FIRE FACILITY, EQUIPMENT, AND DEPLOYMENT MASTER PLAN

ADDENDUM DOCUMENT

AUGUST 14, 2018

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City of Chula Vista Fire Department
Addendum and Update to Fire Facility, Equipment, and Deployment Master Plan

Introduction

This document will address changes to the Chula Vista Fire Department Fire Facility, Equipment, and Deployment Master Plan (Plan) which was adopted by City Council via resolution 2014-018 on January 28, 2014. It is intended to be used as an addendum to the Plan specific to the Plan's Conclusions and Recommendations found on page 149, and specific to the following modifications to the Plan voted upon by Council in 2014.

Within the resolution to adopt the Plan, Council approved modifications to the Plan and established two new service levels/response standards that included the following:

- Arrival of the first unit on scene to a fire or medical emergency within seven minutes, 90% of the time.
- Arrival of the Effective Response Force, consisting of 14 firefighters on scene within ten minutes, 90% of the time for all structure fires.

Council also adopted a policy for implementation of full time four person staffing for all engine companies consistent with the following language:

- Adopt a policy for implementation of full time four-person staffing for all engine companies as funding is available.

In addition, Council modified the plan specific to Fire Station 9 by adding the following language:

- Fire Station 9 will continue to operate. After all three proposed new stations are constructed and operating an analysis will be completed to determine whether or not operation of this station is still necessary.

Council's modifications to the plan are addressed here in this addendum/update to the Plan which includes four new implementation strategies consistent with Council's direction:

1. Implementation of Squads as a way to improve distribution of resources thereby enabling arrival of the first unit on scene to a fire or medical emergency within seven minutes 90% of the time.

2. Implementation of 4.0 staffing as a way to improve concentration of resources thereby enabling arrival of the Effective Response Force, consisting of 14 firefighters on scene within ten minutes, 90% of the time.

3. Retention and relocation of Fire Station 9 and relocation of Fire Station 5, as a result of analysis for operational necessity.

4. Policy for the retention of fire apparatus and purchase of equipment.

Implementation Strategy 1

- **Squad Implementation (Distribution):** Arrival of the first unit on scene to a fire or medical emergency within seven minutes, 90% of the time.

  In Chula Vista, distribution of resources has proven to be an issue affecting the Fire Department's ability to arrive on scene within 7 minutes 90% of the time. Fire Department on scene arrival is a function of three considerations; concentration, distribution, and resource availability/reliability. Concentration is the ability to assemble multiple units at one emergency within the adopted time to transition from stabilization of the emergency to mitigation of the emergency. Distribution is the geography of emergency resources and the travel time to emergencies to initiate stabilization of the emergency. Resource Availability/Reliability is the degree to which the resources are ready and available to respond.

  The probability of any given unit's availability (or unavailability) is one indicator of the Fire Department's response reliability. Response reliability is defined as the probability that the required number of competently prepared staff and properly equipped apparatus will be available when a fire or emergency call is received. As the number of emergency calls per day increases, the probability that a needed piece of apparatus will be busy when a call is received also increases. Consequently, if the right amount of redundancy is not built into the system to ensure timely and adequate response to emergency calls can be maintained, the Department's response reliability decreases. To measure response reliability, all types of calls for service must be considered. Today, EMS calls have an impact on the availability of Fire Department resources and are considered in the overall evaluation of Department reliability. Response reliability can be determined from historical run data and is typically expressed as a per/company statistic as well as an agency-wide statistic.

  The table below indicates total calls for service by year with the percentage of increase per year.

Table 1: Calls For Service by Year

Calendar Year	Total	% Diff. (+)
2017	21,445	7.8
2016	19,892	4.7
2015	18,998	6.6
2014	17,825	8.8
2013	16,377	
TOTAL		30.9

