



1.4 POLICY CHOICES FRAMEWORK

As a starting point, fire district and County leadership needs to remember that there are no mandatory federal or state regulations directing the level of fire service staffing, response times and outcomes. Thus, communities have the level of fire services that they *can afford*, which is not always what they would desire. However, the body of regulations on the fire service provides that *if fire services are provided at all, they must be done so with the safety of the firefighters and citizens in mind* (see regulatory discussion below). Given this situation, the overall challenge for the fire districts is to design fire services within the fiscal constraints that limit the Department's ability to staff, train and equip a safe and effective fire/medical response force.

1.5 REGULATION AFFECTING THE FIRE SERVICE

In addition to restrictions on local government finance, there have been a number of new state and federal laws, regulations, and court cases over the last decade that limit the flexibility of cities in determining their staffing levels, training, and methods of operation. These are given an abbreviated overview below:

1. 1999 OSHA Staffing Policies – Federal OSHA applied the confined space safety regulations for work inside tanks and underground spaces to America's firefighters. This requires in atmospheres that are "IDLH" (Immediately Dangerous to Life and Health) that there be teams of two inside and two outside in constant communication, and with the outside pair equipped and ready to rescue the inside pair. This situation occurs in building fires where the fire and smoke conditions are serious enough to require the wearing of self-contained breathing apparatus (SCBA). This is commonly called the "2-in/2-out" policy. This policy requires that firefighters enter serious building fires in teams of two, while two more firefighters are outside and immediately ready to rescue them should trouble arise.

While under OSHA policy one of the outside "two-out" personnel can also be the incident commander (typically a chief officer) or fire apparatus operator, this person must be fully suited-up in protective clothing, have a breathing apparatus donned except for the face piece, meet all physical requirements to enter IDLH atmospheres and thus be ready to immediately help with the rescue of interior firefighters in trouble.

2. May 2001 National Staffing Guidelines – The National Fire Protection Association (NFPA) Standard on Career Fire Service Deployment was issued seven years ago. While *advisory* to local governments, as it starts to become locally adopted and used, it develops momentum, forcing adoption by neighboring communities. NFPA 1710 calls for four-person fire crew staffing, arriving on one or two apparatus as a "company." The initial attack crew should arrive at the emergency within four minutes travel time, 90 percent of the time, and the total effective response force (first alarm assignment) shall arrive within eight minutes travel time, 90 percent of the time.

In substantially combination (volunteer) departments, the NFPA 1720 recommends the initial response is 6 firefighters in 14 minutes, 80 percent of the time. These guidelines will be explained and compared to El Dorado area fire departments in the deployment measures section of this document.

3. The on-scene Incident Commanders (typically Chief Officers) at Hazardous Materials Incidents must have certification compliant with NFPA 472, Standard for Emergency Response to Hazardous Materials Incidents. This is also now an OSHA requirement.
4. CAL OSHA Requirements – Among the elements required is a safety orientation for new employees, a hazard communications system for employees to communicate hazards to supervisors, the CAL-OSHA process for post injury reviews, the required annual report of injuries, and a standard for safety work plans. Employers have many different responsibilities under the Occupational Safety and Health Act of 1970 and the Code of Federal Regulations (CFR). Initially OSHA focused its efforts on the private sector; more recently, it has turned its attention to the public sector and specifically the fire service.
5. Volunteer Training Requirements – Early in this decade, due to rising firefighter injuries and deaths, especially in the paid-call ranks, more safety regulations and training minimums were placed on all firefighters:
 - January 2004 California Paid-call Firefighters – New laws (Assembly Bills 2118 and SB 1207) require paid-call firefighters to receive *the same level of training* that the full-time staff receives. AB 2118 was Chaptered in 2002, and was delayed to 2004. In part it “...provides that the California Occupational Safety and Health Act applies to paid-call firefighters. Equipment and training for paid-call firefighters to meet the same requirements as regular firefighters.”

