain the City Council designated Priority Street Network. As the City works to prioritize its limited pavement maintenance funding, this recommendation will be considered in tandem with road conditions and traffic safety data throughout San José and other interdepartmental discussions that may impact street selection such as repair needs of various underground utilities and other transportation related capital improvement projects.

Audit Recommendation #10:

“The San José Fire Department request the Police Department to properly enforce street parking restrictions in hillside residential areas where firefighters identify access problems due to narrow streets blocked by parked cars.”

Department Response: The SJFD agrees with this recommendation. The Department of Transportation manages the enforcement of on-street parking regulations and will work with the Fire Department to address parking compliance in areas of concern.

Audit Recommendation #11:

“The San José Fire Department reactivate the “exceptional circumstances” incident reporting field in Firehouse and direct all stations to again report circumstances that meet the County criteria for exemption from the response time calculations so that they can be included as requested exemptions in the City’s monthly report to County EMS.”

Department Response: The SJFD agrees with this recommendation. The “exceptional circumstances” report has been reactivated in the Firehouse Records Management System, which will allow for better recordkeeping and quantitative analysis of late response exemption requests.

Audit Recommendations #12 and #13:

“The San José Fire Department provide monthly emergency medical services response-time performance information to all fire stations, without firefighters having to access it themselves, so all firefighters can review their performance by shift and by station.”

“The San José Fire Department provide monthly reports on turnout time to all fire stations, without firefighters having to access these reports online themselves, so all firefighters can review performance by shift and station.”

Department Response: The SJFD agrees with these recommendations. In fact, the scope of these Recommendations has already been implemented and is included in the SJFD Response

Time Work Plan as Project #4 (Business Intelligence Tool). Response time performance data is posted on the SJFD's website for viewing by Department staff and the public (<http://www.sanjoseca.gov/index.aspx?NID=2352>). More detailed performance data is posted internally for station staff to review and make performance improvements. This capability will continue to be expanded upon with a goal of providing real-time "dashboard" reporting, making information available to all relevant department users. The planned completion of this project is October 2015.

Audit Recommendation #14:

"The City explore the feasibility of recording as the en-route time the time the fire station apparatus are identified as moving out of the station, based on the wireless connection between the on-board MDC computer and the dispatch center following the dispatch. If the apparatus is dispatched while in the field, the manual depressing of the en-route button may be necessary for such incidents."

Department Response: The SJFD agrees with this recommendation. The SJFD Response Time Work Plan Project #2 (Enable "HALO" Unit Tracking) will enable Automatic Vehicle Location (AVL) technology to track and automatically record the emergency response unit status (en-route, on-scene, etc.). This strategy will aid in the collection of response-time data, which will provide backup data where manual entry errors occur, or, if found reliable, replace manual entry. The planned completion for this project is February 2015.

Audit Recommendation #15:

"The San José Fire Department request the County of Santa Clara to develop additional policies limiting when the County Jail and the Valley Medical Center campus call 9-1-1 for assistance on medical emergencies, based on the existence of trained medical personnel at those facilities. These procedures should include the County potentially staging an ambulance at the jail during periods when non-emergency transports to other facilities occur."

Department Response: The SJFD agrees with this recommendation and will request the development of additional policies from the County. The impact of the high number of 9-1-1 emergency service response requests from the County Jail facility on unit availability has long been recognized and discussed with County EMS. Unfortunately, call volumes continue to be high. The SJFD will continue to discuss alternatives for jail staff in dealing with incidents that are not Priority 1 emergencies.

Similarly, the audit identifies the high number responses to congregate care facilities in response to interviewed firefighters' concerns about how responding to medical facilities with professionally trained staff ties up department resources. In fact, under the Emergency Medical Services Provider Agreement between the department and the County, Section 4.4.1 provides:

"...The County will work with Provider [Rural/Metro] to identify Alpha and Bravo type calls to the County Jail that will not require First Responder services (ALS or BLS) through use of the triage components of the Emergency Medical Dispatch System and protocols for clinical response and inter-facility transport."

The SJFD continues to be hopeful that the County will enforce this provision of the agreement. Department records reflect a total of 1,279 responses to County facilities during the audit time frame, and a total of 2,948 responses to other medical facilities.

Audit Recommendation #16 (as numbered in the Audit):

“The County of Santa Clara change the routing of 9-1-1 calls from the County Jail and the Valley Medical Center campus, so that those calls are answered by dispatchers at the County Communications dispatch center, rather than the San José Police Department dispatch center. County dispatchers would triage calls for medical assistance to determine if firefighter first responders, or only an ambulance for transport, were needed on each call. If firefighter response is needed, the calls would be transferred to the City for firefighter dispatching, as now occurs in County-governed areas served by City firefighters under agreements between the City and County.”

Department Response: The SJFD agrees with this recommendation. However, this is a recommendation directed towards the County and implementation will require the cooperation of and coordination with the County EMS Agency, County Jail, Valley Medical Center, and County Communications.

Audit Recommendation #16 (as numbered in Audit):

“The San José Fire Department adopt the www.whentocall911.com campaign developed in Florida, linking to that website, or adapting the materials for use on the Fire Department’s website, and developing posters and other materials for improved 9-1-1 education of residents.”

Department Response: The SJFD acknowledges this recommendation. However, similar to the response to audit recommendation #21 below, this recommendation suggests that the residents of the City of San José be isolated from the other populations being served by the County EMS System. This decision requires discussion and execution at the City and County policy-making level.

Audit Recommendation #17:

“The San José Fire Department, in conjunction with the County of Santa Clara Emergency Medical Services Agency, pursue a 9-1-1 abuse ordinance similar to what has been developed in Fresno County, as well as a version of the FDCARES program developed in Washington State in order to direct frequent individual 9-1-1 callers to social services assistance.”

Department Response: The SJFD acknowledges this recommendation. Further, the Santa Clara County Emergency Medical Services Provider Agreement between the County and Rural/Metro, Section 10.6, provides:

“...Upon approval by the county, R/M shall develop and implement various non-ambulance transport options for patients in need of non-emergent transportation. Upon approval by the County, R/M will implement a Resource Access Program to address the problem of high-frequency ambulance users. The program will integrate EMS with public health and specifically target the small contingency of County residents who inappropriately use 911 emergency

medical services in lieu of regular communicate care for non-emergency or psychiatric problems.”

To date, and to the best of the Department’s knowledge, no such program has been planned or implemented.

Further, as previously mentioned, the SJFD attempted to apply to the California EMS Authority to participate in the state-sponsored Community Paramedicine Program. However, County EMS, EMS Medical Director, and County CEO declined to support the City’s application. On page 43, the audit quotes the County Director of Emergency Medical Services response to the department’s application as follows:

“[The County EMS] agency declined to participate because it felt that the City’s proposal was not specific enough in how the proposed pilot program would operate and how its performance would be evaluated; was too large in proposing 30 paramedic participants for a pilot project; did not address the economic effects on the EMS system if a large volume of patients no longer required ambulance transport; and required extensive participation by the EMS Agency, in addition to its other duties.”

The EMS Director further stated, “...the [County EMS] Agency believed that the City should address its existing response-time problems first, before embarking on a new research initiative.”