Fire Department Performance

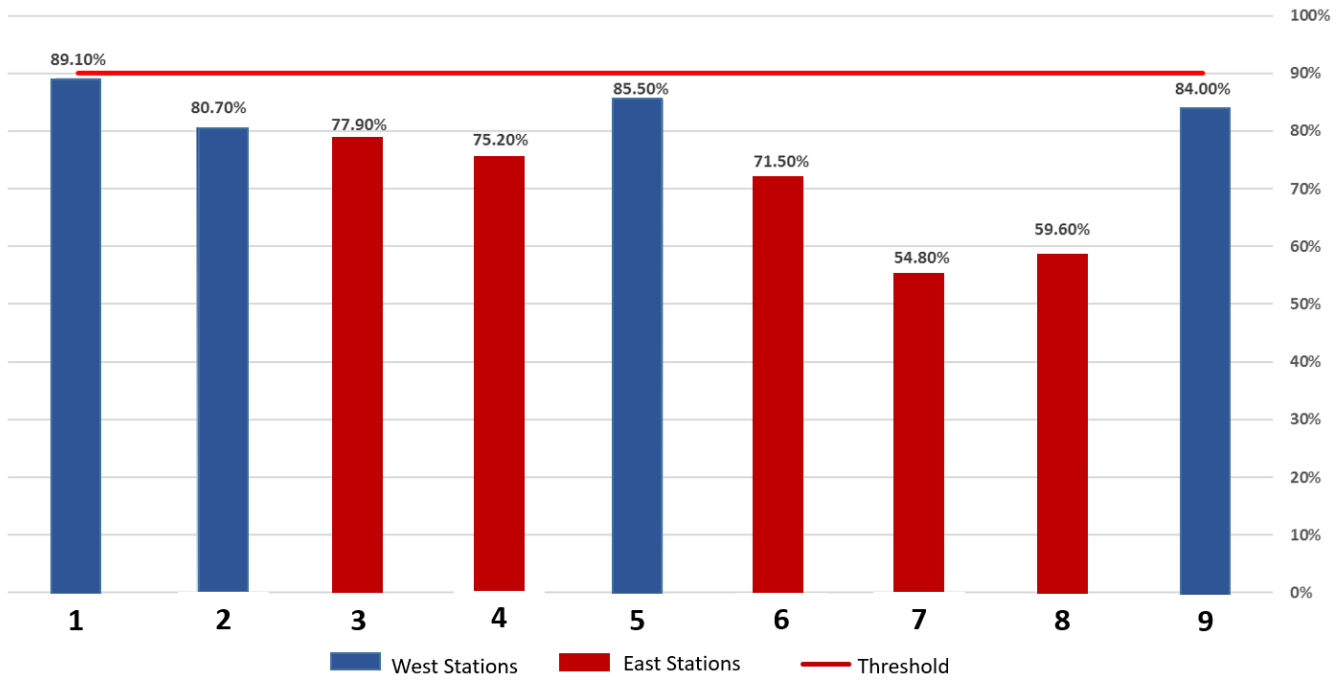
Current Fire Department emergency operational performance does not meet established performance metrics such as:

- EMS: First unit on-scene within 7 minutes 90% of the time; capable of establishing command, providing basic life support patient care, and initiating advanced life support patient care. Actual performance in 2016 for EMS calls was 80.3%.

- Compliance with GMOC response time standard of 7 minutes 80% of the time.

The chart below illustrates the response performance by station for fire and EMS calls in 2016.

Chart 1: Fire & EMS Calls for Service
% met within 7 minutes



It is clear to see that units on the west (stations 1, 2, 5, and 9) are closer to achieving the metric of 90% compared to units on the east (stations 3, 4, 6, 7, and 8). With the help of the chart above and the mapping illustration below, areas of performance deficiency are clearly noted.

The primary performance measure that drives the distribution/location for fire stations is travel time. The distribution of fire stations is a primary factor in the ability to meet response times. As mentioned earlier, distribution is the geography or placement of emergency response resources and their travel time to emergencies to initiate stabilization at the scene. Adequate distribution will allow for acceptable response time travel. Distribution of resources creates challenges on the east side of the City. Station locations are spread out further from one another and do not provide overlap of coverage that is seen on the west side of the City. In addition, the street network in the east does not provide an even spaced grid of street networks as it does in the east. A look at the map below shows fire station response areas indicated by ¾ mile radius circles. These circles are consistent with the Insurance Service Organization (ISO) recommended coverage areas. The network of fire stations (distribution) on the east does not share the same coverage as the distribution of stations on the west. An improvement to the distribution of resources is necessary to meet the 90% response time standard.

