



OFFICE OF THE
CITY AUDITOR

**A REVIEW OF SAN JOSE FIRE DEPARTMENT
EMERGENCY MEDICAL SERVICE
RESPONSE TIMES
FROM JULY 1, 1993 THROUGH
SEPTEMBER 30, 1993**

**A REPORT TO THE
SAN JOSE
CITY COUNCIL**

JANUARY 1994

94-02



CITY OF SAN JOSÉ, CALIFORNIA

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January 21, 1994

Honorable Mayor and Members
of the City Council
801 North First Street, Room 600
San Jose, CA 95110

Transmitted herewith is an informational report on *A Review Of San Jose Fire Department Emergency Medical Service Response Times From July 1, 1993 Through September 30, 1993*. This report is made in accordance with Council Referral No. 12-7-93-7d(6).

An Executive Summary is presented on the blue pages in the front of this report while an Administration response is shown on the yellow pages at the end of the report.

I will present this report to the Finance Committee at its January 26, 1994, meeting. If you need additional information in the interim, please let me know. The City Auditor staff members who prepared this report were Nestor Baula and Cynthia Newman.

Respectfully submitted,

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EXECUTIVE SUMMARY

In accordance with City Council Referral 12-7-93-7d(6), we have reviewed the San Jose Fire Department's (SJFD) current emergency medical service (EMS) response times. Our review provides detailed information to the San Jose City Council and the City Administration regarding the SJFD's turnout and travel times in response to EMS events. We conducted our review in accordance with generally accepted government auditing standards. This is an informational report only and does not make any recommendations. The Scope and Methodology section of this report describes the limitations of our work.

Our review of SJFD responses to EMS events from July 1, 1993, through September 30, 1993, revealed the following:

- The SJFD responded to 9,147 EMS events during this period;
- City Council District 3 had the highest volume of EMS events while City Council District 10 had the lowest volume of EMS events;
- When compared to 1990 and 1992, the SJFD's responses to EMS events during July 1, 1993, through September 30, 1993, were slower Citywide and were also generally slower in each City Council district;
- In only one City Council district (District 1) did the SJFD meet its turnout time objective of 2 minutes or less for 90 percent of responses;
- In only three City Council districts (Districts 3, 5, and 6) did the SJFD meet its travel time objective of 4 minutes or less for 80 percent of responses;
- City Council District 4 had the lowest percentage of responses that were 2 minutes or less for turnout time (82 percent) and 4 minutes or less for travel time (56 percent); and

- When compared to our 1992 study results, neither the SJFD's 1993 travel time nor combined turnout time plus travel time performance in City Council District 4 improved.

INTRODUCTION

In accordance with City Council Referral 12-7-93-7d(6), we have reviewed the San Jose Fire Department's current emergency medical service (EMS) response times in San Jose. This is an informational report only and does not make any recommendations. Our review of EMS responses covers the period of July 1, 1993, through September 30, 1993, and makes comparisons to results from two previous reviews conducted by the City Auditor.¹ The Scope and Methodology section of this report describes the limitations of our work. We conducted our review in accordance with generally accepted government auditing standards.

The City Auditor's Office thanks the Police and Fire Department communications staff members who provided the computer reports and other data which made our timely review possible.

¹ See City Auditor Report #91-04, *A Review Of San Jose Fire Department And Santa Clara County Paramedic Response To Calls For Emergency Medical Service*, issued March 1991, and Report #93-02, *A Review Of The 1992 Emergency Medical Services Dispatch Process And Response Times In San Jose With Comparison To 1990 Performance*, issued March 1993.

SCOPE AND METHODOLOGY

Our review of current San Jose Fire Department (SJFD) emergency medical service (EMS) response performance covered the period of July 1, 1993, through September 30, 1993. We also made comparisons to response performance for the same period in 1990 and 1992.² Fire and Police Department communications staff provided the data for 1993 in both computer disk and hard copy formats. This data, extracted from the City's computer-aided dispatch (CAD) system, includes all 9,147 SJFD responses to emergency medical events dispatched during the given time period.³ Therefore, the results in this report are for 100 percent of the EMS activity for the first quarter of 1993-94. Our data for 1990 and 1992 came from the City Auditor's two earlier reports on EMS response performance. Because we used statistical sampling in these two reviews, the results have some margin for error. Specifically, we sampled 538 responses in 1990 and 297 responses in 1992. We were 95 percent confident that the results of our samples were representative of the time periods studied, plus or minus 2.5 percent.

The 1993 data we obtained was limited to the EMS event number, its location by zone building block, fire station response area, City Council district, and responding unit (engine or truck) number. Response times in minutes were

² For 1990 EMS response performance see City Auditor Report #91-04, *A Review Of San Jose Fire Department And Santa Clara County Paramedic Response To Calls For Emergency Medical Service*, issued March 1991; and for 1992 performance see Report #93-02, *A Review Of The 1992 Emergency Medical Services Dispatch Process And Response Times In San Jose With Comparison To 1990 Performance*, issued March 1993.

³ The EMS events in our 1993 review include all SJFD responses to Priority 1 and Priority 2 EMS and Rescue type events as coded by dispatchers in the City Communications Center. Responses to Rescue events were also subject to sampling selection in our 1990 and 1992 studies.

given for turnout time, travel time, and turnout plus travel combined time for the first responding unit.

We did only limited testing to determine the accuracy of information in the various computer reports used. Such testing included reviewing the parameters of the program used to extract the data from the CAD system and determining that some programmed item counts and average response times calculated for the fire station response areas and City Council districts were accurate. However, we did not review the general systems controls or the specific application controls for the computer systems used to produce any of the reports or data we used.⁴

⁴ See the Scope and Methodology section of City Auditor Report #91-04 and Report #93-02 respectively for the limitations of our 1990 and 1992 studies of EMS response performance.

BACKGROUND

Our review provides detailed information to the San Jose City Council and the City Administration regarding the San Jose Fire Department's (SJFD) current emergency medical service (EMS) response time performance. Specifically, our review covers two segments of the SJFD's total EMS response time: turnout time and travel time. See Diagram 1 on page 6 which shows all time elements of a typical EMS response as described in our previous report.⁵

During our review of 1992 EMS response times, we found that the SJFD had the overall slowest response time performance in City Council District 4 compared to other districts in San Jose. The SJFD did not meet either of its emergency response performance objectives in City Council District 4. These performance objectives were:

- Turnout time (from time of dispatch to time en route) will not exceed 2 minutes for 90 percent of emergency responses.
- Travel time (from time en route to time of arrival for the first arriving unit) will not exceed 4 minutes for 80 percent of emergency responses.

In 1992, City Council District 4 was the only City Council district for which the SJFD did not meet its turnout time performance objective. In addition, City Council District 4 was one of seven City Council districts (Districts 1, 2, 4, 6, 7, 8, and 10) where the SJFD did not meet its travel time performance objective.