These regulations, sometimes referred to as “Be a chief, go to jail,” are no laughing matter and in some cases carry criminal as well as civil liabilities. Most fire chiefs know this and make every effort to comply with the law on these issues, however this requires the understanding and support of their governing bodies as well.

This training standards and safety equipment change, coupled with all the other factors, causes many pure volunteer and even paid-call firefighter programs to dry up due to lack of members. Additional training and additional responses mean a significant time commitment for “true” volunteer or paid-call firefighters, who are serving for love of community and to give something back. Most departments feel that it takes 80 to 120 hours of training per year to meet safety minimums, and this time is *before* a paid-call or volunteer firefighter goes on a single emergency call.

1.6 NEGATIVE PRESSURES ON VOLUNTEER-BASED FIRE SERVICES

All volunteer-based fire departments are under great pressure today to maintain an adequate roster. The reasons for this are not unique to any one type of community and are placing pressure on small community volunteer systems across the state and nation:



- ◆ Economic pressures result in more two-income families and less time to volunteer.
- ◆ In a commuter economy, more jobs are clustered in metropolitan and dense suburban areas. Communities that formerly were small towns increasingly have residents who work elsewhere, and many of the younger-aged people who would consider volunteering are just too busy.
- ◆ Due to the growth in society of complex systems and technology, the fire service was given more missions, like emergency medical services, hazardous materials response, and technical rescue. This dramatically increased the legally mandated training hours for volunteers, causing many to drop out as the time commitments became unbearable.

Volunteer and paid-call firefighters are citizens first and firefighters second, and the fact that they are willing to volunteer their time is worthy of respect, but it is unfair for the community to expect a few citizens to carry the firefighting load for all the rest. Studies have shown that most people volunteer for the fire service because they receive some intrinsic value from their service, and generally it is more than just “community service.” If a community expects people to volunteer their time as volunteer or paid-call firefighters it must do its part to support them and ensure that those intrinsic rewards are maintained.

In addition, most employers today are unwilling to allow paid-call firefighters to leave their jobs to respond to an emergency dispatch; chiefs in El Dorado County mentioned this exact situation. Across the fire service, volunteer and paid-call programs have been changing and adapting to a different model. The current model understands the commitment needed, and usually includes two types of paid-call firefighters: the first is the usual community-based person; the second is a younger person who desires to be a career firefighter. While the younger person is going through community college fire science classes, after obtaining basic firefighter certification, they work “part-time” for a per diem shift stipend or for an hourly wage, without benefits. These personnel are used successfully to increase daily station staffing and are called “reserve” firefighters or part-time firefighters. They do not need to live in the community they serve, as they are often not needed to respond from home with quick travel times.

El Dorado County fire agencies use this model in various forms and degrees as part of their staffing programs. The level of “ability” exhibited of course varies depending on their level of training. Community-based paid-call firefighters can be used from home for major emergencies, within their limited training as they gain certifications and experience. Once they meet state minimums, they also can be used for per diem shifts. In El Dorado County the common practice in many of the agencies is to use the paid-call and per diem firefighters Monday through Friday during the day and depend more heavily on volunteer response at night and on the weekends.

1.7 INCIDENT COMMAND STAFFING (CHIEF OFFICERS)

As noted above, safety regulations state the emergency incident must have a certified, trained incident commander (duty chief, chief officer, battalion chief, etc.).

Many of the fire districts can only afford one and maybe two or three chief officers. If the officer lived within the department’s boundaries, they handle after hours emergencies from home. This

responsibility often comes ahead of family and any other personal time. This level of chief officer staffing is considered inadequate and depending on the individual's qualifications even unsafe in today's highly regulated safety rule set for fire services. In the absence of the sole chief officer, the fire engine captain, who may or may not hold chief officer credentials, assumes command until relieved by a higher trained officer.

