RIVERSIDE COUNTY FIRE DEPARTMENT
FY 17-18 SERVICE ALTERNATIVES

MARCH 7, 2017

JOHN R. HAWKINS, FIRE CHIEF

CAL FIRE/RIVERSIDE COUNTY FIRE DEPARTMENT

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EXECUTIVE SUMMARY

This service alternatives requested by the Riverside County Executive Office provides basic fire department information, budget challenging information, a fire station staffing alternate model and information to develop cost recovery for the response to Emergency Medical Service (EMS) and traffic collision incidents.

The Riverside County Fire Department is an integrated, cooperative, regional fire protection system that provides fire, EMS, technical rescue and hazardous materials response to approximately 1.6 million residents in the unincorporated area, in 21 partner fire cities and one community services district. All hazards emergency response services are provided from 92 fire stations utilizing about 1,050 firefighters (CAL FIRE), 250 administrative and support personnel and about 150 reserve volunteer firefighters. CAL FIRE is responsible to protect the State Responsibility Area (SRA) or watershed as part of the cooperative agreement and Public Resources Code 4125-4127.

The report makes three recommendations (1) for an alternate staffing model (2) for closing the FY 17-18 budget gap and (3) for an implementation of EMS Cost Recovery.

BACKGROUND

Budget Challenge

CAL FIRE Labor Increase. For several years, the State of California has been working with CAL FIRE and with CAL FIRE Local 2881 Firefighters negotiating a new labor agreement. This agreement covers a 4 ½ year span. It provides Local 2881 Firefighters an increase above minimum wage and provides incremental increases of between 14% and 18% over the 4 ½ year period based on position classifications. The agreement still must be approved by the State Legislature and ratified by the Local 2881 members.

The Fire Department estimates the new labor agreement will result in the following increases:

Unincorporated Area	FY16-17	$2.5 million
Partner Cities	FY16-17	$2.8 million
Unincorporated Area	FY17-18	$11.9 million
Partner Cities	FY17-18	$12.4 million

Because we are still determining the future year cost impacts, we don't have estimates now for subsequent years but we know increases are included with the new labor agreement.

State Administrative Charge

The State Administrative Charge is being reviewed by the Executive Office and will be negotiated and separately reported of this document.

Fire Engine Staffing

General. Fire Department Staffing is critically important to accomplishing all the work expected of fire responders. This includes early suppression of fires before a fire takes hold of a building and entraps residents, to handling medical emergencies, to removing victims from entangled locations and to controlling hazardous material discharges. Staffing is expensive but what the public really pays for is firefighter availability for immediate, emergency response.

Riverside County Fire Standard. The Riverside County Fire Department staffing standard is a 3-person, municipally staffed, paramedic Type 1 engine company. This standard was enacted by the Board of Supervisors on January 24, 2012 (Policy Item 3.5, Attached as Appendix A). The Fire Department has worked since the enactment to adapt the policy at all fire stations dependent on available funding. Currently, all County Fire Department stations have 3-person staffing with one person being a paramedic. Policy Item 3.5 also requires that the staffing configuration include one Fire Captain, one Fire Apparatus Engineer and one Firefighter II, again, with one person being a paramedic. Today, 24 of the 36 unincorporated area fire stations are municipally staffed.

National Staffing Requirements and Recommendations. Aside from direction created by the Board, no national requirements exist mandating fire department staffing.

One regulatory requirement of fire departments is to comply with what is called the '2 In – 2 Out' requirement (Attached as Appendix B). Formally, it is called 29CFR1910.134(g)(4)(i)[1]. The requirement mandates that firefighters never go into a dangerous situation (Immediately Dangerous to Life and Health – IDLH) in a fire or rescue incident alone, and that there be two firefighters outside the hazard area to initiate a rescue of the firefighters inside, should they become in trouble, during the initial stages of the incident where only one crew is operating in the hazard area. If a rescue is suspected or known, firefighters can make or attempt the rescue without complying with this requirement. Many fire departments require 4-personnel staffing to always comply with the requirement. Within Riverside County, consistent with a reasonable fiscal approach, Riverside County has maintained reasonable staffing utilizing the 3-person staffing level.

National Fire Protection Association (NFPA) provides a recommended national standard for staffing. The following describes Standard 1710 (Attached as Appendix C):

> *This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all career fire departments. 1.1.1 The requirements address functions and objectives of fire department emergency service delivery, response capabilities, and resources. 1.1.2 This standard also contains general requirements for managing resources and systems, such as health and safety, incident management, training, communications, and pre-incident planning. 1.1.3 This standard addresses the strategic and system issues involving the organization, operation, and deployment of a fire department and does not address tactical operations at a specific emergency incident.*

NFPA 1710 recommends 4-persons responding on every engine and for 14 firefighters to respond to a single-family dwelling fire, 27 members responding to an apartment complex and 42 members to a high-rise fire.

Riverside County local fire agencies are typically staffed with either 4 or 3 personnel with most having one of the assignees functioning as a dual-purpose firefighter/paramedic. Within the County, the Cathedral City Fire Department utilizes 2-person engine companies but has an immediate intention to increase to 3-person engine companies. Appendix D shows adopted staffing levels for local and regional fire departments.