Following the May 26, 1993, presentation of our report on 1992 EMS response times, the City Council has twice referred requests to the

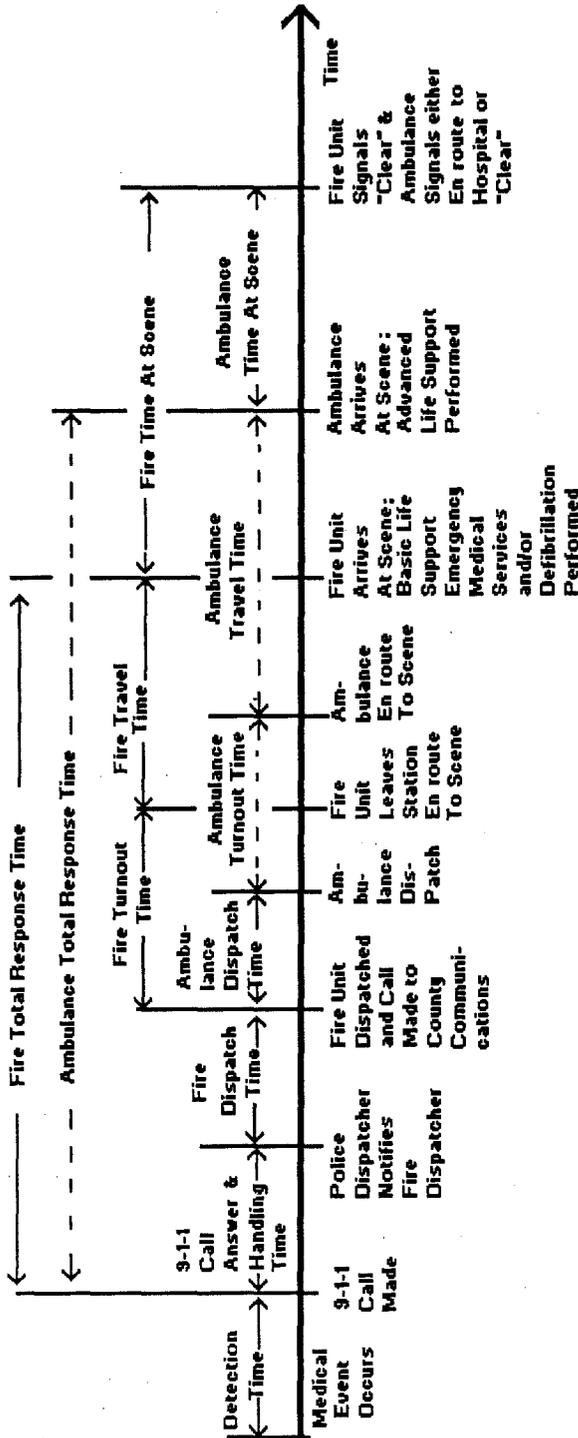
⁵ See City Auditor Report #93-02.

Administration for additional information on EMS response times, particularly those within City Council District 4.⁶ While the SJFD has responded to these referrals, it has not provided reasons why its response times in City Council District 4 remained relatively slow despite the opening in July 1992 of Fire Station 29 in that district. In a November 1993 memorandum to the Finance Committee, the SJFD indicated that with Fire Station 29 in place its travel time and overall response time in City Council District 4 should be faster. The SJFD did not provide any statistical data to support its faster response time assumption. At its November 24, 1993, meeting, the Finance Committee requested the City Auditor to study updated information about the SJFD's EMS response times, particularly in the Fire Station 29 and City Council District 4 areas. This report is in response to the Finance Committee's request.

⁶ Finance Committee Referral 5-26-93, and City Council Referral 8-3-93-7d(2).

DIAGRAM 1

TIME ELEMENTS OF A TYPICAL 1992 EMS RESPONSE WHEN 9-1-1 CALL IS ANSWERED BY SAN JOSE COMMUNICATIONS CENTER



Note: The relative lengths of the time segments are not drawn to scale to allow space for descriptions.

**A REVIEW OF SAN JOSE FIRE DEPARTMENT
EMERGENCY MEDICAL SERVICE RESPONSE TIMES
FROM JULY 1, 1993, THROUGH SEPTEMBER 30, 1993**

In accordance with City Council Referral 12-7-93-7d(6), we have reviewed the San Jose Fire Department's (SJFD) current emergency medical service (EMS) response times. Our review provides detailed information to the San Jose City Council and the City Administration regarding SJFD's turnout and travel times in response to EMS events.

Our review of SJFD responses to EMS events from July 1, 1993, through September 30, 1993 revealed the following:

- The SJFD responded to 9,147 EMS events during this period;
- City Council District 3 had the highest volume of EMS events while City Council District 10 had the lowest volume of EMS events;
- When compared to 1990 and 1992, the SJFD's responses to EMS events during July 1, 1993, through September 30, 1993, were slower Citywide and were also generally slower in each City Council district;
- In only one City Council district (District 1) did the SJFD meet its turnout time objective of 2 minutes or less for 90 percent of responses;
- In only three City Council districts (Districts 3, 5, and 6) did the SJFD meet its travel time objective of 4 minutes or less for 80 percent of responses;
- City Council District 4 had the lowest percentage of responses that were 2 minutes or less for turnout time (82 percent) and 4 minutes or less for travel time (56 percent); and
- When compared to our 1992 study results, neither the SJFD's 1993 travel time nor combined turnout time plus travel time performance in City Council District 4 improved.

**The SJFD Responded To 9,147 EMS Events
From July 1, 1993, Through September 30, 1993**

Of the total 11,954 emergency incidents to which SJFD vehicles were dispatched from July 1, 1993, through September 30, 1993, 77 percent were EMS type events. Of these 9,147 EMS events, 9,102 were in the city of San Jose (City) and 45 were outside the City limits. Responses outside of the City may be to auto-aid areas for the Central Fire District, California Division of Forestry, South County Fire District, and the cities of Milpitas, Morgan Hill, Santa Clara, or Saratoga.

**City Council District 3 Had The Highest Volume Of EMS Events
While City Council District 10 Had The Lowest Volume Of EMS Events**

Table I categorizes the 9,102 EMS events dispatched in the City from July 1, 1993, through September 30, 1993, by City Council district.⁷ As Table I shows, City Council District 3 had the highest volume of EMS events to which the SJFD dispatched vehicles from various fire stations serving the district, while City Council District 10 had the least number of EMS events during the period.

⁷ The number of arrivals at the scene for each City Council district is less than the number of dispatches from fire stations because a number of EMS dispatches are always canceled before the first dispatched SJFD unit arrives at the scene. For example, the ambulance may have arrived first and requested that the SJFD unit be canceled, or the SJFD may have been notified that the call was a false alarm.