First, regarding the comment about lack of specificity in the proposal, as illustrated in Attachment #2 of this response (Letter of Intent: San José Fire Department Community Paramedicine Program – Pilot Project Proposal), the Letter of Intent to the State of California EMS Authority included sections related to:

- Purpose and Objectives.
- Estimated Project Length.
- Need for the Project.
- Types and Numbers of Patients Likely to be Seen.
- Anticipated Number of Community Paramedics to be trained (it was 20, not 30 as stated by the EMS Director).
- Other Programs in California or Other States Serving as Models for this Project.
- Operational Methodology.
- Local Governance and Medical Control.
- Anticipated sources of Funding.
- Evaluation and Data Collection.

The Department’s request was consistent with Section IV. Letter of Intent Proposal Format contained in the California EMS Authority Community Paramedicine Pilot Project document (also included in Attachment #2). The SJFD request was also consistent with developing a partnership with County EMS and their contracted EMS transport provider aimed at overall system improvements, including: improving healthcare outcomes; saving healthcare dollars by preventing unnecessary ambulance transports; emergency department visits; and hospital readmissions. As important, treating non-emergency patients outside of the primary EMS System would leave first-line apparatus more available and would improve system-wide response times.

Unfortunately, the SJFD finds itself in a conundrum when it proposes a Community Paramedicine pilot program to help lighten EMS system loads and improve response times, but is then told by the County that the pilot program should not proceed because the Department needs to work on improving its response times.

The Department was seeking to work in partnership with the County on a pilot program to improve services to residents. Rather than simply rejecting the proposal, County and City residents together could have been better served by a more collaborative discussion aimed at working out the details raised as objections. The SJFD hopes that with this audit recommendation, the County will reconsider its position on this issue moving forward.

Audit Recommendations #18 and #19:

“The San José Fire Department, in conjunction with the Police Department, develop protocols that allow emergency medical service responses, that also require law enforcement response, to be triaged by Fire Department dispatchers if law enforcement response is going to be significantly delayed, so that firefighters can determine whether to enter the scene.”

“The San José Fire Department develop additional policies to address situations where Police Department response to secure scenes of emergency medical services responses are going to be extensively delayed, including seeking assistance from other law enforcement jurisdictions where necessary.”

Department Response: The SJFD agrees with this recommendation. The SJFD will work with the Police Department on the development of protocols and policies to address these situations. The SJFD is keenly interested in maximizing response resource availability. However, the changes in protocols and policies will not fully address this issue. Similar to the impacts of delayed law enforcement response times, low availability of County EMS ambulances also requires first responding fire department resources to remain on scene and unavailable for other calls for extended periods. SJFD response-time performance is therefore highly dependent on the performance both of law enforcement agencies and the ambulance provider. SJFD was informed by Rural/Metro that it dedicates only six to eight ambulances for San José. This number seems inadequate for the San José service area that covers 206 square miles with a population of one million. The SJFD would appreciate the opportunity to work closely with County EMS and Rural/Metro to: understand the deployment model of transport units, the causes of low ambulance availability, and solutions to improve overall system performance.

Audit Recommendation #20:

“The San José Fire Department, in conjunction with the County of Santa Clara Emergency Medical Services Agency, pursue research to determine if the current eight-minute response time is medically necessary to all types of Code 3 emergency medical responses to which it is now applied, or if a longer standard could be applied to certain MPDS dispatch determinants, as research in other regions has suggested.”

Department Response: The SJFD agrees with this recommendation; however, it will require the cooperation and coordination of many County agencies. This recommendation will require changes to the EMS Provider Agreement.

Audit Recommendation #21:

“The San José Fire Department pursue development of a voluntary paramedic subscription program among residents, as well as a per-call emergency medical response fee for non-subscribers, as an additional source of revenues for the Department’s emergency medical services response function.”

Department Response: The SJFD acknowledges this recommendation. However, similar to the SJFD’s response to audit recommendation #16 above, this recommendation suggests that the residents of the City of San José be isolated from the other populations being served by the County EMS System. This decision requires discussion and execution at the City and County policy-making level.

Audit Recommendation #22:

“The County of Santa Clara Emergency Medical Services Agency require first-responder agencies to provide a one-page summary sheet in the format shown in Attachment 10 to accompany each monthly electronic data report, and that the electronic data report be expanded to include all the data elements required to calculate the incident data included in the recommended monthly summary. It is also recommended that County EMS (1) independently verify the reported monthly rate of on-time performance, and (2) prepare detailed written reporting procedures identifying and defining all permissible exclusions from the monthly calculation of response time performance as permitted by contract sections V.E. and XII of Annex B to ensure a common understanding with the City of permissible exclusions to the calculation of monthly response time reporting.”

Department Response: The SJFD acknowledges this recommendation. However, this is a recommendation directed towards the County. It should be noted, the SJFD is currently compliant with contractual reporting requirements. Alterations in methodology or reporting format/frequency may require alterations to the existing EMS Provider Agreement.

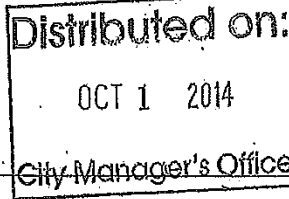
Sincerely,



Ruben Torres
Fire Chief, San José Fire Department

Attachments

- cc. Ed Shikada, City Manager
- Jennifer Maguire, Deputy City Manager, Budget Director
- Johnny Dellinger, Interim Assistant Chief, San Jose Fire Department
- Ron D’Acchioli, Deputy Director Bureau of Administrative Services, San Jose Fire Department



Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Ruben Torres

SUBJECT: SAN JOSE FIRE DEPARTMENT
UPDATE - EMERGENCY
MEDICAL SERVICES

DATE: September 30, 2014

Approved: 

Date: 9/30/14

INFORMATION

The purpose of this memorandum is to provide the City Council with (1) updated information related to the San José Fire Department's Emergency Medical Services response times and its work plan to improve response time performance levels, (2) information regarding the status of recent discussions with County of Santa Clara Emergency Medical Services Agency staff, and (3) the status of the response time reporting audit initiated by the County of Santa Clara.

BACKGROUND

Under the California Health & Safety Code, the County of Santa Clara (County) is required and authorized to respond to Emergency Medical Services (EMS) calls for service from its residents. On April 5, 2011, the County entered into a 911 Emergency Medical Services Provider Agreement (Agreement) with the City of San José (City) for the San José Fire Department (Fire Department) to respond to 911 EMS calls for service within the City's authorized jurisdiction, including those established through automatic and mutual aid agreements. Under the Agreement, the response time performance standard for the Fire Department to respond to EMS calls for service is arrival to urban areas within 7:59 minutes on Priority 1¹ EMS calls and arrival within 12:59 minutes on Priority 2² EMS calls. The Agreement further requires that the Fire Department meet a minimum ninety percent (90%) response time compliance in each dispatch classification³ in order to be considered compliant with the Agreement.

Under Annex B of the Agreement, funding is divided into two areas: Category A – EMS Resources Management and Category B – Response Time Performance. Category A funds are used to cover a percentage of equipment costs incurred by the Fire Department in responding to EMS calls for service under the Agreement. Those funds typically average \$800,000 per year.