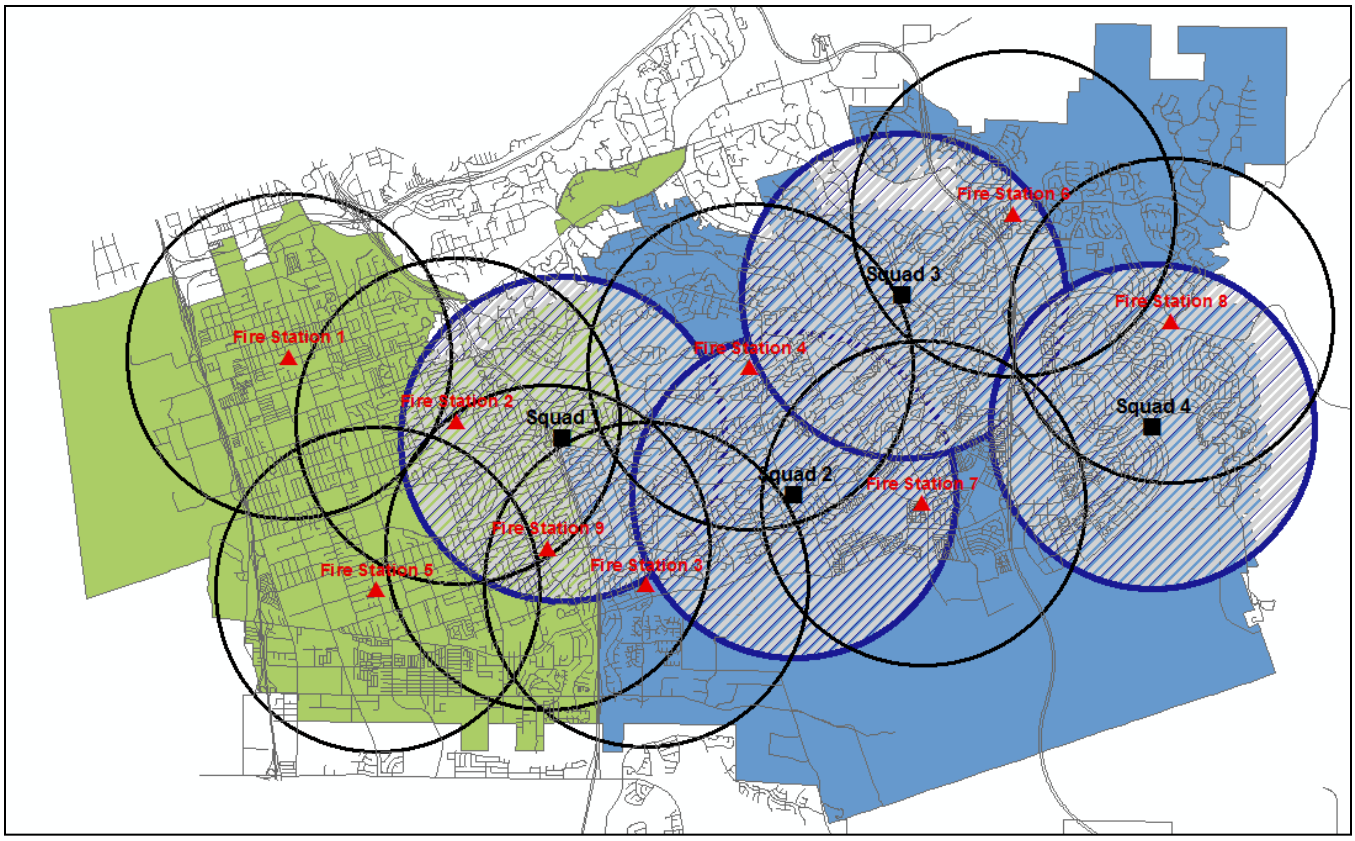
Map 1: Coverage with Current Station Locations

By looking at the map above and in order to achieve the response threshold, it is necessary to identify opportunities to create a greater degree of overlap of the response circles within the distribution network in the east. One way to achieve this is to build more fire stations and staff them with resources. Another way is to follow a re-emerging and growing trend to add less expensive Squads to the distribution of resources. The implementation of Measure A funded Fire/Medic Squads will be executed simultaneously with several other measures most of which do not have a cost or are funded through pass through fees collected through the Department's First Responder Advanced Life Support (FRALS) Program (non-general fund). The Squads will serve areas of the City with high call volume, or areas that are vacated due to another unit going out of district for fuel, mechanical repairs, or training. The Squads will also supplement areas of the City known to have poor response times as indicated by data already collected by the Fire Department.

Fire/Medic Squads will provide additional units to the response network thereby bolstering the distribution of resources. Providing better distribution through implementation of Squads allows for the improvement of availability/reliability discussed earlier. With increased distribution of response units and the improvement to units being available to respond, response times will trend downwards towards the goal of 7 minutes 90% of the time.

Arriving prior to the seven-minute mark is intended to provide basic life support patient care to stabilize the sick and injured. Once the patient is stabilized, advanced life support skills can be initiated prior to the arrival of the transporting ambulance. With the arrival of the first on-scene unit within seven minutes, survivability increases significantly.