TABLE I

**VOLUME OF EMS EVENTS BY CITY COUNCIL DISTRICT
FROM JULY 1, 1993, THROUGH SEPTEMBER 30, 1993**

City Council District	Number of Dispatches From Fire Stations	Number of Arrivals At Scene
3	1,989	1,904
6	1,139	1,097
5	1,125	1,073
7	1,070	1,034
4	757	729
9	690	663
1	649	626
8	639	615
2	557	541
10	487	470
Citywide	9,102	8,752

Each City Council district has a number of fire stations serving it. Although a fire station may be physically located in a particular district, its response area may cover part of another district as well. For example, City Council District 4 is served by Fire Stations 2, 5, 19, 23, 25, and 29. Stations 23, 25, and 29 are both located in and serve as first due responders for City Council District 4. Stations 5 and 19 are physically located in City Council District 4, but also serve City Council Districts 3 and 5, respectively, as first due responders. Station 2, located in City Council District 5, also covers part of City Council District 4 as the first due station. Table II lists the street address and City Council district number for each of the City's 29 fire stations.

TABLE II
LOCATION OF SJFD FIRE STATIONS

Fire Station #	Street Address	City Council District
1	201 N. Market Street	3
2	2933 Alum Rock Avenue	5
3	98 Martha Street	3
4	710 Leigh Avenue	6
5	1380 N. Tenth Street	4
6	1386 Cherry Avenue	6
7	800 Emory Street	6
8	802 E. Santa Clara Street	3
9	3410 Ross Avenue	9
10	511 S. Monroe Street	6
11	2840 The Villages Parkway	8
12	502 Calero Avenue	2
13	4380 Pearl Avenue	10
14	1201 San Tomas Aquino	1
15	1248 Blaney Avenue	1
16	2001 S. King Road	7
17	1494 Ridgewood Drive	9
18	4430 S. Monterey Road	2
19	1025 Piedmont Road	4
20	1433 Airport Boulevard	3
21	1749 Mt. Pleasant Road	8
22	6461 Bose Lane	10
23	1771 Via Cinco de Mayo	4
24	2525 Aborn Road	8
25	4758 Gold Street	4
26	528 Tully Road	7
27	239 Bernal Road	2
28	20399 Almaden Road	10
29	199 Caviglia Drive	4

Table III categorizes July 1, 1993, through September 30, 1993, EMS events by fire station response area. As Table III shows, Fire Station 8 had the highest EMS event volume, while Fire Station 25 had the least activity.⁸

TABLE III
VOLUME OF EMS EVENTS BY FIRE STATION RESPONSE AREA
FROM JULY 1, 1993, THROUGH SEPTEMBER 30, 1993

<u>Fire Station Response Area</u>	<u>Number Of Dispatches From Fire Stations</u>	<u>Number Of Arrivals At Scene</u>
8	756	722
1	685	661
2	678	643
3	598	575
16	580	552
18	491	472
26	487	473
14	467	448
4	446	428
9	379	360
13	338	327
5	310	296
12	308	303
6	294	285
24	294	281
10	260	254
23	239	231
17	224	220
19	208	201
21	203	196
7	183	174
27	139	134
29	134	130
22	108	102
15	93	93
11	77	75
20	57	57
28	39	37
25	35	33
Citywide	<u>9,110</u>	<u>8,763</u>

⁸ It should be noted that the total number of EMS events dispatched shown on Table III (9,110) is higher than the total on Table I (9,102) because there were 8 events in the first due response area for some fire stations that are actually outside the City limits and therefore are not geographically within a City Council district. Similar to Table I, the number of arrivals at the scene in Table III (8,763) is less than the number of dispatches from fire stations (9,110) because of cancellations while en route.

When Compared To 1990 And 1992, The SJFD's Responses To EMS Events During July 1, 1993, Through September 30, 1993, Were Slower Citywide And Generally Slower In Each City Council District

Table IV summarizes the 1990 to 1993 SJFD EMS performance by City Council district for turnout time, travel time, and combined turnout and travel time. Overall, there was a slight decline of 1 percent in the Citywide performance for turnout and travel time combined from 1990 to 1993. Between 1990 and 1992 the percentage of responses with combined turnout and travel time of 6 minutes or less improved 2 percent and then fell by 3 percent from 1992 to 1993. Table V on page 14 categorizes the same 1990 to 1993 EMS performance data by fire station response area.

Only One City Council District (District 1) Met The SJFD's Turnout Time Objective Of 2 Minutes Or Less For 90 Percent Of Responses

In 1992, the SJFD met its turnout time objective of 2 minutes or less for 90 percent of responses in all but one City Council district (District 4). However, for 1993 as shown in Table IV, only City Council District 1 met the turnout time performance objective. The SJFD achieved 92 percent of its turnout responses in City Council District 1 within 2 minutes. Except for City Council District 4, all districts show a decline in turnout time performance since 1992.

TABLE IV

1990 TO 1993
 SUMMARY OF TURNOUT AND TRAVEL TIME PERFORMANCE
 BY CITY COUNCIL DISTRICT

SJFD RESPONSE PERFORMANCE OBJECTIVES
 TURNOUT TIME: 90% NOT TO EXCEED 2 MINUTES
 TRAVEL TIME: 80% NOT TO EXCEED 4 MINUTES
 TURNOUT + TRAVEL COMBINED: NO OBJECTIVE

----- TURNOUT TIME PERFORMANCE -----

CITY COUNCIL DISTRICT	1990		1992		1993		1992 TO 1993 IMPROVEMENT OR (DECLINE)	
	RESPONSE WITHIN 2 MINUTES	1990	RESPONSE WITHIN 2 MINUTES	1992	RESPONSE WITHIN 2 MINUTES	1993	1992 TO 1993 IMPROVEMENT OR (DECLINE)	1992 TO 1993 IMPROVEMENT OR (DECLINE)
1	84%	82%	94%	87%	82%	87%	(2%)	(4%)
2	71%	91%	91%	89%	89%	89%	(2%)	(4%)
3	95%	91%	91%	82%	82%	82%	9%	9%
4	82%	73%	73%	87%	87%	87%	(11%)	(3%)
5	90%	93%	93%	88%	88%	88%	(7%)	(3%)
6	89%	91%	96%	89%	89%	89%	(9%)	(9%)
7	88%	96%	96%	87%	87%	87%	(9%)	(9%)
8	86%	95%	95%	83%	83%	83%	(12%)	(8%)
9	88%	92%	92%	84%	84%	84%	(8%)	(5%)
10	73%	92%	92%	87%	87%	87%	(5%)	(5%)
CITYWIDE	88%	92%	92%	87%	87%	87%	(5%)	(5%)