¹ Response times for Priority 1 EMS calls in Suburban areas is 9:59 and for Rural/Wilderness areas is 11:59.

² Response times for Priority 2 EMS calls in Suburban areas is 14:59 and for Rural/Wilderness areas is 21:59.

³ Urban = >101 people/sq. mile, suburban = 51-100 people/sq. mile, and rural/wilderness = <50 people/sq. mile

September 30, 2014

Subject: San José Fire Department Update - Emergency Medical Services

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Category B funds are used for incentives when the Fire Department meets response time standards for 90% of the EMS calls for service and, per the Agreement, can total up to \$1.8 million per year. Since participating in the Agreement, the City has received between \$2.1 million to \$2.2 million, on an annual basis, for both Category A and Category B combined.

Timeline

In January 2013, the City advised the County that the response times it had been providing to the County might have been incorrectly calculated and reported. After discovering the potential error, the City began taking measures to correct its calculations and reporting. It also engaged with the County's EMS Agency to discuss potential improvements to the City's response to EMS calls for service under the Agreement as the City was not regularly meeting response time standards.

On February 4, 2014, due to the City's inability to consistently meet the 90% response time standard, the Santa Clara County's Board of Supervisors (Board) directed its Administration to withhold any pending or future funds due to the City under the Agreement until the City achieved certain conditions. In light of the different type of funding under the Agreement, the Board directed its Administration to withhold any pending or future Category B funds until the County had received from the City (1) a corrective action plan acceptable to the County and (2) evidence of three consecutive months of response time compliance by the Fire Department for 90% of the EMS calls for service. The Board further directed that once the above conditions were met by the City, the County was to release all withheld payments, less any liquidated damages incurred by the City for failing to meet response time standards during the applicable period. However, the Board directed its Administration to require the City to agree to return any previously withheld Category B payments if a subsequent material breach⁴ due to response time performance during the term of the Agreement occurred (the "claw back provision"). The Board further directed that the Agreement be amended to incorporate these provisions and if the City did not agree to these terms, the County Administration was to terminate the Agreement. With regard to Category A funds, the Board directed its Administration staff to, "Pay San José past due amounts under Category A of Annex B of the Agreement." For minutes from the Board's meeting, please access the following link:

<http://sccgov.igm2.com/citizens/FileOpen.aspx?Type=12&ID=4628&Inline=True>. On February 10, 2014, County EMS Agency Director, Michael Petrie, wrote to the San José Fire Chief confirming the above direction by the Board.

⁴ "Material breach" is a failure of performance under the Agreement which is significant enough to give the aggrieved party the right to sue for breach of contract. As provided for in the Agreement, the City is considered in material breach of Annex B of the Agreement if it fails to meet the EMS response times for 90% of the calls for service for 3 months in a row or for 4 months in a year.

HONORABLE MAYOR AND CITY COUNCIL

September 30, 2014

Subject: San José Fire Department Update - Emergency Medical Services

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On March 14, 2014, the Fire Department issued an information memorandum to the City Council providing a brief overview of the Fire Department's EMS response times within its authorized jurisdiction and the measures the Fire Department had taken since discovering the inaccurate calculation and reporting of EMS response times to the County in January 2013. That memorandum can be found at the following link:

<https://www.piersystem.com/external/content/document/1914/2120354/1/03-14-14Fire.PDF>.

On April 22, 2014, the Fire Department issued a second, more detailed information memorandum to the City Council providing the City Council with initial response time analysis, including:

- (1) Updated and verified information regarding current and past City and County EMS response time performance;
- (2) Information regarding identified deficiencies in emergency response time performance and informing the City Council of actions for improvement that had already been taken;
- (3) Information regarding a recent third party validation of the City's response time reporting process and data conducted by Athena Advanced Networks; and
- (4) Information regarding future actions that would be implemented by the Fire Department to further improve response time performance to the community.

That memorandum can be found at the following link:

<https://www.piersystem.com/external/content/document/1914/2152522/1/04-22-14FIRE.PDF>

On May 9, 2014, during a City Council 2014-2015 Budget Study Session, the Fire Department reviewed and discussed in detail the information contained in their memorandum dated April 22, 2014.

Finally, on May 21, 2014, in Manager's Budget Addendum #17, in an effort to improve overall fire and emergency response time performance to the community, a recommendation was made by staff for the Fire Department to continue its analysis of response time performance through a comprehensive Fire Department organizational review. This analysis would include, but not be limited to:

- (1) Reviewing staff workload and service outcomes achieved based upon the type of Fire Department services delivered;
- (2) Assessing the appropriateness of fire response time performance targets based upon the type of service call;
- (3) Reviewing alternative service/staffing deployment options;
- (4) Assessing apparatus types and locations throughout the City; and
- (5) Exploring traffic signal pre-emption systems to improve travel time performance.

This recommendation was approved by the City Council through its review and approval of the Mayor's June Budget Message for Fiscal Year 2014-2015. The completion of this analysis is targeted for the winter of 2015.

CURRENT EMS RESPONSE TIMES & WORK PLAN TO IMPROVE PERFORMANCE

Following the analysis completed by the third party consultant, Athena Advanced Networks, and a number of measures taken by the Fire Department to improve EMS response time performance over the last 9 months, the Fire Department has experienced an overall improvement in its EMS response times. For example, since December 2013 the Fire Department has implemented changes to the way it captures and reports information and the manner in which it delivers services and has consequently seen a modest increase in its EMS response times. Please see Table 1 County EMS Response Times: 8 min. Compliance for Code 3 Incidents, for the monthly EMS Response Times for July 2012 thru August 2014.

Table 1 County EMS Response Times: 8 min. Compliance for Code 3 Incidents

2012												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
EMS Compliance							93.11	94.25	90.96	89.14	87.86	88.18
2013												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
EMS Compliance	88.99	88.33	89.62	89.52	87.95	88.54	87.62	94.91	89.95	85.23	85.26	85.32
2014												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
EMS Compliance	88.05	87.68	88.91	90.39	88.94	90.31	92.53	88.95				

* Additional reported data since the City Council Budget Study Session held on May 9, 2014.

It is important to note that the Fire Department continues to engage in a number of actions to address not only the City's EMS response times, but also to address an overall improvement in its operations, as follows:

1. **Reliable Response Time Data** – In an effort to establish consistent and reliable information, the department has focused efforts on reinforcing its data integrity and automating its reporting. In addition, efforts are being made to provide up-to-date dashboards and performance results to the Command staff as well as the stations, allowing a more in-depth understanding of where problem areas might exist.
2. **Minimize Dispatch Time** – These tasks are focused around communications and improving call processing. Identified areas for improvement are response area re-mapping; filling current vacancies; evaluating staffing needs, as part of the previously mentioned organizational review; and, upgrades to both the software and phone systems used by the Fire Department.
3. **Minimize Turnout Time** – Turnout Time is defined as the span of time from when a Fire Department station receives notification of a call for service to when a Fire Department apparatus from that station is in motion, responding to the emergency. Efforts are currently in progress to enable turnout time improvements through a cooperative environment between labor and management (LMI). Command staff is evaluating and adjusting their turnout pilot program to identify the best practices and any deficiencies

that might exist in the current model. Weekly communications through Battalion Chiefs are currently taking place, with turnout time compliance reports, by station and shift, to begin before the end of Fall 2014.

