Hemet Fire Department,

California

Fire Department

Service Delivery Options Analysis

June 2015

Emergency Services
Consulting International

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Executive Summary

Emergency Services Consulting International (ESCI) was engaged by the City of Hemet to conduct a three phased study of the service needs of its community provided by the fire department. The first phase was to conduct a baseline assessment of the current conditions and current service performance of its fire department. The purpose of this phase was to assess the agency's operations in comparison to industry standards and best practices, as well as to create a benchmark against which the options for future service delivery can be measured.

The second phase was to conduct an assessment of the potential future community conditions, service demand, and fire protection risks that the organization may be expected to serve. The purpose of this phase was to determine community growth projections and interpret their impact on emergency service planning and delivery.

Finally, the third phase was to identify and recommend alternative service delivery options to address service gaps, position the HFD to meet the future needs of the community, and to conduct business as efficiently and effectively as possible. In this final phase, Mayor Krupa's statement during an in-brief with the ESCI team ("***Status Quo is a No Go***") shaped ESCI's approach to the creative alternatives to service delivery recommended in this report.

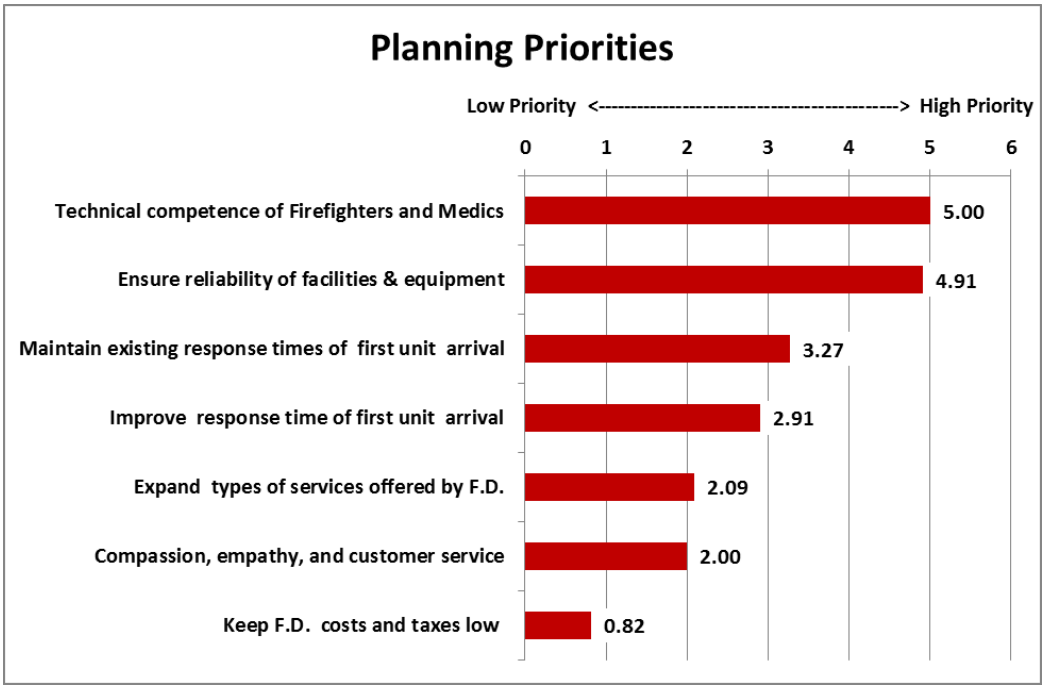
COMMUNITY CONTEXT

The HFD is emerging from a very difficult recent history. The leadership of the fire department over the last decade has changed seven times for an average tenure of one-and-half years (not including the current fire chief). Coupled with significant reductions in resources during the same period, the department reflects the lack of investment and churn experienced by its many changes in leadership. The lack of consistency and stability at the top has led to a lack of follow-through on programs, a lack of enforcement of regulations, a relaxing of standards, and a lack of advocacy for the mission of the fire department to the City of Hemet. Indeed, the Hemet Fire Department has suffered from neglect during this period, culminating in a serious effort to outsource the fire department to CAL FIRE in 2013. ESCI does not presume to understand the dynamics at play during this period; only that the effect has left HFD weaker in its ability to adequately serve the community.