----- TRAVEL TIME PERFORMANCE -----

CITY COUNCIL DISTRICT	1990		1992		1993		1992 TO 1993 IMPROVEMENT OR (DECLINE)	
	RESPONSE WITHIN 4 MINUTES	1990	RESPONSE WITHIN 4 MINUTES	1992	RESPONSE WITHIN 4 MINUTES	1993	1992 TO 1993 IMPROVEMENT OR (DECLINE)	1992 TO 1993 IMPROVEMENT OR (DECLINE)
1	70%	71%	71%	75%	75%	75%	4%	4%
2	77%	64%	64%	57%	57%	57%	(7%)	(7%)
3	84%	93%	93%	90%	90%	90%	(4%)	(4%)
4	61%	73%	73%	56%	56%	56%	(17%)	(17%)
5	84%	90%	90%	81%	81%	81%	(9%)	(9%)
6	87%	67%	67%	81%	81%	81%	14%	14%
7	67%	66%	66%	68%	68%	68%	2%	2%
8	66%	76%	76%	68%	68%	68%	(8%)	(8%)
9	82%	86%	86%	76%	76%	76%	(2%)	(2%)
10	80%	62%	62%	68%	68%	68%	6%	6%
CITYWIDE	76%	78%	78%	75%	75%	75%	(3%)	(3%)

----- TURNOUT + TRAVEL TIME PERFORMANCE -----

CITY COUNCIL DISTRICT	1990		1992		1993		1992 TO 1993 IMPROVEMENT OR (DECLINE)	
	RESPONSE WITHIN 6 MINUTES	1990	RESPONSE WITHIN 6 MINUTES	1992	RESPONSE WITHIN 6 MINUTES	1993	1992 TO 1993 IMPROVEMENT OR (DECLINE)	1992 TO 1993 IMPROVEMENT OR (DECLINE)
1	81%	93%	93%	86%	86%	86%	(7%)	(7%)
2	80%	73%	73%	68%	68%	68%	(5%)	(5%)
3	88%	95%	95%	93%	93%	93%	(2%)	(2%)
4	81%	68%	68%	65%	65%	65%	(3%)	(3%)
5	93%	85%	85%	87%	87%	87%	(8%)	(8%)
6	88%	77%	77%	88%	88%	88%	11%	11%
7	78%	83%	83%	82%	82%	82%	(1%)	(1%)
8	75%	88%	88%	79%	79%	79%	(9%)	(9%)
9	84%	81%	81%	85%	85%	85%	4%	4%
10	80%	77%	77%	83%	83%	83%	1%	1%
CITYWIDE	84%	86%	86%	83%	83%	83%	(3%)	(3%)

TABLE V

1990 TO 1993
SUMMARY OF TURNOUT AND TRAVEL TIME PERFORMANCE
BY FIRE STATION RESPONSE AREA

SJFD RESPONSE PERFORMANCE OBJECTIVES
TURNOUT TIME: 90% NOT TO EXCEED 2 MINUTES
TRAVEL TIME: 80% NOT TO EXCEED 4 MINUTES
TURNOUT + TRAVEL COMBINED: NO OBJECTIVE

----- TURNOUT TIME PERFORMANCE -----

----- TRAVEL TIME PERFORMANCE -----

TURNOUT + TRAVEL TIME PERFORMANCE

FIRE STATION AREA	1990			1992			1993			1990			1992			1993		
	RESPONSE WITHIN 2 MINUTES	IMPROVEMENT OR (DECLINE)	1992 TO 1993	RESPONSE WITHIN 2 MINUTES	IMPROVEMENT OR (DECLINE)	1992 TO 1993	RESPONSE WITHIN 2 MINUTES	IMPROVEMENT OR (DECLINE)	1992 TO 1993	RESPONSE WITHIN 4 MINUTES	IMPROVEMENT OR (DECLINE)	1992 TO 1993	RESPONSE WITHIN 4 MINUTES	IMPROVEMENT OR (DECLINE)	1992 TO 1993	RESPONSE WITHIN 6 MINUTES	IMPROVEMENT OR (DECLINE)	1992 TO 1993
1	93%	(4%)	86%	92%	(4%)	85%	96%	(1%)	95%	(1%)	92%	95%	(1%)	96%	91%	96%	96%	0%
2	87%	(13%)	87%	83%	(13%)	83%	83%	0%	83%	0%	83%	83%	0%	83%	91%	90%	90%	(1%)
3	94%	(14%)	86%	86%	(7%)	85%	83%	(7%)	85%	(7%)	86%	85%	(7%)	85%	93%	95%	90%	(5%)
4	96%	(2%)	91%	92%	(2%)	88%	62%	26%	88%	26%	88%	88%	0%	80%	80%	92%	92%	12%
5	93%	(1%)	81%	73%	(34%)	86%	100%	(34%)	86%	(34%)	86%	86%	0%	92%	92%	75%	75%	(17%)
6	88%	18%	89%	81%	(10%)	73%	83%	(10%)	73%	(10%)	73%	73%	0%	63%	63%	83%	83%	20%
7	78%	6%	86%	78%	(18%)	82%	100%	(18%)	82%	(18%)	82%	82%	0%	100%	100%	87%	87%	(13%)
8	100%	(6%)	94%	87%	(7%)	82%	89%	(7%)	82%	(7%)	82%	82%	0%	94%	94%	88%	88%	(6%)
9	88%	(13%)	80%	81%	(13%)	74%	71%	3%	74%	3%	74%	74%	0%	69%	69%	83%	83%	(4%)
10	77%	(12%)	88%	83%	(12%)	76%	57%	19%	76%	19%	76%	76%	0%	75%	75%	88%	88%	13%
11	75%	(22%)	78%	75%	(22%)	73%	100%	(22%)	73%	(22%)	73%	73%	0%	100%	100%	80%	80%	(20%)
12	74%	(18%)	82%	76%	(18%)	86%	75%	(9%)	86%	(9%)	86%	86%	0%	60%	60%	74%	74%	14%
13	67%	(15%)	85%	57%	(15%)	72%	78%	(6%)	72%	(6%)	72%	57%	(6%)	88%	88%	82%	82%	(7%)
14	93%	(3%)	90%	69%	(3%)	80%	62%	18%	80%	18%	80%	80%	0%	86%	86%	88%	88%	2%
15	100%	(3%)	97%	75%	(24%)	76%	100%	(24%)	76%	(24%)	76%	76%	0%	100%	100%	80%	80%	(20%)
16	96%	(9%)	86%	82%	(9%)	84%	81%	3%	84%	3%	84%	84%	0%	94%	94%	90%	90%	(4%)
17	86%	0%	86%	86%	0%	86%	100%	(17%)	83%	(17%)	83%	83%	0%	100%	100%	89%	89%	(11%)
18	88%	(4%)	90%	60%	(4%)	68%	50%	18%	68%	18%	68%	68%	0%	100%	100%	80%	80%	(20%)
19	93%	(30%)	97%	64%	(30%)	72%	83%	(11%)	72%	(11%)	72%	72%	0%	67%	67%	83%	83%	15%
20	100%	41%	91%	50%	41%	88%	50%	38%	88%	38%	88%	88%	0%	50%	50%	86%	86%	36%
21	77%	(14%)	86%	77%	(14%)	85%	100%	(35%)	85%	(35%)	85%	85%	0%	100%	100%	75%	75%	(25%)
22	79%	(13%)	87%	79%	(13%)	64%	75%	(11%)	64%	(11%)	64%	64%	0%	100%	100%	75%	75%	(25%)
23	85%	27%	77%	61%	27%	50%	67%	(17%)	50%	(17%)	50%	50%	0%	50%	50%	59%	59%	9%
24	91%	5%	90%	64%	5%	62%	69%	(7%)	62%	(7%)	62%	62%	0%	71%	71%	77%	77%	6%
25	46%	77%	77%	50%	77%	82%	0%	82%	82%	0%	82%	82%	0%	0%	0%	84%	84%	84%
26	93%	(10%)	90%	50%	(10%)	64%	68%	(4%)	64%	(4%)	64%	64%	0%	83%	83%	81%	81%	(2%)
27	67%	16%	91%	78%	16%	40%	50%	(10%)	40%	(10%)	40%	40%	0%	60%	60%	52%	52%	(28%)
28	0%	(33%)	67%	100%	(33%)	35%	33%	2%	35%	2%	35%	35%	0%	80%	80%	41%	41%	8%
29	N/A	(25%)	75%	N/A	(25%)	37%	0%	37%	37%	37%	37%	37%	0%	0%	0%	45%	45%	45%
CITYWIDE	88%	(5%)	87%	76%	(5%)	75%	78%	(3%)	75%	(3%)	75%	75%	0%	86%	86%	83%	83%	(3%)