4. Minimize Travel Time -- Several tasks are focused towards reducing the amount of time required to respond to calls. Some of these tasks are centered on first due assignments of stations, apparatus deployments, and the GPS location of apparatus at the time a call is received. Although many of the tasks are being addressed by the Fire Department, a few are either related to the larger projects (e.g., the Silicon Valley Regional Communications Services (SVRCS) project) or are restricted by investment (e.g., the signal preemption project which allows the Fire Department to change the signal lights so that it can proceed through intersections at will).
5. Assess County EMS Response Time Compliance -- This task is related to the evaluation of the amount of time a Fire Department apparatus is standing-by on site waiting for the arrival of Rural Metro to transport a patient. If an apparatus is waiting on site for a transporting apparatus to arrive, it is not available to respond to other emergencies which, in turn, reduces the number of available apparatus and can cause delays in the Fire Department's response times.
6. Performance Standards -- As mentioned earlier in this memorandum, the Fire Department, in conjunction with the City Manager's Office, is undertaking a comprehensive department organizational review with a targeted completion date of winter of 2015. This analysis will include: (1) reviewing staff workload and service outcomes achieved based upon the type of services delivered; (2) assessing the appropriateness of fire response time performance targets based upon the type of service call; (3) reviewing alternative service/staffing deployment options; (4) assessing apparatus types and locations throughout the City; and (5) exploring traffic signal preemption systems to improve travel time performance.
7. Maximize Unit Availability -- Research is being conducted on establishing the "Omega" protocol as a way of prioritizing non-emergency events. This protocol would be implemented when a 9-1-1 operator responds to a call where the caller doesn't actually have a medical emergency but is likely in need of some level of medical intervention or assistance. In this instance, the 9-1-1 operator would categorize the call as an "Omega" classification and redirect the caller or assist the caller through a secondary triage center in a more appropriate, cost-effective manner.

For a detailed list of next steps the Fire Department is taking to improve its operations and overall service delivery, please see Attachment A to this memorandum.

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STATUS OF DISCUSSIONS WITH COUNTY OF SANTA CLARA EMS AGENCY

Since it first reported a potential issue with its response time reports to the County, the City has engaged in meetings, phone calls and correspondence with the County's EMS Agency Director and appeared before the County's Health & Hospital Committee (Committee) as well as the County Board of Supervisors to assure the County that the partnership between the City and the County is valuable and beneficial. The Fire Department has also relayed to the Committee, the Board and the County EMS Agency Director that it remains committed to supporting the County EMS Agency needs through the efficient and cost-effective use of City resources.

Since late Spring of 2014, the Fire Department and the City's Administration has also engaged in preliminary discussions with the County's EMS Agency Director regarding potential amendments to the Agreement as it pertains to Category B funds. Although the Board specifically directed its Administration not to withhold Category A funds due to the City under the Agreement, to date, the County (through Rural Metro) has issued to the City a total of only \$333,128 to cover the period of April 2013 through September 2014; leaving a balance currently due to the City for this period of \$866,134. If no further actions are taken by the County to release the Category A payments owed to the City, the outstanding amount would grow by \$599,631 by year end, bringing the total owed to the City, at the end of fiscal year 2014-2015, to \$1,465,765. In an effort to obtain the balance of the Category A funds, the City has requested that upon execution of an amendment to the Agreement to address Category B funds, the County immediately release all Category A funds due.

With regard to Category B funds, the City's Administration and the County EMS Agency Director have engaged in informal discussions regarding the potential Annex B contract amendments that could be recommended to both the City Council and County Board of Supervisors, respectively, that are reasonable for both parties in light of the resources available for the Fire Department to respond to EMS calls; the corrective work plan in place and the actions taken to date to improve response time performance; and, the goal of sustainable performance of at least 90% for three consecutive months. The City's Administration hopes to complete those discussions soon and will return to the City Council once it is positioned to recommend reasonable amendments to the Agreement.

STATUS OF COUNTY OF SANTA CLARA RESPONSE TIME REPORTING AUDIT

On March 11, 2014, the County Board of Supervisors directed the County's Management Auditor, Harvey Rose & Associates, to conduct an audit of the Fire Department's reported EMS response times (to include any systemic and/or management issues related to response times) and report back to the Board as soon as possible. Since then, the Fire Department and the City's Administration have been working diligently to provide Harvey Rose & Associates with the information they have requested and assist in their evaluation of the Fire Department's reporting. To date, a number of activities have been completed by Harvey Rose & Associates, including a review of the response time methodology used by the Fire Department for a random sampling of

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EMS calls, as well as visiting all Fire Department fire stations and the Communications Center to interview Fire Department personnel. Harvey Rose & Associates has estimated a completion date for its audit of September 2014.

COORDINATION

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

/s/

RUBEN TORRES

Fire Chief

For more information on this memorandum please contact Ron D'Acchioli, Deputy Director, Fire Department Bureau of Administrative Services at 408-794-6953.

Attachment A – Fire Department Response Time Improvement Work Plan

Fire Department Response Time Improvement Work Plan

Goal	Project	Status	Timeline/Completion
Reliable Response Time Data	1. Analyze/Validate Response Time Data	Completed	April-14
	2. Enable "HALO" Unit Tracking	In Progress	September-14
	3. Establish Data Warehouse	In Progress	June-15
	4. Business Intelligence Tool (i.e. Dashboards)	In Progress	October-15
	5. Data Collection/Automation	In Progress	Ongoing
Minimize Dispatch Time	6. Implement Early Dispatch	Completed	March-14
	7. Response Area Mapping	In Progress	September-14
	8. Pro-QA Update (Dispatch software)	In Progress	September-14
	9. Base Map Update	In Progress	October-14
Minimize Turnout Time	10. Fire Communications Staffing	4-person academy begin. 8/14	May-15
	11. 911 Phone System Upgrade	In Planning	October-15
	12. Turnout Time Pilot	In Progress	January 2016 (Final Report)
	13. Unit Availability	Decentralized Training	August-14
Minimize Travel Time	14. Emerg. Service Zones Refinement	In Progress	December-14
	15. Apparatus Move-ups	Evaluating	January-15
	16. Navigation Technology	In Planning	December-15
	17. Closest Unit Dispatch	Technology in place	July-16
	18. Deployment Refinements	Data Analysis	July-16
	19. CAD to CAD Link (countywide apparatus locations)	In Process -SVRIA Dependent	TBD (SVRIA)
	20. Border Drops	In Process -SVRIA Dependent	TBD (SVRIA)
Assess County EMS Response Time Compliance	21. Signal Preemption	Requires Funding	TBD
	22. Impact on SJFD Response Performance	In Progress	September-14
	23. Organizational Review Study	Developing RFP	Winter 2015
	24. Implement Omega Protocol (min. out of service)	Requires County EMS Cooperation	TBD



San José Fire Department

September 30, 2013

Lou Meyer
Project Manager
Community Paramedicine – Mobile Integrated Health
Emergency Medical Services Authority

**Letter of Intent: San Jose Fire Department Community Paramedicine Program
(Pilot Project Proposal)**

Dear Mr. Meyer:

This letter is to inform you of San Jose Fire Department's (SJFD) interest to develop a Pilot Project to expand the use of Paramedic resources to address local health care needs in the city of San Jose, California. The SJFD is the EMS provider in San Jose. This project would be a collaboration and partnership between the SJFD, the Santa Clara County EMSA, and other health care partners. This Community Paramedicine Pilot Program derives its authority from the Health Workforce Pilot Project (HWPP) (Division 107, Part 3, Chapter 3, Article 1, Health and Safety Code Section 128125) of the Office of Statewide Planning and Development (OSHPD).

a) Title of Proposed Project Concept:

San Jose Fire Department Community Paramedicine – Mobile Integrated Healthcare

b) Identify the category(s) that best describe the project you propose to pilot:

The Pilot Project would include the following:

- b. Assess, treat, refer, or release.
- d. Post hospital or emergency department follow up.