If a political subdivision provides fire services at all, they must be provided with the safety of the public and firefighter in mind. Additionally, the Chief Officers as scene incident commanders must be well trained, competent and are liable for mistakes that violate the law. An under staffed, under led token force will not only not be able to stop a fire, it opens the employer up for real liability should the fire department fail.

Then there are the advances in fire service prevention and fire codes, which mean the departments, need to provide effective fire prevention and enforcement for the adopted Fire Code. Almost none of the agencies in El Dorado County can afford a trained, certified fire prevention officer/fire marshal. Most of the single chiefs in the small departments have to also handle these functions.

At a minimum, these safety, command, training and fire prevention needs will require 3 Chief Officers, all of whom live within or immediately adjacent to the fire district and are willing to share on-call 24 hour responsibility year-round. More realistically a minimum, safe and effective headquarters staff for even a one-station fire department looks like:

1. Fire Chief
2. Fire Marshal
3. 3 Battalion Chiefs to provide 24/7/365 incident command and station supervision/training
4. Office Support Position.

Most fire departments can no longer recruit Chief Officers willing to make the commitment to live in the department and respond from home to emergencies, which means a significant impact on their family life. This is even more problematic at the pay level that a small district can afford.

Here is the current chief officer count in the 14 El Dorado fire departments:

Staffing Headquarters – Fiscal Year 2008-09

Agency	Total Full-Time Chief Officers
<i>Tahoe Basin</i>	
Fallen Leaf Lake CSD	1
Lake Valley FPD	4
Meeks Bay FPD	1
South Lake Tahoe FD	5
<i>West Slope Agencies</i>	
Cameron Park	2



Agency	Total Full-Time Chief Officers
Diamond Springs/El Dorado FPD	3
El Dorado County FPD	8
El Dorado Hills County Water District	4
Garden Valley FPD	1.5
Georgetown FPD	1
Latrobe FPD	0.33
Mosquito FPD	0.3
Pioneer FPD	1
Rescue FPD	1

1.7.1 Chief Officer Analysis

The agencies with shaded names in the table above received the prior aid to fire funds from the County. None of them have even two full-time chief officers. Cameron Park has two CAL FIRE Chief officers via their contract. One chief does field operations, the other fire prevention. Only the larger and better funded departments have enough chief officers to staff headquarters functions like prevention and training while also covering incident command duties 24/7/365.

In El Dorado County Fire Protection District's case, they cover a very large area, too large for one duty chief to cover in a reasonable response time, so their chief officer count is not excessive.

In the Tahoe Basin, even if the agencies wanted to contract/consolidate chief services, Meeks Bay Fire Protection District is too far from Lake Valley Fire Protection District, and impossible to get to in winter, so Meeks Bay Fire Protection District almost demands a chief officer due to isolation. Or Meeks Bay Fire Protection District could possibly contract with North Lake Tahoe Fire across the county line. Fallen Leaf Lake Community Services District could contract, but have longer response times from Lake Valley Fire Protection District's headquarters.

In the West Slope, even IF all of the departments receiving aid to fire were merged with other agencies, while on paper this reduces 5.1 chief officers, it does not permanently. In order to maintain incident command response times, it might take a northern and a southeastern West Slope duty chief. If staffed on a 24-hour shift schedule, this would take for two per day, 6 chiefs total. If instead two "resident" chiefs could be found who would share all of the incident command response duties, then at least the West Slope agencies would need one training officer and one fire prevention officer. So even if these staff positions are compensated at less than chief officer wages, a consolidated model still could consume at least 4 of the 5.1 saved positions. While this is more efficient and likely a better joint headquarters service level with specialists at different positions, at best it is plus or minus \$100,000 annual savings, which is not enough savings to allow any of the agencies to improve services, or even stave off using fiscal reserves during the recession.