Because of the increasing cost for firefighter staffing levels, some fire departments are exploring alternative staffing levels including requiring fewer firefighters on smaller, fast response units. In most cases, smaller, fast response units are either housed with an existing engine company or are assigned to patrol within high emergency incidence areas where they can be deployed to medical emergencies or small fires. Seldom do municipal fire departments staff 2-person standalone units.

Service Impacts. The alternate station staffing model of a medic patrol will be a reduction of service in the areas where it will be deployed and to the system overall. The removal of one firefighter position from the station staffing model will reduce that company's performance by 33%. A one-third reduction in staff will eliminate or drastically slow the completion of numerous tactical options on every type of emergency. The subsequent paragraphs will provide four examples.

A 3-person paramedic engine company can initiate advanced life support care to critically ill and injured residents much more rapidly than a 2-person company. The 3-person company can perform the following three tasks simultaneously; patient assessment, vital signs, and EKG/oxygen therapy. The three tasks are performed on all critically ill and injured patients and set the foundation for further treatment. The removal of one of the non-paramedic responders slows this process considerably causing a delay in the initiation of advanced life support when seconds could determine life or death.

The shortfall of a 2-person company is also seen in the treatment of the cardiac arrest patient. A patient in full arrest is not breathing and their heart is not beating. The performance of basic life support requires the dedication of two rescuers to perform effective CPR. While one rescuer performs chest compressions the other is dedicated to breathing for the patient (aka; airway management). Clearly there are not sufficient rescuers to initiate advanced life support as well. Ideally chest compressions, airway management, and advanced life support care are performed simultaneously. In fact, the American Heart Association recommends that a total of eight rescuers be sent to the scene of a cardiac arrest patient with CPR and advanced life support performed simultaneously in a specific manner like a NASCAR pit crew. The pit crew concept has been employed in the cities of Palm Desert, Rancho Mirage and Indian Wells for the last two years with outstanding results. The rate of return of spontaneous circulation in a full cardiac arrest patient in the three cities during 2016 was 46%. Prior to the implementation of Pit Crew CPR, the rate of return of spontaneous circulation was 14% in the full cardiac arrest patient.

Due to the staffing level of one company officer and one paramedic firefighter, the medic patrol will not be able to engage in an aggressive interior fire attack upon its arrival at a working structure fire. It is not safe or effective for a single firefighter to engage in interior fire attack even if the conditions were present for the use of the rescue exemption to the previously mentioned 2-in-2 Out Rule. A single firefighter would not be able to quickly enter a burning building and efficiently move a 1 ¾ inch hose line which weighs 120 pounds per 100 feet. Additionally, a single firefighter will struggle or be incapable of removing an unconscious 200 lbs. person over a carpeted floor. Furthermore, a working structure fire requires a significant amount of coordination. The situation will require the company officer to remain outside of the burning structure to command the incident and organize the remainder of the responding companies.

On a wildland fire a 3-person Type I engine company has the capacity of deploying 600 feet of wildland hose in 10 minutes. The work load on a 3-person company is as follows; the pump operator needs to stay at the engine to operate the pump, the two firefighters will pull a 200-foot pre-connected hose line and each firefighter will carry a hose pack containing 200 feet of hose. The 2-person medic patrol has the capacity to deploy 400 feet in 10 minutes. The work load on a 2-person company is as follows; the pump operator needs to stay at the engine to operate the pump, the remaining one firefighter will pull a 200-foot pre-connected hose line and carry a hose pack containing 200 feet of hose.

The elimination of a 3-person paramedic Type I engine company will result in a reduction of service in the area where it is removed. The overall system will see a reduction in its capability and resiliency with the

elimination of any Type 1 paramedic engine company. The overall negative impact to the County's fire protection system will increase with each station that is converted to the alternate station staffing model.

FY 17-18 RECOMMENDATIONS

Alternative Staffing Model Recommendation

Because of funding difficulties necessary to retain 3-person engine companies, the Fire Department must recommend an alternate station staffing model. This recommendation is clearly driven by and understood by the Fire Department as fiscally driven. The model will be based on our four Board Approved Land Use Classifications: Heavy Urban, Urban, Rural and Outlying. Explanations of the Land Use Classification with staffing standards follow.