Explanation of the categories:

- b. After assessing and treating, determine whether it is appropriate to refer or release an individual at the scene of an emergency response rather than transporting them to a hospital emergency department. If transport is warranted, the County's contracted ambulance provider will be utilized. We anticipate comprehensive data collection activities will be performed throughout the Pilot Project to validate the impact of this category on the EMS and healthcare system. This process will be completed in collaboration with the Santa Clara County EMSA.

- d. Provide follow up care for persons recently discharged from the hospital and that are at an increased risk of a return visit to the emergency department or readmission to the hospital. This follow up care will be provided in accordance with established medical protocols and in collaboration with the patient's treating physician. If, after the assessment, it is determined that the patient needs to be returned to a medical facility and an ambulance is warranted, that transport will be coordinated with the contracted Santa Clara County ambulance provider. As mentioned above, we anticipate comprehensive data collection activities will be performed throughout the Pilot Project to validate the impact of this category on the EMS and healthcare system. This will be completed in collaboration with the Santa Clara County EMSA.

NOTE: *Considering the partnering relationships required for success, this Pilot Project will strive to support the strategic plan and business model of all participants.*

c) Brief description of proposed concept, project management and partners (include geographic area to be served):

Proposed Concept

The mission of the SJFD Community Paramedicine – Mobile Health Integrated Healthcare program is to determine whether Paramedics working in an expanded role in their community can help improve health system integration, efficiency, and fill identified health care needs. The OSHPD advances safe, quality healthcare through innovative services that finance emerging needs. The OSHPD's HWPP allows organizations to test expanded roles for healthcare professionals or new healthcare delivery alternatives before changes in licensing laws are made by the Legislature.

Currently, EMT-Paramedics are trained to provide advanced life support services in emergency settings or during inter-facility transfers (California Health and Safety Code Division 2.5, Emergency Medical Services). Through this program, Community Paramedics (CP) may be allowed to provide additional services. The health of residents in San Jose would be improved by providing specially trained CPs. The CP would conduct in-home patient assessments to administer specific primary health care and preventive services, including transport if warranted. They would act through a physician's order and within a defined scope of practice. This pilot program will allow the state and local EMS to generate, collect and analyze data that will examine the practice of CPs and serve as a basis to recommend changes to existing statute and regulations.

The CP model helps physicians monitor the health of vulnerable patients, thereby producing better healthcare outcomes, ensuring ambulance transports are directed to the appropriate facility, reducing unwarranted visits to the emergency department, and mitigating potential hospital readmissions.

Project Management and Partners

Project Managers

The Medical Director or designee would provide medical oversight of the program.

Partners

All partners will be signatories to this proposal:

- Santa Clara County EMSA.
- City of San Jose Fire Department

Potential Partners

- Local colleges or universities (to teach the CP course) or [Hennepin College – online course with the local clinical rotations].
- Physicians or their designees (would provide clinical training and issue orders and also help determine how much physician buy-in exists for this program).
- Transport-capable agencies.
- Hospitals, clinics, Medicare, MediCal, and commercial insurance.
- Other Santa Clara County Fire Departments and advanced life support providers.

Geographic Area to be Served

The City of San Jose is located in the South San Francisco Bay area within Santa Clara County, California. It is the tenth largest city in the United States and the third largest in California. In California, day-to-day EMS system management is the responsibility of local and regional EMS agencies. The City encompasses 202 square miles and the SJFD serves a city-proper population of 974,000, with an additional 150,000 County of Santa Clara residents in unincorporated areas within city limits totaling over 1 million. We recognize our potential partners may desire an expanded (regional) delivery model.

d) Purpose and Objectives:

The City of San Jose is home to a large diverse population that encompasses a range of socioeconomic classes. The City of San Jose would like to take the lead in a regional approach to deliver the appropriate level of health care to each citizen by filling the current gaps in the healthcare system through this pilot project.

Data from this pilot project would determine whether the emerging healthcare delivery model utilizing CPs would increase access to basic services through the use of specially trained emergency medical service (EMS) providers. The CP would care for patients at home or in other non-urgent settings outside of a hospital under the supervision of a physician or advanced practice provider. A CP can expand the reach of primary care and public health services by using EMS personnel to perform patient assessments and procedures that are already in their current skill set or an expanded skill set. Over the past decade, local healthcare gaps in both the U.S. and internationally have been filled through CP programs that use specially-trained EMS personnel to treat non-acute illness in community settings.

e) Estimated Project Length:

This pilot project is estimated to last 24 months. Should the Director of the Office of Statewide Planning and Development determine that continuation of the project will substantially contribute to the availability of high-quality services in this region, this project would be extended a year at a time, for a few years.

f) Background Information:

Need for project

Response experience data show not all patients require emergency medical intervention yet still require access to medical care. In these cases, the CP may treat or direct patients to the appropriate place of care thereby creating operational and financial efficiencies in the system. SJFD communications, an accredited center of excellence that uses Medical Priority Dispatch System (MPDS) protocols, will support this model.

Alternatively, the CP could treat the patient at home without transport to any medical facility. The CP would work with local clinics, community health workers, and primary care providers to mental health patients, the transient population, and substance abuse patients, to provide preventive care and would also provide support for persons with chronic conditions.

Types and number of patients likely to be seen

Records from the past six months are depicted in the Table below. This represents an estimate of affected patients when all categories are enabled. As a result of the categories selected for the Pilot Program, we are confident that a statistically significant number of patients will be affected.

TYPES OF PATIENTS	ESTIMATED #
Patients with chronic conditions	3462
Patients with diabetes	2271
Patients with asthma	749
Patients with congestive heart failure	442
Patients with specified conditions not needing emergency care	2965
Persons recently discharged from the hospital, follow-up	6*
Care of mental health patients	1653
Care of transient patients	4193
Care of substance-abuse patients	3589

**Data field not currently isolated in the SJFD database*

Anticipated number of community paramedics to be trained and future anticipated employment opportunities for community paramedics

We anticipate up to 20 Paramedics will be trained initially. We anticipate a significant increase in employment opportunities for CPs as the program is validated and matures.