Map 2: Coverage with Squads and Stations at Current locations



In addition, several other improvements may be made to the system such as the deployment of AMR transport units without assistance of Fire Department resources to non-emergent calls for service. The current emergency dispatch triage classifications utilized by our communications center, San Diego Emergency Communications and Data Center (ECDC), involve a triaged rating of Level 1 (Emergent) to Level 4 (Non-Emergent). The Chula Vista Fire Department responds only to Level 1, Level 2, Level 3, and Traffic Accident classifications, all in an emergent (lights and siren) mode. Level 3 calls are considered urgent (non-emergent) responses for both first responder and transport units, however the current practice is to send both units to scene emergently as though they were responding to a Level 1 call.

An internal Fire Department analysis revealed that out of the approximately 1,800 Level 3 calls for service, less than .12 percent of these responses involved patients suffering from acute conditions. With just two patients requiring Level 1 care out of 1,800 level 3 calls, a transport only response is appropriate. The elimination of a Chula Vista first responder unit from these calls is consistent with community standards in San Diego County Metro Zone dispatched agencies. The elimination of Level 3 responses by Chula Vista Fire Department resources will serve to improve unit availability/reliability thus assisting with meeting the 7 minutes 90% goal.

There is another improvement that will be made at no cost. Upon arrival of a Squad, the Company Officer, after assessing the patient, may downgrade the call and cancel the responding engine company. Doing so will once again improve the engine company availability/reliability for other calls for service. In addition, time

spent on scene by engine companies will be reduced as a result of Squad implementation and will contribute to their unit availability/reliability.

In the future, the Fire Department is planning on implementing smart technology through the use of smart phones, apps, and the purchase and installation of new fire station alerting systems. The alerting systems are more efficient than current systems and have the capacity to alert firefighters of a call for service sooner than existing technology. Station alerting also talks directly to the smart phone via the app to automatically map the response route thereby eliminating time spent seeking directions prior to responding to the emergency. These improvements are also anticipated to be funded through the FRALS program with no impact to the General Fund. Another technology improvement will include GPS signal preemption technology that will reduce travel time delays caused by traffic stacking at intersections. The implementation of this improvement is currently underway.

The implementation of Squads together with the above-mentioned changes and improvements, provide the best combination of efforts and efficiencies that will enable the Fire Department to achieve its 7-minute response metric 90% of the time.

Implementation Strategy 2

Implementation of 4.0 Staffing (Concentration): On July 7, 2017, Council authorized the addition of the Fire Department's first 4.0 staffed engine – Engine 51 located at Fire Station 1. The table below shows the positive impact 4.0 staffing of Engine 51 has on resource availability.

Table 2: Comparison of 3-0 v. 4-0 Staffing on Engine 51

Incident Type Group	3-0 staff		4-0 staffed		Difference in Average Time at Incident	Approx. Total Time Gained in Availability	Approx. Total Time Gained in Availability per day
	Count	Average Time at Incident	Count	Average Time at Incident			
Fire	82	0:34:09	78	0:31:41	0:02:28	3:12:19	0:00:32
EMS	3,388	0:15:21	3,690	0:13:40	0:01:41	103:44:30	0:17:23
Total	3,470		3,768			106:56:49	0:17:55

3-0 Staffing of E51 from July 7, 2016 - July 6, 2017 (1 year)

4-0 Staffing of E51 from July 7, 2017 - June 30, 2018 (approx 1 year)

As discussed earlier in this report, reliability and availability are two key factors that affect operational performance. Since implementing 4.0 staffing and based on the comparison analysis, Engine 51 has improved system reliability through increasing by more than nearly 107 hours, its availability to receive calls. As a result of improvements to Engine 51's reliability and availability, it could accept emergency calls more often, thereby reducing response times that otherwise would have required a further unit to respond.

The transition to 4.0 staffing on E51 was the first step towards increased staffing of engine companies in the Fire Department. Implementation of 4.0 staffing and other staffing improvements will continue with funding from Measure A, and has been separated into a short term staffing plan and a long term staffing plan. This approach will allow Squad implementation and 4.0 staffing to begin immediately in areas believed to be critical in terms of call volume loads and maximum impact and benefit to the network of resources. Further staffing improvements are discussed below.

Short Term Staffing Plan

Short term staffing costs will share two funding sources; funds generated by Measure A, and general fund dollars. In addition to the 4.0 staffing on Engine 51 previously mentioned above, Measure A will fund the implementation of 4.0 staffing at five additional engine companies: Engine 52 located at 80 East J. Street, Engine 55 currently located at 391 Oxford Street, Engine 57 located at 1640 Santa Venetia, Engine 60 at Millenia, and future Engine 61 at the Bayfront. Also funded by Measure A, is the above-mentioned addition of four new resources on the east side of the City called "Squads". The short term plan will include the implementation of remaining staff (non-4.0 positions) on engines at Millenia and Bayfront fire stations which are general fund costs. Positions identified as Measure A funded, are consistent with Phase 1 of the City Council intended Public Safety Expenditure Plan. The table below demonstrates staffing position count totals.