**Only Three City Council Districts (Districts 3, 5, And 6)
Met The SJFD's Travel Time Objective
Of 4 Minutes Or Less For 80 Percent Of Responses**

In 1992, the SJFD met its travel time objective of 4 minutes or less for 80 percent of responses in only three of the ten City Council districts. For 1993, as shown in Table IV on page 13, the SJFD still met the travel time performance objective in only three City Council districts (Districts 3, 5, and 6). From 1992 to 1993, the SJFD's travel time performance declined in six of the City Council districts (Districts 2, 3, 4, 5, 8, and 9).

**City Council District 4 Had The Lowest Percentage Of Responses
That Were 2 Minutes Or Less For Turnout Time (82 Percent)
And 4 Minutes Or Less For Travel Time (56 Percent)**

The SJFD achieved its best travel time performance for 1993 in City Council District 3 with 90 percent of its responses within 4 minutes, as shown in Table VI. The best SJFD performance for combined turnout and travel time was also in City Council District 3 where 93 percent of the responses were in 6 minutes or less. The SJFD's performance in City Council District 4 was the poorest in the City in all three categories: turnout time (82 percent within 2 minutes), travel time (56 percent within 4 minutes), and combined turnout and travel time (65 percent within 6 minutes). Table VII on page 17 categorizes the same 1993 EMS performance data by fire station response area.

TABLE VI

SUMMARY OF TURNOUT AND TRAVEL TIME PERFORMANCE

BY CITY COUNCIL DISTRICT
 FROM JULY 1, 1993, THROUGH SEPTEMBER 30, 1993

S.JFD RESPONSE PERFORMANCE OBJECTIVES	TURNOUT TIME: 90% NOT TO EXCEED 2 MINUTES	TRAVEL TIME : 80% NOT TO EXCEED 4 MINUTES	TURNOUT + TRAVEL COMBINED: NO OBJECTIVE

TURNOUT TIME

CITY COUNCIL DISTRICT	RESPONSE WITHIN 2 MINUTES	AVERAGE TURNOUT TIME
4	82%	1:31
2	87%	1:29
10	84%	1:28
8	87%	1:26
7	89%	1:20
9	83%	1:33
1	92%	1:22
5	87%	1:26
6	88%	1:25
3	89%	1:24
CITYWIDE	87%	1:26

TRAVEL TIME

CITY COUNCIL DISTRICT	RESPONSE WITHIN 4 MINUTES	AVERAGE TRAVEL TIME
4	56%	3:58
2	57%	3:59
10	68%	3:33
8	68%	3:26
7	68%	3:29
9	78%	3:11
1	75%	3:15
5	81%	3:11
6	81%	3:09
3	90%	2:29
CITYWIDE	75%	3:14

TURNOUT + TRAVEL TIME

CITY COUNCIL DISTRICT	RESPONSE WITHIN 6 MINUTES	AVERAGE TURNOUT + TRAVEL TIME
4	65%	5:28
2	68%	5:28
10	78%	5:01
8	79%	4:53
7	82%	4:49
9	85%	4:43
1	86%	4:37
5	87%	4:37
6	88%	4:34
3	93%	3:53
CITYWIDE	83%	4:39

TABLE VII

SUMMARY OF TURNOUT AND TRAVEL TIME PERFORMANCE
BY FIRE STATION RESPONSE AREA
FROM JULY 1, 1993, THROUGH SEPTEMBER 30, 1993

<i>SJFD RESPONSE PERFORMANCE OBJECTIVES</i>	<i>TURNOUT TIME: 90% NOT TO EXCEED 2 MINUTES</i>	<i>TRAVEL TIME : 80% NOT TO EXCEED 4 MINUTES</i>	<i>TURNOUT + TRAVEL COMBINED: NO OBJECTIVE</i>
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TURNOUT TIME			TRAVEL TIME		TURNOUT + TRAVEL	
FIRE STATION AREA	RESPONSE WITHIN 2 MINUTES	AVERAGE TURNOUT TIME	RESPONSE WITHIN 4 MINUTES	AVERAGE TRAVEL TIME	RESPONSE WITHIN 6 MINUTES	AVERAGE TURNOUT + TRAVEL TIME
28	67%	1:47	35%	4:50	41%	6:39
29	75%	1:41	37%	4:42	45%	6:23
27	91%	1:29	40%	4:52	52%	6:21
23	77%	1:37	50%	4:12	59%	5:49
5	81%	1:34	66%	3:39	75%	5:09
11	78%	1:38	73%	3:30	80%	5:08
12	82%	1:30	66%	3:35	74%	5:06
22	87%	1:25	64%	3:41	75%	5:05
21	86%	1:30	65%	3:36	75%	5:05
13	85%	1:27	72%	3:35	82%	5:04
24	90%	1:23	62%	3:37	77%	5:00
18	90%	1:26	68%	3:34	80%	5:00
26	90%	1:14	64%	3:36	81%	4:49
6	89%	1:24	73%	3:25	83%	4:48
9	80%	1:36	74%	3:09	83%	4:45
10	88%	1:22	76%	3:22	88%	4:45
20	91%	1:48	88%	2:54	86%	4:42
25	77%	1:42	82%	2:56	84%	4:41
19	97%	1:10	72%	3:29	82%	4:39
15	97%	1:16	76%	3:22	80%	4:38
7	86%	1:29	82%	3:05	87%	4:35
17	86%	1:29	83%	3:04	89%	4:32
14	90%	1:25	80%	3:05	88%	4:29
16	86%	1:25	84%	3:01	90%	4:27
2	87%	1:25	83%	3:01	90%	4:26
4	91%	1:24	88%	2:55	92%	4:19
8	94%	1:19	82%	2:54	88%	4:14
3	86%	1:26	85%	2:42	90%	4:08
1	88%	1:23	95%	2:05	96%	3:27
CITYWIDE	87%	1:26	75%	3:14	83%	4:39