1.8 APPARATUS AND SAFETY REGULATIONS

Generally speaking, fire response vehicles (engines, ladder trucks, rescue vehicles and other similar heavy vehicles) travel considerably fewer miles in their lifetimes than do similar trucks in commercial service. Mileage is, therefore, not a reliable parameter to judge the replacement criteria for fire apparatus. Fire departments use age as a much more reliable barometer to evaluate replacement: as apparatus ages finding parts to maintain and repair becomes problematic; safety standards change over time and older apparatus frequently does not meet the newer standards; and labor saving devices and other improvements develop over time.

Fire apparatus manufacture is a specialty business. Many of the smaller fire apparatus manufacturers construct the “build-up” (compartments, pumps, aerial ladders, etc.) on chassis built by others. Many of the smaller companies go out of business only to be replaced by others. For example, *Beck* and *P. E. Van Pelt* both used to build fire apparatus in California and both of these companies apparatus are in fire departments in El Dorado County. However, the factory support for these companies is pretty much non-existent. Replacement parts for the build-ups need to be specially constructed at a high cost.

In 1991 the National Fire Protection Association (NFPA) issued a new version of Standard 1901 *Standard for Automotive Fire Apparatus* that incorporated many new safety standards and states, “It is recommended that apparatus built to meet the 1979 or 1985 edition of NFPA 1901 be placed in reserve status and upgraded to incorporate as many features of the post 1991 fire apparatus as possible.” In 2006 NFPA issued Standard 1912 *Standard for Fire Apparatus Refurbishing* which now provides guidelines for bringing old apparatus up to current standards.

During Citygate’s review of the departments that received county augmentation funding the age of the fleet was reviewed and if there were engines older than 1991 manufacture, the departments were polled on the safety upgrades that NFPA 1901 requires of pre-1991 fire apparatus.

The rule of thumb for replacement of first line apparatus is 15 years of service with another five years in reserve. This means that the average age of the fleet should hover around seven or eight years. In volunteer service in rural communities with low call volumes a service life of twenty years with five years in reserve would be reasonable. After 25 years of service, regardless of conditions, the difficulty of obtaining parts and making repairs along with the safety considerations makes apparatus of this age undesirable.

All of the agencies reported that Monday through Friday during normal commute and working hours is when they had the lowest turnout of volunteers (many work in the Sacramento area). Every labor saving device that can be included in an engine or ladder truck will help fill that gap when they are most vulnerable. An example of this would be a newer structure fire pumper that instead of plain water for fire attack can use one of the newer Class A Fire foams or compressed air foams. These foams greatly multiply the fire knock down effect, which allow for smaller diameter fire hoses that in turn are more mobile to move around and require fewer firefighters per hose line.

1.9 TRAINING AND SAFETY REQUIREMENTS

The job of a firefighter is extremely complex, and firefighters must perform the services they deliver correctly every time. This is particularly critical for those tasks that are very hazardous,

do not occur very often, and for which there is little decision time. Training in the fire service has three parts: (1) vocational training which teaches the skill sets necessary to perform the “hands-on” type work that firefighters do; and (2) education which teaches the knowledge necessary to do the “mental” work that firefighters do; and (3) frequent training drills that practice and maintain the skills and knowledge needed to operate efficiently and safely.

The NFPA has ten recommended standards that cover the training arena. Then there is specific State of California firefighter and emergency medical training requirements. Some of the required training must be done only once, such as driver/operator certification; other training requires repetition for so many hours each year or quarter, such as 32 hours per year of medical training for paramedics. There are two painful issues for substantially volunteer fire departments for training – first it takes a lot of time, and second, actually delivering, certifying and tracking the training to ensure compliance and currency.

In order to maintain consistent standards, it is considered a best practice to place entry-level firefighters, volunteer or career into some sort of academy. Even when partially accomplished through web-based independent study, this still averages 80+ hours of training before they can ever go on a call. Next comes basic first aid at about 24 hours, or Emergency Medical Technician-Basic at about 100 hours. Now the “volunteer” is ready to go on an emergency.