LAND USE CLASSIFICATION INFORMATION

LAND CLASSIFICATION	POPULATION DENSITY	FIRE STAFFING CHARACTERISTICS	RESPONSE TIME	CONTAINMENT GOAL
HEAVY URBAN	>700 per square mile	Land use includes large commercial and industrial complexes, large business parks, high rise and wide rise community centers and high density residential dwelling units of 10 to 20 units per acre.	5:00 or less, 90% of the time	To contain all unwanted fires to the area of origin and prior to flash over. Initiate search and rescue of trapped, survivable occupants. Moderate to high chance of survivability and access to victims from firefighter rescue. Minimize damage to public, building, adjacent exposures, critical infrastructure, environment, rapidly achieve adequate water supplies and ventilation. EMS: Rapidly Initiate BLS/ALS care effectively and efficiently for time-to task EMS interventions and prior to irreversible brain death; limit workplace injury through sufficient staffing to assess, treat and remove the injured/ill.
URBAN	> 500 per square mile	Land use includes large commercial and industrial complexes, large business parks, high rise and wide rise community centers and high density residential dwelling units of 8 to 20 units per acre.	6:30 or less, 90% of the time	To contain all unwanted fires to the area of origin and prior to flash over. Initiate search and rescue of trapped, survivable occupants. Moderate to high chance of survivability and access to victims from firefighter rescue. Minimize damage to public, building, adjacent exposures, critical infrastructure, environment, rapidly achieve adequate water supplies and ventilation. EMS: Rapidly Initiate BLS/ALS care effectively and efficiently for time-to task EMS interventions and prior to irreversible brain death; limit workplace injury through sufficient staffing to assess, treat and remove the injured/ill.
RURAL	100 to 500 per square mile	Light industrial zones, small community centers and residential dwelling unit density of 2 to 8 units per acre.	10:30 or less, 90% of the time	Difficulty containing all unwanted fires to the general area of origin. Neighboring rooms and overhead attic area can expect to receive damage. Victim rescue from responding firefighters less likely. Unable to assemble first alarm assignment within expected time frames, public

				will be affected by critical injury, serious to major damages to building, critical infrastructure and environment. Damage anticipated to adjacent exposures, EMS: May have delay in assembling sufficient staffing to efficiently and effectively initiate BLS/ALS care and rapidly accomplish time-to-task EMS interventions, may not be capable of initiating resuscitative measures prior to irreversible brain damage; may experience increases of firefighter injuries while assessing, treating and removing the injured or ill
OUTLYING	< 100 per square mile	Areas of rural mountain and desert, agricultural uses, small scale commercial, industrial and manufacturing, service commercial, medium industrial and low density residential dwelling units; 1 dwelling unit per acre to 1 dwelling unit per 5 acres.	17:30 or less, 90% of the time	To contain all unwanted fires to the building of origin. Rapid, uncontrolled spread of fires throughout building is highly likely. Victim survivability not likely. Search and Rescue efforts are not anticipated to be successful. Difficulty achieving adequate water supplies for building of origin and exposures. Adjacent exposures will suffer damage, buildings, critical infrastructure and environmental damages will likely suffer extreme damages or be destroyed. EMS: May have delay in assembling sufficient staffing to efficiently and effectively initiate BLS/ALS care and rapidly accomplish time-to-task EMS interventions, will not be capable of initiating resuscitative measures prior to irreversible brain damage; may experience increases of firefighter injuries while assessing, treating and removing the injured or ill.

These units will carry a small amount of water (about 250 gallons), have a small pump, paramedic EMS equipment and minimal hand tools. They would not carry a large amount of fire hose, no ladders or other larger fire engine type equipment. The 2-person, Medic Patrol will be able to provide paramedic service and light, first-in, fire suppression action. The Medic Patrol would be staffed by a company officer (Fire Captain or Fire Apparatus Engineer) and a Firefighter II/Paramedic.

We recommend the Board consider allowing the implementation of 2-person, paramedic patrol units.

Medic Patrol Staffing Standard, Heavy Urban Land Use Classification

- Not allowed in this Land Use Classification

Medic Patrol Staffing Standard, Urban Land Use Classification

- Not allowed in this Land Use Classification

Medic Patrol Staffing Standard, Rural Land Use Classification

- Maximum annual calls at Medic Patrol Station: 2190 emergencies (average 6 per day) *****
- Reliability: Must be 3 additional staffed Type 1 fire engines within 10 minutes of the Medic Patrol station
- Jurisdiction: Next in Type 1 fire engine must be from the same jurisdiction as the Medic Patrol otherwise the requesting partner fire entity will be required to pay the adjacent jurisdiction for fire response

Medic Patrol Staffing Standard, Outlying Land Use Classification

- Maximum annual calls at Medic Patrol Station: 730 emergencies (average 2 per day) *****
- Reliability: Must be 2 additional staffed Type 1 fire engines within 15 minutes of the Medic Patrol station
- Jurisdiction: Next in Type 1 fire engine must be from the same jurisdiction as the Medic Patrol otherwise the requesting partner fire entity will be required to pay the adjacent jurisdiction for fire response

***** Once the emergency incident call load threshold is met, the station must upgrade to a 3-person, paramedic, Type 1 engine.

The Riverside County Fire Chief will make the final determination and recommendation for fire apparatus deployment considering these minimum fire engine and medic patrol staffing recommendations along with all other fire protection, EMS, rescue and hazardous materials response needs.

Funding Fire Department Budget Shortfall

With the CAL FIRE labor increase and other revenues not generating sufficient funding as expected, reductions in cost through eliminations of services are dictated for FY 17-18. The service reductions are best illustrated by the following table which provides guidance for elected officials to utilize in deciding what services should be eliminated.