Other programs in California or other states serving as models for this project

Our research indicates that Minnesota is the most advanced model in the country. They are the first in the U.S. to establish a licensing structure for CPs. Hennepin Technical College is the first college to offer CP Certification Training. This college has the option of taking the classes through interactive TV plus an online component, with clinical rotations being completed locally, with pre-approval by Hennepin's Medical Director. Through the passage of SF 119 Section 3, Minnesota is leading in CP program funding, which allows reimbursement through their state CMS.

Also, there are two standardized courses, developed by the University of Pittsburgh in its proprietary EmedHealth16 program, and a curriculum developed by the Community Healthcare and Emergency Cooperative for the North Central EMS Institute. These courses can be used in any state.

In Wake County, North Carolina, county commissioners are providing ongoing funding to support the Wake County Advanced Practice Paramedic program, although the economic downturn saw funding for phases 2 and 3 of program implementation withheld. That program can also serve as a possible model.

g) Program Management:

Operational Methodology

Primary care physicians or designees would train the CPs during clinical rotations and provide the orders to use CPs. The Medical Director or designee will advise the clinical training process and evaluate the competency of the CP's skills. Once the CPs are trained, they will use a specially-equipped SUV to visit patient homes.

Local Governance and Medical Control

EMSA's State CP Advisory Committee: this would provide feedback, direction, and monitor any program issues that may arise. This Committee would include representation from EMSA, as well as, representation from each site of the project, which includes representatives from the Santa Clara County EMSA, the EMS providers, and other project participants in the healthcare system.

Principal Investigator: The Santa Clara County EMS Medical Director or designee would act as the principal investigator and have primary responsibility for medical control for any project in the county.

Local CP Project Steering Committee: This local committee would be established for each pilot site. This Committee would include: (1) Santa Clara County EMS Medical Director or designee, (2) Santa Clara County EMS Administrator or designee, (3) the SJFD Medical Director or designee, (4) Medical Director and (5) Administrator from any participating Healthcare systems and EMS provider agency. This Steering Community would work with the EMSA CP Project Manager, and the Independent Evaluator.

Provisions for Protecting Patient's Safety

The Medical Director or designee would provide medical oversight of the program. This would include developing quality assurance mechanisms. In-home care that is delivered by a CP is not of an ongoing nature, but each visit requires a discrete order from the patient's physician.

Anticipated Sources of Funding:

In federal grants/cooperatives agreements/contracts, there are:

1. Under the Department of Health and Human Services:
 - a. EMS for Children
 - i. Targeted Issues Grants, community driven topics within the scope of the EMSC program, moderately academic (Example, KIDSDefib)
 - ii. Partnership for Children, funds directed at national organizations for specific projects
 - b. Centers for Medicare and Medicaid Services.
 - i. Medicaid State Waiver Program. In Minnesota, the CP program was able to get approval from federal Centers for Medicare & Medicaid Services so

that Minnesota's state Medicaid will pay for their services. Community medics work under supervision of an ambulance service medical director, who, with an order from a patient's primary-care provider, then bills Medicaid for the services delivered.

2. Under the Centers for Disease Control and Prevention
 - a. Center for Injury Prevention and Control
 - i. Division of Injury Response
 1. Injury Research/Clinical Care Grants. This has a specific interventional focus, and is highly academic
3. Under the National Highway Traffic Safety Administration
 - a. The Office of EMS
 - i. No Routine Extramural Grant Program
 - ii. Funds Special Projects with Earmarked or General Funds, (Example, Scope of Practice Project)
4. Under the Department of Homeland Security
 - a. Preparedness Directorate's Office of Grants and Training: this provides Assistance to Firefighters Grant Programs (AFG) and Staffing for Adequate Fire and Emergency Response (SAFER) Grants that are heavily fire department oriented, (Example, New EMS Service not previously provided by fire department)
5. Under National Institutes of Health: while there is no Specific EMS/Trauma Center, potential matches are: (it should be noted that the NIH is highly academic and typically not EMS-friendly but this may change due to current healthcare reform)
 - a. Heart Lung and Blood Institute
 - b. National Institute of Neurological Disorders and Stroke
 - c. National Institute of Aging
 - d. National Center for Complimentary and Alternative Medicine (research approach)

In private agencies, organizations and foundations that are national in scope, there are:

1. American College of Emergency Physicians: this is an Emergency Medicine Foundation, focuses on investigator development and health policy issues, e.g. ED overcrowding
2. Robert Wood Johnson: this takes unsolicited proposals and targets pioneer and vulnerable populations

Through partnerships with the local colleges including South Bay Regional Public Training Consortium.

Lastly, there is a possibility of funding from hospital and healthcare networks. This project would develop an agreement and fee schedule with hospitals, hospital networks, and payers.

Paramedic Eligibility

An individual desiring to be trained as a CP should have a minimum of four years' experience as a Paramedic. Preference in the selection will be given to individuals who have an A.A. degree or higher level of education.

Local CP Training

The core content of the CP training curriculum will be standardized among the pilot programs. Training will include both didactic and clinical training. This training is estimated to be

approximately 150-200 hours, depending upon the pilot project, and can use the nationally recognized CP training curriculum as a model: <http://communityparamedic.org>

The CP training would provide an understanding of the project parameters, local medical system organization, project policies and protocols and clinical experience. This content would be subject to review by the State Steering Committee.

At the conclusion of training, the student will be required to successfully pass an examination to demonstrate competency. A pilot program local accreditation will be granted by the Santa Clara County EMSA upon successful completion of the training program and examination. The Santa Clara County EMSA will then notify EMSA of the CP accreditation, which will be documented in the central registry.

College or University

The program can use the Community Health Care Emergency Cooperative's CP Curriculum. The program will get commitment from an academic institution early in the process in order to make sure training is available for the program. The training may occur through a community college or university willing to teach the curriculum, coordinate the clinical rotations, and provide academic credit, (for example, Hennepin Technical College).

h) Evaluation and Data Collection:

The program will include a methodology for tracking patients through use of queries. The database will track variables such as client demographics (e.g., age, gender, ethnicity, language, insurance status), services requested on an order, patient diagnosis, referring physician, time and date of call, chief complaint, referrals to other services by a CP, and outcomes (e.g., ambulance transport, physician follow-up, re-admission, no follow-up necessary).

Process Evaluation

This information and analysis will meet most grant requirements and will guide programming in terms of staffing patterns, budget, training needs, gaps in service, and patient demographics.

Qualitative Evaluation

Qualitative information can also supplement the quantitative data by documenting case studies to illustrate outcomes and the value of the CP program. In its most basic form, this is a narrative, which tells the story of particular CP cases. Case studies should meet certain criteria such as those where a negative outcome for the patient was either clearly or possibly avoided, due to the intervention of the CP. Information can be elicited through an interview with the CP and/or ordering physician, to document the case. Case studies can include patient demographics, presenting problem, the CP intervention and resulting outcomes. Names will not be used to protect patient confidentiality (ensuring HIPAA compliance).

Impact Evaluation and Utilization

In order to identify gaps in the health care system, the Health Resources and Services Administration published a CP Evaluation Tool to identify which gaps need to be filled. This tool would provide a "snapshot in time" assessment that gives the community scores in each area of evaluation. This snapshot would provide a roadmap of improvement by strategically planning how to achieve higher scores in future analyses. The tool provides important information to the

user about what data to collect on an ongoing basis. The tool has a series of structure, process and outcome benchmarks.