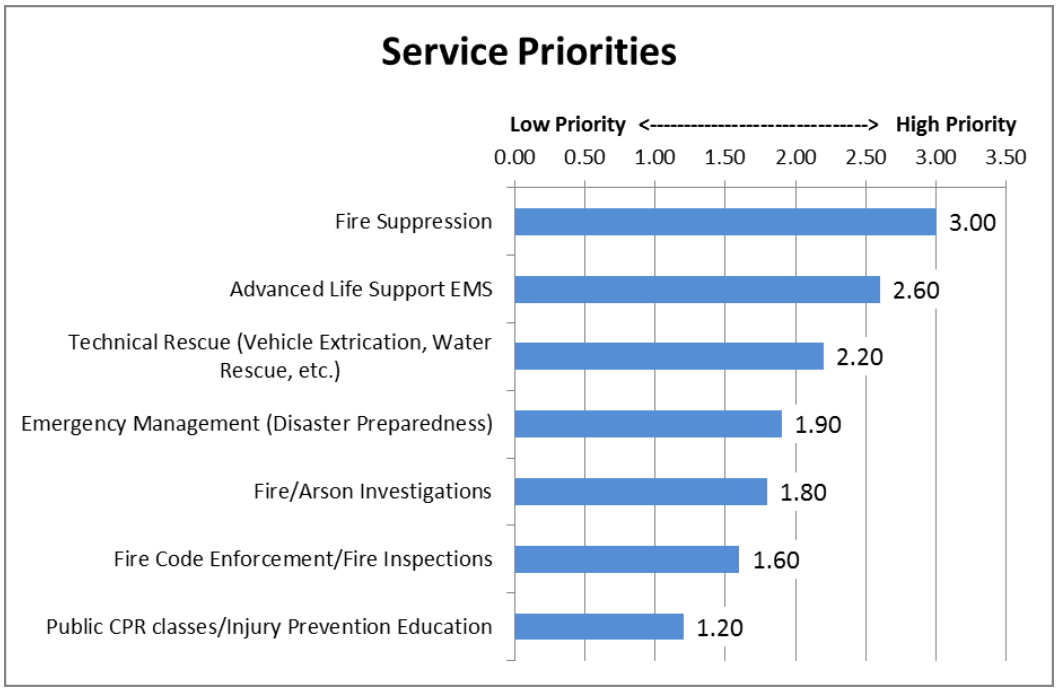
ESCI obtained a sampling of perspectives by conducting three internal stakeholder sessions (policy-makers, line personnel, and labor leadership) and two external stakeholder sessions (citizens and the business community). The report focused on the external stakeholder session results. The results from the citizen and business sessions were essentially the same, so the results were combined. The sample size (n=10) is not statistically valid; thus it is referred to as a community sampling.

After being given a brief overview of the Hemet Fire Department, the attendees were led through a structured survey by an ESCI facilitator. When asked to prioritize seven key planning elements, both the citizen group and the business group attendees placed a high emphasis on maintaining the technical competence of HFD personnel and maintaining reliable facilities and equipment. Keeping taxes low was

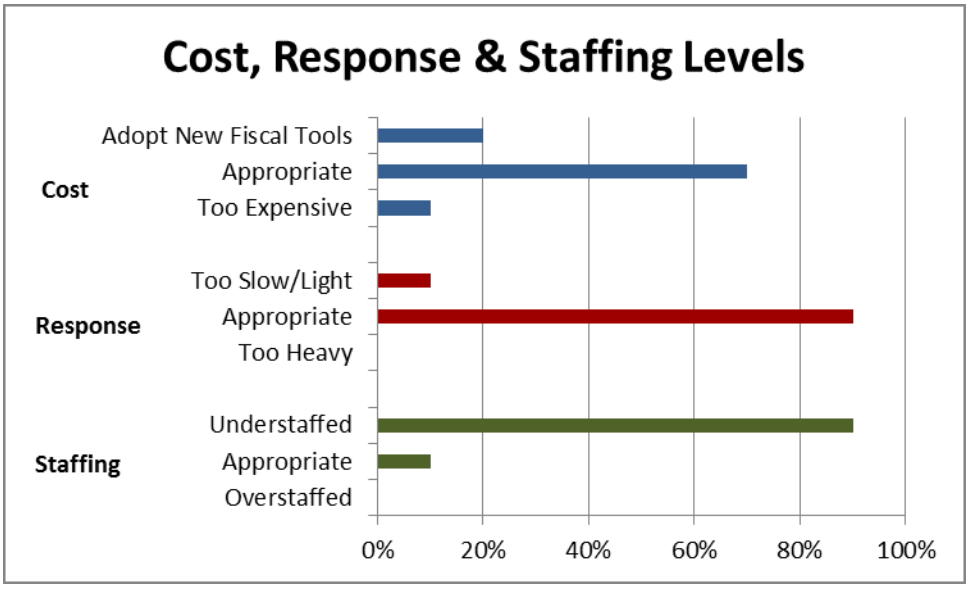
placed as the lowest priority. This should not be interpreted as support for higher taxes; rather an emphasis on fire department competence.