Action	General Action	Estimate Unit Value	Units Eliminated	STATE FTE PY	County FTE PY	Estimated Savings Extension
Implement EMS Cost Recovery	EMS Cost Recovery	$ 3,600,000	1	0		$ 3,600,000
Eliminate	Fire Station Staffing Reduction & Change to 2-Pers Medic Patrol, E51 to MP51, E53 to MP53, E34 to MP34, E96 to MP96	$ 600,000	4	12		$ 2,400,000
Eliminate	Fire Station 63, Poppet Flats	$ 1,800,000	1	8		$ 1,800,000
Revise Assignment & Eliminate Eng	Move MedSqd 40 to FS 41 & Eliminate Engine 41	$ 1,800,000	1	8		$1,800,000
Eliminate	Hazardous Materials Response Team (HMRT)	$ 1,500,000	1	8		$1,500,000
Eliminate	Battalion Chiefs (Vacant Positions)	$ 220,000	1	1		$ 220,000
Consolidate	Eliminate FS 43, Move 5 FTE to FS 45 & Create MedSqd 45	$ 600,000	1	3		$ 600,000
Eliminate	Deputy Chief (Elimination dependent on vacancy)	$ 125,000	1	1		$ 125,000
Eliminate	Division Chief (Elimination dependent on vacancy)	$ 125,000	1	1		$ 125,000
			TOTAL PY/FTE	42	0	

EMS & Traffic Collision Cost Recovery

The primary objective of the Riverside County Fire Department is to prevent and suppress unwanted fires. The structural fire tax is authorized to fund this objective. However, the Board of Supervisors and the public expects Fire Department response to medical emergencies as well. As such, the Riverside County Fire Department recommends the development of a cost recovery program for medical emergency responses which has the potential to recover $3.6 million per year.

Fire departments first began responding to medical emergencies in the mid-1970s. The strategic placement of fire stations throughout local communities made fire departments the preferred agencies to immediately arrive on scene and render pre-hospital medical services to seriously ill or injured persons. Over time, communities across the nation saw a decrease in mortality and morbidity using a response model that deployed both a fire engine and a paramedic ambulance. Initially the demand for medical emergency response was low and easily absorbed in the operating budgets of most fire departments. However, since the mid-1970's, the number of responses for medical emergencies has grown significantly and the cost of providing this service has grown significantly as well.

Beginning in the Coves Communities and then the City of Temecula, the Riverside County Fire Department began providing advanced life support (ALS) services which, for good reason of firefighter immediate availability, later extended throughout the County. The currently adopted Riverside County EMS Strategic Plan makes fire departments the first responder for ALS and the exclusive operating area ambulance services responsible for patient transport. Additionally, utilizing 'Pit Crew CPR', Riverside County Fire (ALS) responders have shown a significant improvement with heart attack patients. The Pit Crew CPR method, much like NASCAR Pit Crew efforts, maximizes division of labor at CPR emergency incidents. As a result, in the Coves Communities, the return to spontaneous circulation (heart beat) has increased from 14% to 46%.

Since 2008, jurisdictions throughout California have sought to offset the cost of providing medical emergency response through cost recovery. Most private insurance companies do reimburse for fire department response to medical emergencies however Medicare and Medical do not provide such reimbursement. As such, jurisdictions that seek cost recovery for medical emergency response only recoup around 35% of their costs.

In 2016, the Riverside County Fire Department responded to 33,828 medical emergencies in the unincorporated county area. Three-person paramedic engine companies responded to the clear majority of these medical emergencies. Cost-wise, the Board approved hourly rate for a 3-person paramedic engine company at $390 per hour.

Estimated Cost Recovery Calculation:

33,828 medical emergency responses X $390 X 35% = $4,617,522 for 2016 EMS incidents

The Riverside County Fire Department recommends contracting with a private company for the billing of this program. Private companies generally charge 20% of the revenue collected. Therefore, in 2016 the cost of contracting with a private company would amount to $923,504. As such, the net possible revenue would be $3.6 million in 2016.

If EMS Cost Recovery is considered, two options exist for recovering costs. One option is to hire additional staff to do the cost recovery. The preferred option is to utilize existing cost recovery firms who typically charge 17% to 20% as earlier mentioned.

With direction of the Board, the Riverside County Fire Department will develop an ordinance, set reimbursement levels, and determine when costs will be waived.

RECOMMENDATIONS

Read and file this service alternatives report and consider providing direction to proceed because 120-day notice prior to July 1, 2017 must be given to CAL FIRE for personnel reductions and displacements.

APPENDIX A

RIVERSIDE COUNTY

BOARD OF SUPERVISORS

POLICY ITEM 3.5, JANUARY 24, 2012

FIRE DEPARTMENT 3 PERSON STAFFING STANDARD

SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FROM: Supervisor Jeff Stone **SUBMITTAL DATE:** January 17, 2012

SUBJECT: Firefighter Installation on Riverside County Engines (FIRE) Policy

RECOMMENDED MOTION:

That the Board embrace the Fire Policy, that ensures that all Riverside County Engine Companies have as a minimum, a 3 person team consisting of:

1. **Fire Captain;**
2. **Fire Apparatus Engineer;**
3. **Firefighter;**

and wherever possible, included within one of these 3 descriptions, should be a firefighter that is an EMT or Paramedic, as well.