Dissemination of Results

Regular systematic collection, assembly, analysis, and dissemination of information on the quantifiable impact of the program will be completed and the results will be made available to the community.

Estimate of Healthcare Savings

We anticipate significant savings and efficiencies system wide with the use of CPs. It is difficult to estimate the financial impacts on the system at this point; however, comprehensive data collection and analysis will provide clarity to these elements.

Thank you for your consideration.

Sincerely,
Rubén Torres
Fire Chief

Jeffrey V. Smith, Santa Clara County
Executive - on Behalf of Santa Clara County
Emergency Medical Services Agency

i) Contact Information:

Contact Person: Ron D'Acchioli, Deputy Director Bureau of Administrative Services	Name of Local Agency: San Jose Fire Department
Address: 1661 Senter Road, Suite 300 San José, CA 95112	Telephone: Deputy Director D'Acchioli: 408-794-6953
E-mail: ron.dacchioli@sanjoseca.gov	Fax number: 408-297-2812

EMERGENCY MEDICAL SERVICES AUTHORITY

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RANCHO CORDOVA, CA 95670
(916) 322-4336 FAX (916) 324-2875



LETTER OF INTENT FOR COMMUNITY PARAMEDICINE PILOT PROJECT

The California Emergency Medical Services Authority (EMSA) is seeking the interest of local EMS agencies to develop pilot projects that expand the role and practice of the Emergency Medical Technician-Paramedic (EMT-P). Expanded use of paramedic resources to address local health care needs is part of a national trend termed "Community Paramedicine", also known as "Mobile Integrated Healthcare".

This Letter of Intent solicits proposals from Healthcare agency's or EMS providers in collaboration with a Local EMS Agency to develop a community paramedicine pilot project designed to test an expanded role for EMT-P's. EMSA will submit an application to OSHPD <http://www.oshpd.ca.gov/hwdd/HWPP.html> for a Health Workforce Pilot Project regarding community paramedicine based upon the selected local pilot project proposals.

I. Background

OSHPD advances safe, quality healthcare environments through innovative and responsive services and information that finance emerging needs, ensure safe facilities, support informed decisions and cultivate a dynamic workforce. OSHPD's Healthcare Workforce Development Division impacts the development of California's health professions and the communities they serve via career awareness, training and placement, financial incentives, and systems delivery, as well as research and policy. Specifically, OSHPD's Health Workforce Pilot Projects (HWPP) program allows organizations to test, demonstrate and evaluate new or expanded roles for healthcare professionals or new healthcare delivery alternatives before changes in licensing laws are made by the Legislature.

The California Emergency Medical Services Authority (EMSA) provides leadership to develop and implement Emergency Medical Systems (EMS) throughout California and sets standards for the training and scope of practice of various levels of EMS personnel. EMSA operates the State Paramedic Licensure program that licenses and conducts disciplinary investigations of paramedics to ensure that the care they provide meet high standards for prehospital care. EMSA also plays a central role in improving the quality

of emergency medical services available. In California, day-to-day EMS system management is the responsibility of local and regional EMS agencies.

Currently EMT-Paramedics are trained to provide advanced life support services in emergency settings or during inter-facility transfers. California Health and Safety Code Division 2.5, Emergency Medical Services:

- a) Limits the EMT-Paramedics scope of practice to emergency care in the pre-hospital environment
- b) Requires that patients under the care of an EMT-Paramedic be transported to a general acute hospital that has a basic or comprehensive emergency department permit (Health and Safety Code Section 1797.52, 1797.218)
- c) Requires emergency medical services to transport a patient to the closest and most appropriate facility (Health and Safety Code Section 1797.114).

The expanded role of paramedic services through Community Paramedicine in California may allow for the following:

- a. Transport patients with specified conditions not needing emergency care to alternate, non-emergency department locations.
- b. After assessing and treating as needed, determine whether it is appropriate to refer or release an individual at the scene of an emergency response rather than transporting them to a hospital emergency department.
- c. Address the needs of frequent 911 callers or frequent visitors to emergency departments by helping them access primary care and other social services.
- d. Provide follow-up care for persons recently discharged from the hospital and at increased risk of a return visit to the emergency department or readmission to the hospital.
- e. Provide support for persons with diabetes, asthma, congestive heart failure, or multiple chronic conditions.
- f. Partner with community health workers and primary care providers in underserved areas to provide preventive care.

II. Project Authority

HWPP (Division 107, Part 3, Chapter 3, Article 1, Health and Safety Code Section 128125) allows organizations to test, demonstrate, and evaluate new or expanded roles for healthcare professionals or new healthcare delivery alternatives before changes in licensing laws are made by the Legislature. The HWPP

Program has become a model for demonstrating and evaluating expanded roles of health care providers and since 1972, 23 legislative and/or regulatory changes have been influenced by HWPP.

III. Project Parameters

This pilot project is intended to determine whether paramedics working in an expanded role in their community can help improve health system integration, efficiency, and/or fill identified health care needs. Statutes that may be temporarily waived through OSHPD's HWPP authority include the following sections of the Health and Safety code that limit the destination of patients transported by paramedics and that specify the limited emergency settings where Paramedics can provide services: 1797.52, 1797.114, and 1797.218. The pilot program will allow the State to generate, collect and analyze data that will examine the practice of community paramedicine and serve as a basis to recommend changes to existing statute and regulations.

The HWPP Application will be sponsored at the State level by the Emergency Medical Services Authority (EMSA). The projects will be planned and executed at the local level by collaboration and partnership between Local EMS Agencies (LEMSA), EMS provider agencies, and appropriate health care partners. The HWPP project may be piloted for a period of up to 24 months. HWPP projects may be extended one year at a time for a few years, if OSHPD Director determines that continuation of the project will contribute substantially to the availability of high-quality services in the state or region.

EMSA anticipates receiving proposals from LEMSAs or EMS and healthcare providers with LEMSA support to participate in CP pilots involving any of the following general project areas:

- a. Transport patients with specified conditions not needing emergency care to alternate, non-emergency department locations.
- b. After assessing and treating as needed, determine whether it is appropriate to refer or release an individual at the scene of an emergency response rather than transporting them to a hospital emergency department.
- c. Address the needs of frequent 911 callers or frequent visitors to emergency departments by helping them access primary care and other social services.
- d. Provide follow-up care for persons recently discharged from the hospital and at increased risk of a return visit to the emergency department or readmission to the hospital.
- e. Provide support for persons with diabetes, asthma, congestive heart failure, or multiple chronic conditions.
- f. Partner with community health workers and primary care providers in underserved areas to provide preventive care.

IV. Pilot Site Requirements and Program Standards

Pilot Eligibility

Any Healthcare agency or EMS provider in collaboration and partnership with a Local EMS Agency may submit a Letter of Intent for consideration of participation in the HWPP. All partners, including the local EMS agency (LEMSA), must be signatories to the proposal. Prospective applicants must either employ paramedics or have a MOU with an agency that employs paramedics.