Table 3: Short Term Staffing Plan

Position	Total	Count	Location	Funding Source
Deputy Chief	1	1	Administration	Measure A
Fire Captain	14	2	Squad 1	Measure A
		2	Squad 2	Measure A
		2	Squad 3	Measure A
		2	Squad 4	Measure A
		3	Millenia Engine	General Fund
		3	Bayfront Engine	General Fund
Fire Engineer	6	3	Millenia Engine	General Fund
		3	Bayfront Engine	General Fund
Firefighter / Paramedic	14	2	Squad 1	Measure A
		2	Squad 2	Measure A
		2	Squad 3	Measure A
		2	Squad 4	Measure A
		3	Millenia Engine	General Fund
		3	Bayfront Engine	General Fund
Firefighter / EMT	18	3	4th Firefighter on E51	Measure A
		3	4th Firefighter on E52	Measure A
		3	4th Firefighter on E55	Measure A
		3	4th Firefighter on E57	Measure A
		3	4th FF at Millenia	Measure A
		3	4th FF at Bayfront	Measure A
Public Education Specialist	1	1	Fire Administration	Measure A
Total positions	**36**			**Measure A**
54	**18**			**General Fund**

Note: In addition to the positions listed above, the intended spending plan allocates resources to support staff reimbursements, vehicles and IT equipment needs.

Long Term Staffing Plan

Should Measure A revenues surpass projected revenues, long term staffing costs will seek to use additional Measure A revenues first, followed by general fund dollars. Long term staffing includes 4.0 staffing at Engine 53 located at 1410 Brandywine, Engine 54 located at 850 Paseo Ranchero, Engine 56 located at 805 San Miguel Road, and Engine 58 located at 1180 Woods Drive. The long term plan will also implement a 4.0 staffed engine (Engine 59) which will complete the full and necessary compliment of one engine located in each fire station district throughout the City. The City currently runs one engine short at Fire Station 3. The addition of a 4.0 staffed truck (Truck 50) at the Bayfront fire station, a 4.0 staffed truck at Fire Station 4 (Truck 54), and a 4.0 staffed engine at the Village 8 fire station is also part of the long term staffing plan and indicated in the current Fire Facility, Equipment and Deployment Master Plan. The Plan, upon opening of the Millenia fire station, relocates Battalion 52 and Truck 57 to the Millenia fire station. However, staff recommends that Battalion 52 remain housed at Fire Station 7. This is a no cost item which will eliminate the need to add square footage to the Millenia fire station.

Table 4: Long Term Staffing Plan

Position	Total	Count	Location
Deputy Chief	1	1	Administration
Fire Captain	12	3	Truck 50
		3	Engine 59
		3	Truck 54
		3	Village 8
Fire Engineer	12	3	Truck 50
		3	Engine 59
		3	Truck 54
		3	Village 8
Firefighter / Paramedic	12	3	Truck 50
		3	Engine 59
		3	Truck 54
		3	Village 8
Firefighter / EMT	24	3	4th Firefighter on E53
		3	4th Firefighter on E54
		3	4th Firefighter on E56
		3	4th Firefighter on E58
		3	Truck 50
		3	Engine 59
		3	Truck 54
		3	Village 8
Fire Inspector/ Investigator II	3	3	Fire Prevention
	64		

Implementation Strategy 3

- **Retention and Relocation of Fire Station 5 and 9 - Discussion**

  The Fire Department has completed an assessment of the operational necessity of Station 9 prior to buildout of fire stations at Millenia, Otay Ranch Village 8, and Bayfront and determined that fire services and response times can be improved with relocation of fire stations 5 and 9.

  Analysis of Station 9 Retention and Operational Necessity

  Staff possesses specialized computer software technology called ADAM (Apparatus Deployment Analysis Module). ADAM is a "what if," predictive modeling tool that uses historic CAD data, GIS map data, and a projection algorithm that projects the impact on response times due to adding units or stations, and relocating apparatus. Optimizer is yet another modeling software used in conjunction with ADAM and utilized by the Fire Department to provide the most effective deployment plan in terms of locations for stations and apparatus.

  Prior to using computer software to assess the service areas of Station 5 and 9, staff reviewed department call volume information for the previous three years (shown below). Each year, Fire station 9 is the third busiest firehouse with 2,299 calls for service attributed to Engine 59 in 2017. Closing Station 9 as contemplated in the 2014 Plan would place a severe negative impact on surrounding fire stations 2, 3, and 5. It should be noted that station 5 (Engine 55) is the second busiest firehouse in the City with 4,544 calls for service. Engine 55 has reached its response capacity and would be the most impacted in terms of additional call volume. As a result of closing Station 9, other units would absorb the call volume causing an impact to the network of response units. Unit reliability and availability would be affected and would cause units to respond into districts other than their own, leaving larger areas of the City uncovered.