BACKGROUND:

Riverside County has always made public safety a top priority, even in these challenging economic times. We all have learned to do more with less, but cannot compromise on a minimum level of fire services that without, not only jeopardizes the health and safety of our constituents, but also, can jeopardize the safety of our valiant firefighters. In order to have a consistent level of expertise when responding to a medical or fire emergency, the County should have as a minimum staffing the formula referenced above.

Jeff Stone
Supervisor
Third District

JS:vc

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Stone, seconded by Supervisor Tavaglione and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes:	Tavaglione, Stone and Ashley
Nays:	Buster and Benoit
Absent:	None
Date:	January 24, 2012
xc:	Supvr. Stone, Fire

Kecia Harper-Ihem
Clerk of the Board
By: _____
Deputy

3.5

APPENDIX B

29CFR1910.134(g)(4)(i)[1].

‘2 IN – 2 OUT’ REGULATION

• **Standard Number:** 1910.134(g)(4); 1975.3(d)

April 29, 1998

J. Curtis Varone, Esq.
55 Azalea Avenue
Exeter, RI. 02822

Dear Mr. Varone:

This is in response to your letter dated January 16, to Mr. Kipp Hartmann, Area Director of the Occupational Safety and Health Administration's (OSHA) Providence Rhode Island, Area Office. The subject of your letter is section (g)(4) of OSHA's Respiratory Protection Standard, 29 CFR 1910.134, which has been recently revised and published in the Federal Register. You have asked OSHA to provide Information on cases where firefighters who were among the first four members to arrive on the scene of a structure fire, were trapped and unable to extricate themselves.

The safety of firefighters engaged in interior structural firefighting is the major focus of paragraph (g)(4) of the OSHA Respiratory Protection standard. This provision requires that at least two employees enter the Immediately Dangerous to Life or Health (IDLH) atmosphere and remain in visual or voice contact with each other at all times. It also requires that at least two employees be located outside the IDLH atmosphere, thus the term, "two in/two out". This assures that the "two in" can monitor each other and assist with equipment failure or entrapment or other hazards, and the "two out" can monitor those in the building, initiate rescue, or call for back-up. One of the "two out" can be assigned another role such as incident commander.

The two-out provision of the standard is not a change from OSHA's prior Respiratory Protection Standard, which required standby **men** (plural) whenever respirators were used in imminent danger situations. The two-in requirement for firefighters, which you do not question, was not required by the prior standard but is consistent with OSHA's recent enforcement practice. OSHA's rationale for the requirements is explained in detail in the preamble to the standard at 63 Fed. Reg. 1245-1248 (Jan. 8, 1998). As well as the situations described there, OSHA has received reports of a number of incidents in which the failure to follow two-in/two-out procedures has contributed to firefighter casualties.

For example, in Lexington, Kentucky, one firefighter died and a second Kentucky OSHA cited the firefighters' employer for failing to utilize two-in/two-out procedures. In a second case, OSHA has learned about two firefighters who died from smoke inhalation after being overcome by toxic fumes while fighting an accidental fire in Philadelphia, Pennsylvania. Although two additional firefighters were outside the home, both were engaged in support activities (hydrant hook-up and pump operation), and neither was fully accountable for monitoring the interior personnel.

OSHA also has had a report of a success story following the adoption of two-in/two-out procedures in Pittsburgh, Pennsylvania. The fire department there implemented an accountability and rescue system after a fatal fire. In one case, four firefighters who were performing an interior attack on an apartment building fire became disoriented and were trapped in the building. The standby personnel were able to initiate rescue operations promptly. As a result, although the four interior firefighters and two of the rescuers were injured, all survived.

Because these cases involve situations that are typical of those faced by firefighters, we expect there are additional instances of firefighters who either were or could have been saved through the utilization of two-in/two-out procedures. Most firefighters are employed by local governments, however, and their operations are not governed by Federal OSHA, which does not cover state and local government employees. In contrast, states that operate their own OSHA-approved occupational safety and health plans must cover these public employees. Therefore the provisions of the respirator standard relating to firefighters will be enforced primarily by the twenty-five state-plan states. As you know, Rhode Island does not have its own OSHA-approved state plan so no OSHA program will enforce the two-in/two-out requirement in its public fire departments. OSHA does, however, encourage compliance by these employers.

OSHA also emphasizes that the two-in/two-out provision, like all OSHA standards, states a minimum requirement. Your suggestion that safety would be enhanced if the two inside firefighters are accompanied by a supervisor is therefore not precluded by the OSHA standard. However, because an additional person would then be subject to the extrahazardous and hostile environment created by a structural fire, the need for adequate and attentive standby personnel is even more crucial. OSHA also questions your premise that, in the case of a four-person crew with a two-person interior team, one of the outside members would need to serve as a full-time incident commander. We believe it should be possible for one crew member to operate the pump or perform any other necessary support activities, while the other monitors the inside team. But regardless of the size of the team, the least desirable situation would be to have only a single outside crew member, particularly one whose attention is focused on performing support functions rather than on monitoring the firefighters inside.