Local and State Governance and Medical Control

EMSA will establish a State CP Advisory Committee to review and oversee the individual project sites. The Advisory Committee will provide feedback, direction and monitor any program issues that arise. The Committee will include representation from EMSA and from each project site, including representatives of LEMSAs, EMS providers, and healthcare systems.

EMSA anticipates that increased medical control and oversight will be necessary to ensure patient safety and for quality improvement. The LEMSA Medical Director or his designee will act as the principal investigator and has primary responsibility for medical control for any project in her/his jurisdiction. A local CP Project Steering Committee must be established for each pilot site that includes the LEMSA Medical Director or his designee, the LEMSA administrator or designee, as well as a medical director and administrator from any participating Healthcare systems and EMS provider agency. The purpose of this Steering Committee is to provide additional medical and administrative oversight. The local Steering Committee shall work in collaboration with the EMSA Community Paramedicine Project Manager and Independent Evaluator.

Paramedic Eligibility

In order to be eligible to be trained as a Community Paramedic, the individual should have a minimum of 4 years' experience as a Paramedic. Preference should be given to individuals who have an A.A. degree or higher level of education, and each shall be recommended for the training program by the Medical Director of the agency or LEMSA. If feasible, health care partners should participate in the selection.

Standardized CP Training

The core content of the CP training curriculum will be standardized among the pilot programs. Training will include both didactic and clinical training. This training is estimated to be approximately 150-200 hours, depending upon the pilot project, and will use the nationally recognized CP training curriculum as a model. <http://communityparamedic.org/Home.aspx>. The curriculum will be reviewed and may be

modified by the State Advisory Committee to ensure that it meets the needs of all proposed pilot areas. Core training may be coordinated geographically based on the location of the approved pilot proposals. Local CP training must also provide an understanding of the project parameters, local medical system organization, project policies and protocols and clinical experience. This content should be approved by the Local Project Steering Committee and will be subject to review by the State Steering Committee.

At the conclusion of training, a student will be required to successfully pass an examination to demonstrate competency. A pilot program local accreditation will be granted by the LEMSA upon successful completion of the training program and examination. The LEMSA will then notify EMSA of the CP accreditation, which will be documented in the central registry.

Data Collection

Data collection will be the responsibility of the local project and should measure or demonstrate key objectives for the project. Proposed data points may be altered or supplemented by the Independent Evaluator.

Objectives for evaluation should be tailored to the specific concept(s) being tested and should include:

- Increased access to care
- Improved efficiency of healthcare delivery
- Decreased hospital readmissions
- Decrease in low acuity ambulance transports
- Decrease in low acuity emergency department visits
- Cost savings
- Healthcare service utilization patterns
- Patient satisfaction
- Primary care provider and/or health system satisfaction

Optimally, applicants should have the ability to 1) collect and share data electronically and 2) include linkage to Electronic Health Records (EHR's). Pilot participants will be required to provide a report of quarterly results to the local CP Project Steering Committee, Independent Evaluator, and to the State CP Advisory Committee through the EMSA Project Manager for review.

Funding

Funding will be the responsibility of each pilot site. Projects may be supported through grants, identified cost savings, or partnerships with other local agencies.

A California HealthCare Foundation (CHCF) grant with EMSA is pending to support the state program manager, an independent evaluator, training programs, and a stipend to assist in pilot site data collection.

IV. Letter of Intent Proposal Format

A Letter of Intent should be typed and no more than 8 pages in length.

One application for a pilot project proposal is required for each unique study design or methodology. A LEMSA, or applicant, may submit multiple applications within the LEMSA. The LEMSA is responsible for coordinating multiple pilot projects. A pilot project proposal may include multiple EMS providers and healthcare partners (provided it maintains the same study design). Multiple study concepts (i.e. pre-hospital or out-of-hospital) may be incorporated into a single design or methodology.

- a) Title of Proposed Project Concept
- b) Identify the category(s) that best describes the project you propose to pilot

Port to alternate locations	Post hospital or emergency department follow up
Assess, treat and refer	Care for chronic conditions
Manage frequent 911 callers	Preventive health services

- c) Brief description of proposed concept, project management and partners (include geographic area to be served)
- d) Purpose and objectives
- e) Estimated project length (24 Months)
- f) Background Information
 - o Need for project
 - o Types and number of patients likely to be seen
 - o Anticipated number of community paramedics to be trained and future anticipated employment opportunities for community paramedics

- Other programs in California or other states serving as models for this project
- g) Program Management
- Operational methodology
 - Local governance and medical control
 - Provisions for protecting patient's safety
 - Anticipated sources of funding
 - Paramedic eligibility
 - Local CP Training
- h) Evaluation and data collection (include components regarding process evaluation, qualitative evaluation, impact evaluation and utilization, estimate of healthcare cost savings, and dissemination of results)
- i) Contact Information:

Contact Person	Name of Local Agency
Address	Telephone
E-mail	Fax number

V. Submission of Letter of Intent

Interested parties are requested to submit a Letter of Intent proposal in electronic format to EMSA:

Lou Meyer
Project Manager
Community Paramedicine - Mobile Integrated Health
Emergency Medical Services Authority
lou.meyer@emsa.ca.gov

An LOI submission conference call will be hosted by EMSA on August 14, 2013

In order to assist in facilitating the Pre-LOI Conference, please submit questions to EMSA no later than August 7, 2013.

All Letters of Intent must be submitted by September 30, 2013 to be considered.

HWPP Project Steps and Timeframe

EMSA will review all proposals submitted and, in collaboration with OSHPD, will select proposals to take part in the HWPP. EMSA will then complete and submit the application to OSHPD for review. As part of the review process, OSHPD will solicit input from relevant licensing boards and committees, and a public meeting will be held to allow public comment concerning the proposed project. A public hearing will also take place to document the HWPP on public record. Following the public hearing, OSHPD will notify EMSA of the overall application status, and EMSA will notify the involved parties.

Approximate Timeline:

Year	Month	Task
2013	July - Sept	<ul style="list-style-type: none"> Proposals through Letter of Intent submitted by September 30, 2013
	October	<ul style="list-style-type: none"> EMSA proposal review with OSHPD to select pilot sites
	November	<ul style="list-style-type: none"> EMSA submits HWPP application to OSHPD
		<ul style="list-style-type: none"> OSHPD internal review process, application sent to Licensing Boards for review
	December	<ul style="list-style-type: none"> Licensing Board review
2014	February	<ul style="list-style-type: none"> OSHPD Public Meeting held for public comments
	March	<ul style="list-style-type: none"> OSHPD Public Hearing takes place
	April	<ul style="list-style-type: none"> OSHPD will notify EMSA if application for HWPP is approved
		<ul style="list-style-type: none"> EMSA will notify pilot sites, recruitment will begin within the EMS agencies for community paramedics
	June	<ul style="list-style-type: none"> Training will begin for CP pilot programs
	September	<ul style="list-style-type: none"> CP's begin providing care for first 1 year period
2015	September	<ul style="list-style-type: none"> Overall project analysis begins Pilots are anticipated to be extended for an additional year to 2016 to gather additional data
		<ul style="list-style-type: none"> OSHPD Project Analysis Report
	October	<ul style="list-style-type: none"> OSHPD Project Analysis Report