Table 5: Call Volume Comparison

2017

Fire Company			
Unit	# of Calls	Monthly Ave	Daily Ave.
CHF1	1	0.08	0.00
DEP1	4	0.33	0.01
FM1		0.00	0.00
B51	589	49.08	1.61
B52	287	23.92	0.79
BR56	43	3.58	0.12
E51	5,281	440.08	14.47
E52	1,833	152.75	5.02
USAR53	1,843	153.58	5.05
E54	1,519	126.58	4.16
E55	4,544	378.67	12.45
E56	1,198	99.83	3.28
E57	1,614	134.50	4.42
E58	1,287	107.25	3.53
E59	**2,299**	**191.58**	**6.30**
EMS1	6	0.50	0.02
T51	1,862	155.17	5.10
T57	467	38.92	1.28
TOTAL	*24,677*	2056.42	67.61

2016

Fire Company			
Unit	# of Calls	Monthly Ave	Daily Ave.
CHF1	1	0.08	0.00
DEP1	13	1.08	0.04
FM1	0	0.00	0.00
B51	718	59.83	1.97
B52	307	25.58	0.84
BR56	25	2.08	0.07
E51	4,838	403.17	13.25
E52	1,811	150.92	4.96
USAR53	1,639	136.58	4.49
E54	1,493	124.42	4.09
E55	4,220	351.67	11.56
E56	947	78.92	2.59
E57	1,512	126.00	4.14
E58	1,090	90.83	2.99
E59	**2,238**	**186.50**	**6.13**
EMS1	21	1.75	0.06
T51	1,787	148.92	4.90
T57	393	32.75	1.08
TOTAL	*23,053*	*1921.08*	*63.16*

2015

Fire Company			
Unit	# of Calls	Monthly Ave	Daily Ave.
CHF1	1	0.08	0.00
DEP1	4	0.33	0.01
FM1	2	0.17	0.01
B51	640	53.33	1.75
B52	302	25.17	0.83
BR56	22	1.83	0.06
E51	4,676	389.67	12.81
E52	1,782	148.50	4.88
USAR53	1,594	132.83	4.37
E54	1,524	127.00	4.18
E55	3,983	331.92	10.91
E56	931	77.58	2.55
E57	1,468	122.33	4.02
E58	1,121	93.42	3.07
E59	**1,961**	**163.42**	**5.37**
EMS1	50	4.17	0.14
T51	1,625	135.42	4.45
T57	436	36.33	1.19
TOTAL	*22,122*	*1843.50*	*60.61*

The call volume comparison chart above illustrates the call volume at Fire Station 9. The software analysis recommends moving station 9 west - closer to station 5. This software recommendation is consistent with the large call volume numbers seen at station 5 where response capacity has been reached.

The table below shows the impacts to the response network if Station 9 were closed. The table uses current response unit locations and current call volume; and total projected response units with projected call volume at buildout, when the 12 fire station network is completed. For purpose of defining buildout, buildout includes 12 engines, Milenia fire station, Bayfront fire station, Village 8 fire station, 4.0 staffing on all engines, 4 squads, 4 trucks, one US&R, and two Battalions.

Table 6: Current and Buildout Performance compared to Threshold

	Emergency Medical Service (EMS)		Initial Attack Force (IAF)		Effective Response Force (ERF)		% Diff without St 9
	Threshold: 7:00 @ 90%		Threshold: 7:00 @ 90%		Threshold: 10:00 @ 90%		
	% Met	% Diff	% Met	% Diff	% Met	% Diff	
Current							
With Station 9	80.14		52.85		38.01		
Without Station 9	77.53	2.61	46.57	6.28	31.59	6.42	15.31
Build Out *							
With Station 9	89.53		89.47		82.16		
Without Station 9	87.03	2.5	88.19	1.28	68.57	13.59	17.37

*** Build Out Station 9: 4-0 Staffed Engine 59 and USAR 59**

**** Mutual Aid and AMR not included in calculations**

Current - 8 Engines, 2 Trucks, 1 US&R, 2 Battalions

Build Out – 12 engines, 4 Trucks, 4 squads, 1 US&R, 2 Battalions, 3 New Stations (BayFront, Village 8 & Millenia), and relocated Stations 5 and 9.