We thank you for your interest in safety and health. We hope this provides you with the information you have requested. If you have further questions, please call Ms. Wanda Bissell of my staff at (202) 219-8036 Ext. 41.

Sincerely,

John B. Miles, Jr.
Directorate of Compliance Programs

Standard Interpretations - Table of Contents

UNITED STATES
DEPARTMENT OF LABOR

Occupational Safety and Health Administration
200 Constitution Ave., NW,
Washington, DC 20210
800-321-6742 (OSHA)
TTY
www.OSHA.gov

APPENDIX C

NATIONAL FIRE PROTECTION ASSOCIATION

PAMPHLET 1710

FIREGROUND STAFFING STANDARDS

FOR CAREER FIRE DEPARTMENTS

NFPA 1710

Changes to Fireground Staffing Levels for Career Fire Departments

NFPA 1710 provides the minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments.

For the 2016 edition of the standard, subsection 5.2.4 on fire department service deployment was revised to include three new occupancies, along with the appropriate response staffing levels for each. The minimum staffing level for each occupancy is listed below. *(For the full breakdown of staffing requirements by position, refer to the subsections specific to each occupancy in 5.2.4.)*

Single-Family Dwelling — minimum of 14 members (15 if aerial device is used)

The initial full alarm assignment to a structure fire in a typical 2000 ft^2 (186 m^2), two-story, single-family dwelling without a basement and with no exposures must provide for a minimum of 14 members (15 if an aerial device is used).

Open-Air Strip Mall — minimum of 27 members (28 if aerial device is used)

The initial full alarm assignment to a structure fire in a typical open-air strip shopping center ranging from 13,000 ft^2 to 196,000 ft^2 (1203 m^2 to 18,209 m^2) in size must provide for a minimum of 27 members (28 if an aerial device is used).

Garden-Style Apartment — minimum of 27 members (28 if aerial device is used)

The initial full alarm assignment to a structure fire in a typical 1200 ft^2 (111 m^2) apartment within a three-story, garden-style apartment building must provide for a minimum of 27 members (28 if an aerial device is used).

High-Rise — minimum of 42 members (43 if building equipped with fire pump)

The initial full alarm assignment to a fire in a building with the highest floor greater than 75 ft (23 m) above the lowest level of fire department vehicle access must provide for a minimum of 42 members (43 if the building is equipped with a fire pump).

Fire departments that respond to fires in occupancies that present hazards greater than those found in 5.2.4 shall deploy additional resources as described in 5.2.4.5 on the initial alarm.

NOTE: Even though fireground staffing levels have changed, NFPA 1710 continues to require that engine companies be staffed with a minimum of 4 on-duty members, as stated in subsection 5.2.3. In addition, paragraph 5.2.2.2.1 requires that the fire department identify minimum company staffing levels as necessary to meet the deployment criteria required in 5.2.4 to ensure that a sufficient number of members are assigned, on duty, and available to safely and effectively respond with each company.

Material used in this summary is taken from the 2016 edition of NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. This reprinted material is not the complete and official position of the NFPA or its Technical Committees on the referenced subject, which is represented solely by the standard in its entirety. That standard can be accessed online at www.nfpa.org.

Revised 11/15/2016

APPENDIX D

COMPARATIVE STAFFING INFORMATION FOR LOCAL & REGIONAL FIRE DEPARTMENTS

APPENDIX D – FIRE DEPARTMENT STAFFING INFORMATION

CALIFORNIA DEPT. OF FORESTRY & FIRE PROTECTION (CAL FIRE) – LOCAL GOVERNMENT COOPERATATIVE AGREEMENTS

As authorized by the California Public Resources, Government and Health and Safety Codes, CAL FIRE provides contractual local government fire protection and attendant services to about 150 local government agencies statewide. Locally, CAL FIRE functions as the Riverside County Fire Department protecting 1.6 million citizens from 97 fire stations with about 1,250 fire fighting personnel. The operation includes 21 partner fire cities and one community services district. In nearby San Bernardino County, CAL FIRE protects the Cities of Highland and Yucaipa. In San Diego County, CAL FIRE covers the unincorporated area and several local agencies.

CAL FIRE staffing varies from some very rural areas with one employee on duty supplemented by volunteer firefighters to some cities with 4 persons on a unit. In many areas, CAL FIRE provides paramedic or advanced life support.

The minimum staffing in Riverside County is 3 persons with one being a paramedic on engine companies and 4 persons with one being a paramedic on ladder companies. Riverside County also operates 10 paramedic transport ambulances in some Coachella Valley communities and 2 hazardous materials response teams.

CORONA FIRE DEPARTMENT

The Corona Fire Department has 118 employees, sworn and non-sworn. They deploy from 7 fire stations with 9 apparatus which are strategically located throughout the City (39 square miles) to meet the emergency needs of their 167,000 citizens and visitors. During 2016, Corona Fire responded to over 13,000 calls for service.