**When Compared To Our 1992 Study Results,
Neither The SJFD's 1993 Travel Time Nor Combined
Turnout Time Plus Travel Time Performance
In City Council District 4 Improved**

To further analyze which fire stations in City Council District 4 are responsible for the relatively poor EMS response performance in that district as compared to other areas of the City, we prepared Table VIII for the fire stations that serve City Council District 4. Table VIII summarizes 1992 and 1993 SJFD turnout and travel time performance for all EMS event activity in the response areas for stations serving the district. As Table VIII indicates, Fire Stations 23 and 29 had the poorest combined turnout and travel time performance in the district with only 59 percent and 45 percent, respectively, for responses in 6 minutes or less.

Table IX on page 20 then looks exclusively at the 1993 EMS response performance in City Council District 4 for all 757 of the events dispatched from July 1, 1993, through September 30, 1993.⁹ Turnout and travel time performance is shown incrementally by minutes as to both the number and percentage of EMS events achieving that time. The average and longest times for each segment are also shown in Table IX.

⁹ Note that the number of events on Table IX for travel time (729) is less than the number for turnout time (757) because the dispatch for 28 events was canceled after the fire unit had already gone en route from the fire station. Also, the number of events with combined turnout and travel time (718) is less still because for 11 events the first responding unit did not have a turnout time (i.e., it was not in the station at the time of dispatch).

TABLE VIII

1992 TO 1993
SUMMARY OF TURNOUT AND TRAVEL TIME PERFORMANCE
 ALL ACTIVITY FOR STATIONS THAT SERVE CITY COUNCIL DISTRICT 4

SJFD RESPONSE PERFORMANCE OBJECTIVES	TURNOUT TIME: 90% NOT TO EXCEED 2 MINUTES	TRAVEL TIME: 80% NOT TO EXCEED 4 MINUTES	TURNOUT + TRAVEL COMBINED: NO OBJECTIVE
--------------------------------------	---	--	--

TURNOUT TIME PERFORMANCE

TRAVEL TIME PERFORMANCE

TURNOUT + TRAVEL TIME

FIRE STATION AREA	1992		1993		1992 TO 1993 IMPROVEMENT OR (DECLINE)		1992		1993		1992 TO 1993 IMPROVEMENT OR (DECLINE)	
	RESPONSE WITHIN 2 MINUTES	87%	RESPONSE WITHIN 2 MINUTES	81%	30%	RESPONSE WITHIN 4 MINUTES	83%	RESPONSE WITHIN 6 MINUTES	91%	RESPONSE WITHIN 6 MINUTES	75%	15%
2	100%	87%	100%	83%	0%	83%	91%	90%	91%	90%	(1%)	
5	82%	81%	100%	66%	(34%)	100%	92%	75%	92%	75%	(17%)	
19	67%	97%	83%	72%	(11%)	83%	67%	82%	67%	82%	15%	
23	50%	77%	57%	50%	(17%)	57%	50%	59%	50%	59%	9%	
25	0%	77%	0%	82%	82%	0%	0%	84%	0%	84%	84%	
29	100%	75%	0%	37%	37%	0%	0%	45%	0%	45%	45%	
DISTRICT	73%	82%	73%	56%	(17%)	73%	68%	65%	68%	65%	(3%)	
CITYWIDE	92%	87%	78%	75%	(3%)	78%	86%	83%	86%	83%	(3%)	

TABLE IX

CITY COUNCIL DISTRICT 4
EMS TURNOUT, TRAVEL, AND COMBINED RESPONSE TIMES

FROM JULY 1, 1993, THROUGH SEPTEMBER 30, 1993

TURNOUT TIME			TRAVEL TIME			TURNOUT + TRAVEL TIME		
Length of Turnout Time	Number of EMS Events	Percentage of EMS Events	Length of Travel Time	Number of EMS Events	Percentage of EMS Events	Length of Turnout + Travel	Number of EMS Events	Percentage of EMS Events
<= 1 Minute	163	21%	<= 1 Minute	10	1%	<= 3 Minutes	47	6%
> 1 Minute <= 2 Minutes	460	61%	> 1 Minute <= 2 Minutes	60	8%	> 3 Minutes <= 4 Minutes	113	16%
> 2 Minutes <= 3 Minutes	119	16%	> 2 Minutes <= 3 Minutes	174	24%	> 4 Minutes <= 5 Minutes	165	23%
> 3 Minutes	15	2%	> 3 Minutes <= 4 Minutes	161	22%	> 5 Minutes <= 6 Minutes	141	20%
TOTALS	757	100%	> 4 Minutes <= 5 Minutes	152	21%	> 6 Minutes <= 7 Minutes	118	16%
Average Time 1:31 Longest Time 9:45			> 5 Minutes <= 6 Minutes	87	12%	> 7 Minutes <= 8 Minutes	70	10%
			> 6 Minutes <= 7 Minutes	49	7%	> 8 Minutes <= 9 Minutes	30	4%
			> 7 Minutes <= 8 Minutes	16	2%	> 9 Minutes <= 10 Minutes	14	2%
			> 8 Minutes	20	3%	> 10 Minutes	20	3%
TOTALS			729	100%	TOTALS	718	99%	
Average Time 3:58 Longest Time 16:59			Average Time 5:28 Longest Time 20:03					

CITY OF SAN JOSE - MEMORANDUM

TO: Gerald A. Silva
City Auditor

FROM: Donald W. Kelley
Acting Fire Chief

SUBJECT: FIRE DEPARTMENT RESPONSE TO
"A REVIEW OF SAN JOSE FIRE
DEPARTMENT EMERGENCY MEDICAL
SERVICE (EMS) RESPONSE TIMES FROM
JULY 1, 1993 THROUGH SEPTEMBER 30,
1993."

DATE: January 24, 1994

RECEIVED

JAN 24 1994

CITY AUDITOR

APPROVED: *J. Williams*

DATE: 1/24/94

BACKGROUND

The Fire Department has examined "A Review of San Jose Fire Department Emergency Medical Service (EMS) Response Times from July 1, 1993 through September 30, 1993", and submits herein comments on the report's seven conclusions.

Before responding to the 1993 report, it is important to provide certain background information about this subject. Response time is divided into two major components, turnout time and travel time.

Turnout time is the time period that begins when dispatchers have notified the appropriate fire companies that an emergency exists and ends when the fire company informs dispatch that it is en route. This is the time it takes to put on protective clothing, assemble on the fire apparatus and depart the station.