Using the ADAM and Optimizer technology, and based on established fire department metrics set at 90% compliance; response thresholds are closest to being achieved in all three metrics when Fire Station 9 remains as a permanent resource. The permanent closure of the station at buildout, negatively affects the department's ability to achieve compliance. Most notable is the ERF at 68.57% compliance versus 82.16% compliance when the station remains open.

Staff has analyzed data and determined that Fire Station 9 is an integral part of the network of resources and should remain as a necessary permanent facility.

Analysis of Station 9 Relocation

Staff utilized existing and forecasted data to analyze the best location for Station 9 and what impact it will have on the network of fire stations. Staff also analyzed locations for the placement of new and relocated fire stations.

Pinpointing the optimum locations for stations 5, 9, and Bayfront has a push and pull effect. For example, re-locating station 5 and leaving station 9 in its current location (and vice versa) does not yield the best effect for the network of stations in the west. The computer software provides an analysis of the optimum location where each station is best suited as a network. In other words, the best location for station 5, 9, or the Bayfront station, is based on the impact to the network and *not* solely on any particular district where a station physically resides. Likewise, the results shown in tables 8 and 9, rely on the placement of relocated or future fire stations as well as the addition of 4.0 staffing. It is important to note that while individual district response times are important, the response time thresholds reported on an annual basis, are founded on the entire fire station network average.

Table 7 illustrates citywide network performance prior to implementation of 4.0 staffing on July 7, 2017 (Baseline). The table compares baseline performance to current performance which includes 4.0 staffing at stations 1, 2, 5, and 7. Adding 4.0 staffing provides an increase of 15.68% for Initial Attack Force (IAF). There is also an 8.29% improvement to ERF.

Table 7: Baseline to Current (4 units 4-0 staffed)

CVFD Measures	**Baseline Performance***		**Current Performance****		**% Change From Baseline to Current**
	Incident Average	Incident Percent	Incident Average	Incident Percent	
ALS – 1st unit in 7 mins, 90%	5:45	80.14%	5:45	80.14%	No change
IAF - 1st unit (E, 4FF) in 7 mins, 90%	7:22	52.85%	6:38	68.53%	15.68%
ERF – 14 FF in 10:20, 90%	10:26	38.01%	10:15	46.30%	8.29%

*Baseline is the original network (prior to July 7, 2017) did not include 4-0 staffing

**Includes 4-0 staffing at Stations 1, 2, 5 and 7. Station 5 at 391 Oxford; Station 9 at 266 E. Oneida.

Table 8 shows improvements from current performance after station 5 is relocated to Fourth Avenue and Orange Avenue and station 9 is relocated to Hilltop and Naples. The table also includes improvements from the baseline performance.

Table 8: Relocated Station 5 & 9

CVFD Measures	Relocated St. 5 & 9 Incident Average	Relocated St. 5 & 9 Incident Percent	% Change From Current to Relocated 5 & 9	% Change From Baseline Performance
ALS – 1st unit in 7 mins, 90%	5:46	80.24%	0.10%	0.10%
IAF - 1st unit (E, 4FF) in 7 mins, 90%	6:34	70.10%	1.57%	17.25%
ERF – 14 FF in 10:20, 90%	10:16	46.05%	-0.25%	8.04%

*Includes 4-0 staffing at Stations 1, 2, 5 and 7.

Table 9 illustrates the positive effects of adding the Bayfront station (Bay Boulevard and J Street). The table also shows improvements from the baseline performance.

Table 9: Adding Bayfront (BF) Station

CVFD Measures	Bayfront Station Added Incident Average	Bayfront Station Added Incident Percent	% Change From relocated 5 & 9 to adding BF Station	% Change From Baseline Performance
ALS – 1st unit in 7 mins, 90%	5:36	83.95%	3.71%	3.81%
IAF - 1st unit (E, 4FF) in 7 mins, 90%	6:26	70.65%	0.55%	17.80%
ERF – 14 FF in 10:20, 90%	10:12	50.32%	4.27%	12.31%

Source: Deccan 2016 Deployment, Mutual Aid not included

When compared to the established baseline, there is a 17.8% improvement in IAF and a 12.31% improvement in ERF.

After researching alternate locations for both fire station 5 and 9, data shows an improved response capability when the Bayfront station is located near J Street and Bay Boulevard, fire station 5 is located at Fourth Avenue and Orange Avenue, and fire station 9 is located near the intersection of Moss Street and Naples Street. This ideal location for station 9 improves response times overall. This combination gives the best performance improvement to the network of fire stations when 4.0 staffing is added.

It is the recommendation of the Fire Department to leverage the opportunity and not only rebuild the station but re-locate it to better serve the community, and to make improvements to response metrics.