After this initial certification, the new firefighter still needs about 80-100 hours of training each year to meet annual state safety and EMS standards, even more should they need training in more advanced or specialized medical, rescue or hazardous materials skills. On top of this comes hours to train on new procedures, equipment, or apparatus. So even a “free” citizen volunteer could put in over 100 hours per year or 2 hours per week just for training, before they are able to serve stand-by time in a fire station or respond to emergencies.

Federal and state safety standards require that all training must be documented as to the individual, subject, instructor and hours. This takes clerical support time and an accurate record keeping system. In the case of a firefighter injury or safety violation, these records are critical to the agency’s liability exposure and will be examined by the regulatory agency investigating the incident. Training records can also be used in court, in the event of a lawsuit.

Then there are required safety and firefighter health standards. These cover the breathing apparatus and protective clothing as well as personal health standards for each individual to be able to serve. There needs to be periodic testing of health fitness for the use of breathing apparatus plus the apparatus itself has to be tested to ensure that it fits the face of the firefighter properly. This means that individual firefighters as well as protective equipment must meet current standards, be tested/inspected annually and accurate records maintained.

Finally, there are DMV training and testing requirements for the operators of fire apparatus and ambulances. Chief officers need even higher levels of certification and training, such as Hazardous Materials Incident Commander.

Who oversees this training delivery program? Someone has to be designated as a training officer in order to put programs together, arrange their delivery, conduct testing, and maintain records and track individual progress. Much of the training can be delivered “in-house,” but some can only be taught by certified instructors to be valid. In those cases, the department must seek instructors or courses from outside the agency, often at a high cost.

Most agencies estimate that it takes about \$5,000 in protective clothing to equip a firefighter. When you add in training costs for a new recruit, that recruit becomes a \$10,000 investment that may not even last the probationary period. Protective clothing, again mandated by safety standards, must be tailored to each individual; this makes it difficult to pass around garments. (Protective clothing garments also need to be decontaminated after each call where they are exposed to smoke or other contaminants; this cannot be done on a home washing machine, it requires expensive specialized equipment. While the garments are being decontaminated, substitute protective clothing needs to be available.)

Most of these regulatory costs have come on-line in the last ten years. They were needed for safety, but come at an incredible cost in equipment and administrative overhead. Many civilians outside the fire service do not understand this newer burden and wrongly believe that a volunteer firefighter is less expensive – but only for the salary and benefits!

International Association of Fire Chiefs in cooperation with the National Fire Protection Association has published *Fundamentals of Firefighter Skills*. It is 1067 pages long and contains 37 chapter or basic skill areas that a firefighter needs to have at least some knowledge, skills and ability. These skills are taken from NFPA 1001, *Standard for Fire Fighter Professional Qualifications*. There are similar requirements for company officers and chief officers.

A typical annual performance requirement might look something like this:

1.9.1 Ropes and Knots

Performance	Standard
Demonstrate inspecting rope	IFSTA Essentials*
Demonstrate proper cleaning and storage of rope	IFSTA Essentials
Demonstrate tying: Clove hitch Figure 8 Figure 8 follow-through Figure 8 bend Figure 8 on a bight Overhand bend Double overhand bend	IFSTA Essentials
Demonstrate hoisting tools and equipment aloft	IFSTA Essentials

*IFSTA *International Fire Service Training Association; Essentials of Firefighting and Fire Department Operations*, is a publication that describes the essential tasks of a firefighter.

Something as seemingly so innocuous as tying knots, requires training to learn how to do it and practice to ensure that the muscle motor connection is secure. It also requires a trainer who has the necessary skill to teach, test, and record the training. Finally, it requires the publication that carries the standard. This is repeated for every one of the multitudes of skill sets required of firefighters.

The greatest risk to firefighters, when bad things happen, is during those events that are fairly rare and very risky and where there is little or no time for anyone to evaluate and develop a plan.