The Department goal is to "turnout" in two minutes or less, 90% of the time.

It should be noted that turnout time may be affected by procedural changes. For example, to enhance employee safety, the procedures have recently been changed so that, before pulling out of the Fire Station, there is a check to determine that all are fastened in their seats prior to departure.

Travel time is the time period that begins when the fire company leaves the station (en route), immediately following the period for turnout, and ends when the company officer advises dispatch that the fire company is at the scene of the emergency.

The Department goal is for travel time to be four minutes or less, 80% of the time.

There are many factors that impact travel time some of which are temporary road repairs, traffic in busy intersections, and the distribution of calls. For example, if a large number of calls occur at the extreme limits of a fire station's area, travel times will be higher.

Data shows the San Jose Fire Department is the first responder to emergency medical service calls 92% of the time. In light of this fact and other considerations, a study is being completed regarding the City providing paramedic services. While the Finance Committee has asked for specific information on the Fire Department's response times to **Emergency Medical Service calls**, it should be noted that response times are but one measure of fire service effectiveness. A combination of factors should be reviewed to arrive at an accurate assessment of the Fire Department's performance. Other common factors used to measure Fire Department effectiveness include:

- Loss of property
- Injuries and fatalities
- Fires per number of residents
- Level of training and certification in emergency medical care

The City Administration would recommend if after the discussion on response times, there are questions regarding the Fire Department's overall effectiveness, that an in-depth report be provided by the City Administration analyzing the department's effectiveness using key performance factors including other acceptable performance measurements, in addition to response time.

In addition to responding to emergency medical calls, the Fire Department responds to all emergency life-threatening calls for which turnout and travel time performance is also measured. We provide the Fire Department's response to these calls later in the report.

RESPONSE TO CONCLUSIONS IN AUDITOR'S REPORT

The Audit report conclusions are shown in italics, followed in regular print with the Department's observations and responses.

1. *The SJFD responded to 9147 EMS events during this period;*

The Fire Department provided the Auditor with the source for this data and concurs.

2. *City Council District 3 had the highest volume of EMS events while City Council District 10 had the lowest volume of EMS events;*

The Fire Department agrees with this conclusion for 1993.

3. *When compared to 1990 and 1992, the SJFD's responses to EMS events during July 1, 1993, through September 30, 1993, were slower Citywide and were also generally slower in each City Council district;*

The Fire Department agrees that using a full quarter in 1993 is an acceptable base of data for reviewing whether the SJFD's responses to EMS events met their turnout

and travel time objectives during that period of time. We do not agree that the comparison of 1993 data (approximately 9,100 events) and 1992 data (297 events, representing a sample of the total of 8500 events) used in this report supports the conclusion that SJFD's responses to EMS events were slower Citywide in 1993. To draw conclusions regarding the responses in 1993 being slower than 1992, additional analysis of the data would be necessary. Our concern is based on the statistical methodology used to arrive at the conclusions.

The conclusions based on comparisons from one year to the next at the Council District level, using a sample for one of the year's is not appropriate or reliable, since you cannot apply the same confidence factor to subsets of the sample as you would do with the full sample.

The 297 events chosen for the 1992 sample were for a Citywide sample. The Auditor then used this same sample and broke it down into the 10 Council District areas as subsets, and then drew conclusions at this level. The sample does not ensure that each Council District is proportionally represented in the sample. To make a valid comparison at the Council District level, the Council District sample should be a percentage that is representative of the total response for that District.

4. *In only one City Council District (District 1) did the SJFD meet its turnout time objective of 2 minutes or less for 90 percent of responses;*

The Fire Department agrees and we have taken steps to improve this area which we will comment on later in the report.

5. *In only three Council Districts (Districts 3, 5, and 6) did the SJFD meet its travel time objective of 4 minutes or less for 80 percent of responses;*

The Fire Department agrees with this statement and we have identified factors impacting this response time and how we will improve in this area commented on later in the report.

6. *City Council District 4 had the lowest percentage of responses that were 2 minutes or less for turnout time (82 percent) and 4 minutes or less for travel time (56 percent);*

The Fire Department agrees and we are identifying steps for improvement which are found later in this document.

7. *When compared to our 1992 study results, the SJFD's 1993 travel time or combined turnout time plus travel time performance in City Council District 4 did not improve.*

Again, we do not think it is appropriate to interpret the results to conclude that the SJFD's response times, travel time or combined turnout time plus travel time performance, at the Council District level, improved or declined from 1992, based on the way the data was collected.

We would like to specifically respond to City Council District 4's performance for the 1993 time period. The Auditor's report indicates that City Council District 4 met its travel time objective only 56% of the time.

Starting in May, 1993, major road work, which is still underway was started on Zanker Road, forcing detours and temporary increases in travel times for many of Engine 29's responses. Additionally, as noted below under general comments, one of the factors affecting travel time is the additional development which occurs after a fire station has been located. Development requiring a large amount of responses has occurred at one of the extremes of Station 29's area which would cause high travel times. Additional factors impacting these times are presented below and later in the report we identify factors that will improve these times.

ANALYSIS

The Fire Department has conducted a limited analysis of the data, due to constraints in automated management information reports and staff resources. The department has concluded that overall turnout and travel response times did not substantially decrease in 1993 compared to 1992. We will comment on this later in the report. Additionally, the department has identified a number of factors that have potentially resulted in us not meeting the turnout and travel time objectives.

Turnout Times

After the 1992 Audit, The Fire Department Communications Dispatchers developed a manual Pre-Alert pilot program to reduce the turn out time on emergencies. This Pre-Alert system provides for early notification to the affected fire station of an incoming emergency event. This process is expected to improve turnout time. Fire Communications, as of January 1994, is utilizing this Pre-Alert system on EMS calls.

However, it should be noted that although this system works during routine traffic periods, the process must be automated to provide this service on all calls. A budget change proposal has been developed for review during the 1994-95 budget preparation to cover the cost of CAD system enhancements that will provide a Pre-Alert even during busy traffic periods.

Travel times

There are many variables which can have an effect on expected travel time. Some of these variables are as follows:

- Safety issues. Since 1992, an increased emphasis has been placed on safety overall. This includes exercising more caution when departing the station and when traveling on emergencies, particularly at intersections.