The Fire Department staffs 7 fire engines with 4 people (one being a paramedic), 1 Truck with 4 people, a squad with 2 people, and 1 Battalion Chief.

RIVERSIDE FIRE DEPARTMENT

The Riverside Fire Department annually responds to over 36,000 emergency calls. Operations employs 220 full-time firefighters, housed 24/7 in 14 strategically located fire stations spanning a primary response area of over 81 square miles.

Technically their Minimum Staffing is 3.0. Their “Stand Alone” (10) Engines are all 4.0 Staffed, they still have (4) Engine Companies at multi-company houses (i.e. with a Truck or Squad in-house) with 3.0 Staffing. They have (2) Trucks with 3.0 Staffing and their Truck 1 has 4.0 Staffing. It is their goal to have all Trucks staffed at 4.0 Staffing in the next year or two and will look at the (4) engines that are 3.0 staffing in the future to upgrade to 4.0 Staffing. All Engines and Squads have Paramedics assigned. Most Trucks have Paramedics assigned, but working towards that being their standard.

MURRIETA FIRE DEPARTMENT

Five (5) strategically located fire stations house personnel and specialized equipment that provide fire suppression, rescue, and special operations response to about 113,000 citizens over 34 square miles.

The Fire Department staffs all fire engines, one of which is a quint, with 3 firefighters (minimum of one paramedic). Apparatus include four type 3 cross-staffed engines and a water tender.

HEMET FIRE DEPARTMENT

The Hemet Fire Department serves 85,000 citizens from 5 fire stations spread over 28 square miles. Annually, firefighters respond to approximately 16,900 emergencies. Hemet FD provides fire and EMS services.

The Fire Department staffs all fire engines with a minimum of 3 persons (one paramedic). The ladder truck is cross staffed from an engine company.

PALM SPRINGS FIRE DEPARTMENT

The Palm Springs Fire Department serves over 43,000 residents from 5 fire stations in the 94 square miles of the City. Over, 2 million visitors frequent the City every year.

Minimum daily staffing is 19 suppression personnel (1-Battation Chief, 15 fire station firefighters (5 Captains, 5 Engineers & 5 FF/Paramedics) and 3 firefighters assigned the aircraft fire rescue function). Minimum daily staffing on fire engines is 3 personnel.

CATHEDRAL CITY FIRE DEPARTMENT

Cathedral City Fire Department protects 58,000 residents spread over 23 square miles. Upwards of 17,000 seasonal visitors come to the City. The Fire Department operates 3 fire stations.

Every day, the City has 12 personnel on duty (1-Battalion Chief, 3-Captains, 3-Engineers & 3 Firefighters). Two Engines each staffed with a One Captain and One Engineer, Two Ambulances each staffed with 2 Firefighter/Paramedics (The Engines and Ambulances are Dispatched as a two-piece company i.e. One Engine and One ambulance on all responses make up a 4- person company on-scene. One Truck (75' Quint) is staffed with One Captain, One Engineer and
One Firefighter / Paramedic.

The goal is to staff each of the two Engines with a Firefighter / Paramedic
(for 3-0 staffing) in 2017. This will provide 14 minimum on-duty staffing.

PECHANGA TRIBAL FIRE DEPARTMENT

The Fire Department protects the Pechanga Tribal Lands and the Pechanga Casino within 10 square miles. From 2 fire stations, they direct 27 full time firefighters, utilize 10 reserve firefighters and have 1- Fire Marshal, 1-Fire Inspector, 2-Admin/Support staff. About 600 full time residents, 3,500 workers and 15,000 daily recreationists are protected by the Fire Department.

The Fire Department staffs all fire engines with a minimum of 3 persons (one paramedic). The ladder truck is cross staffed from an engine company.

MORONGO TRIBAL FIRE DEPARTMENT

The Morongo Fire Department's mission is to provide essential emergency and non-emergency services to protect the lives and property of tribal members, descendants, residents, employees, and guests of the Morongo Indian Reservation and to protect the tribe's historical, environmental, cultural and economic resources. The Morongo Fire Department includes a staff of 21 firefighters responsible for protecting 55 square miles of the reservation land as well as the residential community, tribal enterprises and the 27-story, 44-acre casino. The Fire Department has one staffed engine and one staffed ladder truck.

The Fire Department staffs all fire engines with a minimum of 3 persons (one paramedic). The Type III Brush engine is cross staffed.

LOS ANGELES COUNTY FIRE DEPARTMENT

The Los Angeles County Fire Department, a fire protection district, protects the unincorporated area of the County, 58 partner-contract cities and the State Responsibility Area (SRA) for CAL FIRE under contractual agreement. Responding from 158 fire stations located across the 2,305 square miles of Los Angeles County, 4,000 firefighters and lifeguards protect 4 million residents from fires and respond to medical emergencies and traffic collisions, technical rescues and hazardous materials discharges. The department responds to the most densely populated and least dense populated areas of the County.