The map below, illustrates the Plan's final resource distribution when buildout of development occurs.

Map 3: Coverage at Buildout

Implementation Strategy 4

- **Policy and plan for the purchased and retention of fire apparatus and equipment**

  The Fire Department responds to Fire, Rescue and Emergency Medical incidents both within the City and surrounding cities. In addition, the Fire Department provides mutual aid assistance throughout the State of California on a reimbursable basis. These emergency services are provided with the following frontline fire apparatus – eight (8) triple combination pumper engines, two (2) aerial ladder trucks, one (1) heavy rescue (urban search and rescue) unit, one (1) brush engine and two (2) command vehicles. The reserve fire apparatus currently consists of the following – five (5) reserve triple combination pumper engines, one (1) reserve aerial ladder truck and two (2) reserve command vehicles.

  Due to several factors including decreased vehicle replacement funding, excessive years of service, escalating maintenance costs, increased downtime of frontline apparatus, decreased fleet depth, decreased reliability and safety issues; the Fire Department and Public Works – Fleet Management Division have been significantly challenged with maintaining an adequate fire apparatus fleet (frontline and reserve).

  In recent years, the Fire Department and Public Works – Fleet Management Division have seen drastic increases in overall mechanical repair expenses with routine repairs as well as major system repairs. These unpredictable increases in expenses have caused budgetary problems for the Public Works – Fleet Management Division. In addition, fire apparatus "out of service" times, lack of reliability and safety concerns all increased to a point that the Fire Department was negatively affected with emergency fire and medical service response capabilities.

  National Fire Protection Association (NFPA) Standard 1901 on Automotive Fire Apparatus and other National Fleet Maintenance Organizations recommend large vehicle replacements based on several criteria to include, years of service, mileage, maintenance costs, functional obsolescence, and inability to obtain repair parts as well as technology and safety improvements. After extensive research of National industry standard recommendations and standards adopted by other Fire Departments, the Fire Department and Public Works – Fleet Management Division recommend the adoption of a revised Apparatus and Equipment Replacement Policy (below) to supersede the original policy adopted by Council on February 2, 1985 as resolution #11924.

  The revised Apparatus & Equipment Replacement policy includes a range for years of frontline and reserve service for specific fire apparatus, command vehicles and equipment. This range is designed into the policy to enable the Fire Department and Public Works – Fleet Management Division to work collaboratively to assess each replacement to determine the most appropriate replacement year within the range.

  As part of the overall assessment of when to make the replacement within the range, the Fire Department and Public Works – Fleet Management Division will assess several factors to include:

  - Age
  - Mileage
  - Engine Hours
  - Pump Hours
  - Out of Service Hours
  - Maintenance Costs
  - Obsolescence

Timeline Goals for Replacement of Apparatus

A. It will be the goal to replace all fire apparatus (triple combination pumper engines, aerial ladder trucks, heavy rescue units (urban search and rescue), and type III brush engines at:
    a. 17 years of total service
        i. 10 to 12 years in frontline service
        ii. 5 to 7 years in reserve service

B. All command vehicles at:
    a. 10 to 12 years of total service
        i. 7 years in frontline service
        ii. 3 to 5 years in reserve service

C. All Staff vehicles at:
    a. 10 years of service and/or 100,000 miles

In addition, it will be the goal of the Fire Department to replace other critical equipment at specific intervals per NFPA recommendations, manufacturer recommendations, or Cal-Osha regulations due to improvements in functionality, technology and safety as well as overall wear and tear of the equipment.

A. 2 ½" and 1 ¾" Fire Hose
    a. 10 years of service
B. 4" Fire Hose
    a. 17 years of service

C. Self-Contained Breathing Apparatus (SCBA) and Rescue Air equipment
    a. 10 to 12 years of service

D. Mobile and Portable Radio (800 Mhz and VHF)
    a. 10 to 12 years of service

E. Thermal Imaging Cameras (TICs)
    a. 10 to 12 years of service

F. Rescue rope and rope hardware
    a. 10 years

G. Mobile Data Computers (MDCs)
    a. 5 to 7 years of service

H. Combustible Gas Monitors
    a. 5 to 7 years of service

With the use of Measure "P" funds, the Fire Department and Public Works – Fleet Management Division have implemented a specific Measure "P" – Apparatus and Equipment Spending Plan. This plan has begun to correct the issues associated with the aging apparatus fleet and equipment. The plan includes the escalations of some apparatus, command vehicle and equipment purchases on altered time intervals.

These adjusted purchase intervals are required to eventually create sustainable and consistent replacement cycles for the entire fleet of apparatus and equipment.