- Road construction. During the 1993 study period, major road work, which is still underway, was prevalent in many parts of our City, forcing detours and temporary increases in travel times for many responses. No analysis has been done to determine which alarms may have been affected, but it is likely that many were greater than 4 minutes because of this construction.
- Relocations of existing apparatus. Fire station construction work for earthquake seismic retrofit was undertaken at 4 stations. This made it necessary to relocate the apparatus for extended periods of time during 1993. These temporary relocations have caused travel times to be greater than usual for many responses. The overall negative affect on travel time associated with these apparatus relocations is unknown. However, it is certain that these relocations would lead to an overall increase of the travel time for these stations. Permanently redeploying some existing companies in multiple company stations to new locations could result in reduced travel times throughout the City.
- Distribution of alarms. If a great percentage of alarms occur close to fire stations, more travel times will be low. However, if a large number of alarms occur at the extreme limits of the fire station's first due area, travel times will be higher and the percentage of travel times more than 4 minutes will increase.
- Reductions in responding units. When Station 29 was opened in July, 1992, it was necessary to take four hose wagons out of service from Stations 3, 5, 13, and 14 to provide personnel to staff new Engine 29. After July, 1992, there was one less responding unit available at Stations 3, 5, 13, and 14, causing some increased travel times for alarms in these areas, since units from other stations, with increased travel times, were required to respond more frequently into these areas. When the hose wagons were eliminated, it was felt that the service level reduction would not be significant. However, further analysis on the possible impact on response times is needed.
- Future development. New construction which occurs after a fire station has been built will have an effect on the number of alarms and the overall travel times. Some development, requiring a large number of responses, has occurred at one of the extremes of Station 29's area causing longer travel times.
- First due unit may be out of service. Travel times will be higher if the second due unit is responding as a first due unit when the first due unit is out of service.
- Annual increases in alarms. The number of fire department responses has been increasing consistently about 5% per year. As companies respond on more alarms, they will be out of service more often, and second due units will be required to respond, thus increasing travel times.
- Traffic conditions Traffic during rush hours or adverse weather will cause travel time to be greater. Increasing traffic congestion on surface streets continues to

increase travel times. A number of traffic signal controllers have been installed at a number of busy intersections resulting in improved travel time in those areas, especially during heavy traffic conditions. Future statistics should show improved response times to these areas as a result of the signal controllers.

This study reviewed turnout times and travel times for EMS/Rescue calls only, however, the Fire Department responds to all emergency life-threatening calls. The turnout and response time objectives for the fire department are for all emergency calls such as EMS, Rescues, aircraft alert, alarm sounding, gas investigation etc. While the Finance Committee has asked for specific information on emergency medical calls, it is important to review the response to all emergency calls. EMS/Rescue calls have traditionally made up about 65-70% of all calls. The 1993 Auditor's report showed that EMS type events were 77% of the total emergency incidents to which SJFD vehicles were dispatched for this period. The chart on the attached page, which the Fire Department prepared, shows a more comprehensive look at turnout and travel time for 1992 and 1993.

On the attached chart, when comparing data of turnout performance for all emergency calls for the period July 1, 1992 to September 30, 1992 (#3 on the attachment) to turnout performance for all emergency medical service calls (excluding fire calls etc.) for the period July 1, 1993 to September 30, 1993, (#2) (the same data as the Auditor's Office used for this review) a decrease of 1.2% is noted. The travel time performance for this same period indicates an increase of .1% in meeting this performance objective.

When comparing turnout time for all emergency calls for the period July 1, 1993 through September 30, 1993 (#4 on the attachment) to only emergency medical calls for the same period (#2), there is no difference. However, for travel times there is a difference of 3.4%, which means that the Fire Department responses to all emergency calls were within 4 minutes 3.4% less of the time than for EMS only responses. A review of only emergency medical calls for the 1992 period was not conducted. It is possible to go back and retrieve this data for 1992, however, the staff time to do this would be considerable.

The chart also looks at a larger base of data by comparing all emergency calls from July 1, 1992 through December 31, 1992 with data from July 1, 1993 through December 31, 1993, a full 6 month period of time. When making this comparison turnout time percentages meeting the objectives decreased by 1.1% and travel time percentages decreased by 1.6%. This comparison indicates that there is a slight decline of the times the Fire Department met its performance time objectives for turnout and travel time.

CONCLUSION

As was stated earlier, the pre-alert system will improve the overall turnout times throughout the City. Regarding travel time, road construction in Station 29's area and the relocation of companies were temporary measures which have abnormally affected

Gerald Silva
January 24, 1994
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travel times in different parts of the City. Data collected after these situations have returned to normal should reflect improved travel times. To continue to improve the Fire Department's turnout and travel time, the Fire Department will further analyze what operational changes can be made to accomplish this and then modify operating procedures accordingly. Additionally, the Fire Department will continue to review turnout and travel time performance and report back to the Finance Committee in one year.



Donald W. Kelley
Acting Fire Chief

Attachment

ATTACHMENT

SJFD TRAVEL TIME AND TURNOUT STATISTICS

Category of Data	Time Period	Number of Events Analyzed	Turnout Time (Goal is two minutes or less 90% of the time)	Travel Time (Goal is four minutes or less 80% of the time)
1. Auditor's Statistical sample of Emergency Medical Services calls only (used as a basis for comparison by Mercury News 1/10/94)	7/1/92 - 9/30/92 (3 days analyzed)	297 (sample out of a universe of about 8,500 calls)	92%	78%
2. SJFD data for Emergency Medical Service only calls (used by Mercury News to demonstrate deterioration of service)	7/1/93 - 9/30/93 (92 days analyzed)	9,147 (entire universe of calls)	87.4%*	75.5%*
3. All Priority 1 and 2** Emergency calls (same time period as Auditor's sample in #1 above)	7/1/92 - 9/30/92 (92 days analyzed)	11,101 (entire universe of calls)	88.6%*	75.4%*
4. SJFD data for all Priority 1 and 2** Emergency calls (slight difference from #2 which is EMS calls only)	7/1/93 - 9/30/93 (92 days analyzed)	11,954 (entire universe of calls)	87.4%	72.1%

For a look at a slightly larger statistical base, we compared data for all Emergency calls from 7/1/92 - 12/31/92 with data from 7/1/93 to 12/31/93.

Category of Data	Time Period	Number of Events Analyzed	Turnout Time (Goal is two minutes or less 90% of the time)	Travel Time (Goal is four minutes or less 80% of the time)
5. SJFD data for all Priority 1 and 2** Emergency calls	7/1/92 - 12/31/92 (184 days analyzed)	22,027	88.3%*	74%*
6. SJFD data for all Priority 1 and 2** Emergency calls	7/1/93 - 12/31/93 (184 days analyzed)	23,878	87.2%*	72.4%*

*When comparing actual complete data from one year to the next year, the change is not significant. In comparing data of Turnout performance in Category 3 to Category 2, a decrease of 1.2% is noted. Likewise, comparison of data for Travel time performance in Category 3 and Category 2 show an increase of 0.1%. When comparing the second half of 1992 (Category 5) to the same period in 1993 (Category 6), Turnout performance data decreased by 1.1% and Travel time performance decreased by 1.6%.

**Priority 1 and 2 calls are all Emergency life threat calls, such as Fire, Emergency Medical, Rescue, air craft alert, gas investigation, alarm sounding, etc. This data does not include lower priority calls, such as lockouts, service calls, assistance to invalids, etc.