With a few exceptions, LA County fire stations are staffed with a minimum of four personnel. If the fire station has a ladder truck/quint or paramedic squad, the engine company staffing is normally three firefighters. If it is a stand-alone engine, staffing is four personnel. LA County Fire has made some exceptions to this standard with city partner contacts, and if requested by cities, and will allow a minimum of three persons on a stand-alone engine.

The minimum staffing is always three personnel. LA County Fire does not have any stand-alone paramedic squads. The issue with a stand-alone squad would be the lack of supervision.

Staffing Configurations

Trucks/Quints/Light Forces
4-Person Quint/Truck 1 Captain, 1 Firefighter Specialist, 2 Firefighters
4-Person Paramedic Assessment Quint 1 Captain, 1 Firefighter Specialist, 1 Firefighter, 1 Paramedic Firefighter 6-Person Light Force 1 Captain, 2 Firefighter Specialists, 3 Firefighters

Engines
4-Person Engine Company 1 Captain, 1 Firefighter Specialist, 2 Firefighters
3-Person Company 1 Captain, 1 Firefighter Specialist, 1 Firefighter
4-Person Paramedic Engine 1 Captain, 1 Firefighter Specialist, 2 Paramedic Firefighters 3-Person Paramedic Engine 1 Captain, 1 Firefighter Specialist, 1 Paramedic Firefighter
4-Person Paramedic Assessment Engine1 Captain, 1 Firefighter Specialist, 1 Firefighter, 1 Paramedic Firefighter 3-Person Paramedic Assessment Engine 1 Captain, 1 Firefighter Specialist, 1 Paramedic Firefighter

Paramedic Squads
2-Person Paramedic Squad* 2 Paramedic Firefighters

Paramedic squads are always housed with an engine or quint, and the captain of the engine/quint is the supervisor of the paramedic squad. Except for paramedic squads, all other unit types can be housed independently.

ORANGE COUNTY FIRE AUTHORITY

Every member of the Orange County Fire Authority, a joint powers authority, contributes to the quality of life within our community. They protect and support the needs of their "neighbors" fully possible while helping and supporting ourselves. They believe in our proud traditions and our dynamic future. Their community respects and values our services and they constantly reinforce that the responsibilities with which they are entrusted are well placed.

The Orange County Fire Authority is a regional fire service agency that serves 23 cities in Orange County and all unincorporated areas. The OCFA protects over 1,680,000 residents from its 72 fire stations located throughout Orange County. OCFA Reserve Firefighters work 10 stations throughout Orange County.

Minimum staffing is as follows:

Fire Engine: 4 persons with 2 members functioning as dual purpose paramedics
Ladder Truck: 4 persons with some trucks having 2 members functioning as dual purpose paramedics

SAN BERNARDINO COUNTY FIRE DEPARTMENT

At 20,160 square miles, San Bernardino County is the largest county in the continental United States. Their jurisdiction encompasses 19,278 square miles of extremely diverse environments that stretch from the Los Angeles County line on the west, to the Colorado River on the east, to the Nevada State line and Kern and Inyo counties on the north. They provide services to more than 60 communities/cities and all unincorporated areas of the county. San Bernardino County's Diversity their jurisdiction encounters hazards that include floods, fires, earthquakes, and train derailments, among others, that can impact highly urbanized metropolitan areas, industrial centers, and major portions of the most vital interstate

highway and railroad transportation corridors that serve Southern California. They are also home to major entertainment venues such as the Glen Helen Amphitheater, San Bernardino County Fairgrounds, and the California Speedway. Their mountain resort areas, the Colorado River and vast high-use recreational desert lands underscore our diverse geography. In the 2014/15 fiscal year, the San Bernardino County Fire Department responded to 83,695 calls for service in these complex areas.

The San Bernardino County Fire District (BDC) has no formal document that specifies our current staffing model. The following staffing guidelines apply:

- San Bernardino County Fire has 50 staffed stations. Those stations cover both their unincorporated areas and our areas covered by contracts and/or annexed fire service for cities.
- Of those 50 staffed stations, all but 3 are staffed with 3.0 Medic Engines and/or trucks. These 3 stations are covered with Medic Brush Patrols (MBP -Type VI) and 2.0 staffing (Captain assigned to each).
- These 3 (2.0) staffed units are budgeted to increase to 3.0 Type I engines this coming budget year.
- These MBP's serve sparsely populated unincorporated areas within the County.
- They specify that no 2.0 Engines will serve in their contracted areas.
- They maintain a standard of not covering stations with only Medic Squads or Medic Ambulances. All staffed stations have 24/7 Captain supervision.

SAN DIEGO FIRE DEPARTMENT

The Fire-Rescue Department (Department) is a primary and integral component of the City's public safety system. The Operations Division of the Department consists of 47 fire stations citywide with an average of 275 firefighters on duty daily. Each fire station houses at least one fire apparatus, namely a fire engine or a fire truck, for the purpose of delivering firefighters, equipment, and water to extinguish fires and provide for first responder emergency medical services. The Department covers 321 square miles of territory, serves a population of 1.3 million residents and over 29 million visitors (in 2009, according to the San Diego Convention and Visitors Bureau) and responds to more than 100,000 emergency calls per year.