When asked to prioritize the services provided by the HFD and strike through any deemed unnecessary, the citizen and business groups selected fire suppression and advanced life support EMS as the two highest priority services. This is not surprising and is anecdotally consistent with the results of most communities throughout the western United States. Public education was rated as the lowest priority.



Finally, both the citizen and business groups were asked to rate the cost of service, the effectiveness of the emergency response, and the appropriateness of the staffing levels. The results reflected that the majority of those in attendance felt the cost of service was appropriate (70%); that the effectiveness of emergency response was appropriate (90%); and that the HFD was understaffed (90%)



HFD TODAY

The HFD is a municipal fire department serving a predominantly urban community (over 3,000 persons per square mile) distributed across more than 27 square miles in the San Jacinto Valley in Riverside County, California. The fire department provides fire suppression, first responder emergency medical

services at the basic- and advanced- life support level, technical rescue, and hazardous materials response (the latter two services are provided as part of a regional team). These emergency services are typical of a fire department the size of Hemet.

In addition, HFD provides very limited fire prevention and code enforcement services through a half-time equivalent contract employee and emergency management services through a half-time equivalent interim person. Public education is very limited, essentially on a request basis, and is performed by line personnel as time allows. Chaplain services are also limited, with crews relying upon law enforcement chaplains and local clergy when the need arises.

The administrative structure of HFD is a very flat hierarchy, with a newly appointed fire chief supervising three administrative captains (who still perform shift work), the four shift captains for each of the fire stations, the contracted fire prevention specialist, and the part time emergency manager. The fire chief also supervises and relies up on an administrative assistant. The fire chief has a supervisory to subordinate ratio of 1:9. Industry standard is a ratio of between 1:3 and 1:7.

HFD AND NATIONAL BENCHMARKS

The City of Hemet is served by five fire stations strategically placed throughout the jurisdiction. Stations one through four are staffed with a three person unit each (a fire engine in each one, with a ladder truck also located at station four, which is cross-staffed by the engine crew), and the fifth station is staffed with a two-person squad unit handling predominantly medical calls for service in the east end of the city. HFD has fewer fire stations, fewer fire engines (pumpers), and fewer ladder trucks (aerials) than the national average among communities of similar size.

When calculating the cost per capita of providing fire services to a community, HFD is also low ($129.86) as compared to the national average ($135.60) and to the California average ($193.18) for communities of similar size. The emergency call volume that HFD responds to (180.2 incidents per 1,000 population) is substantially higher than the regional median (83.4 incidents per 1,000 population). HFD responds to slightly more fires (3.3) per thousand population than the average of the regional median (2.4), but within a normal range.

HFD has a substantially lower fire loss ($19 per capita) as compared with the regional median ($34 per capita) and lower than the national median ($29 per capita). HFD also has substantially lower staffing levels (.55 firefighters per 1,000 population served) than either the national median (1.3 firefighters per 1,000 population served) or the regional median (.92 firefighters per 1,000 population served).

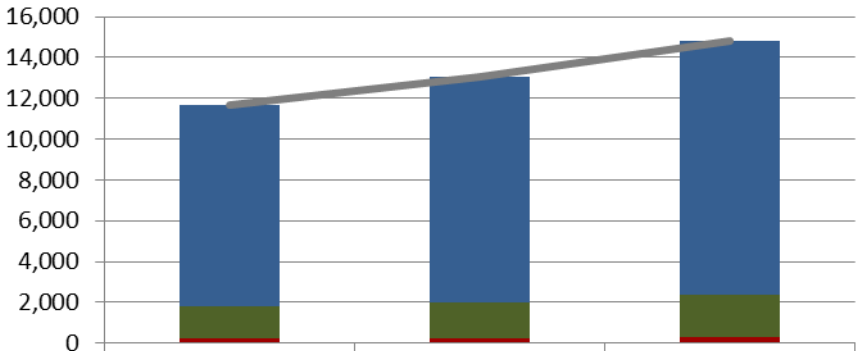
CONDITION OF CRITICAL INFRASTRUCTURE

The critical infrastructure for HFD consists of facilities, apparatus, and equipment necessary to adequately perform the tasks required. The “first due” (primary) response units are in good condition for the most part. They also appear to be appropriate for the risks faced. The fire stations tend to span the range from good condition (Stations 4 and 5) to fair/poor (Stations 1, 2, and 3). Station 5 is a modular home with a separate apparatus bay, impeding a quick turnout time when a call is received at

the fire station. While in decent shape for a modular home with separated truck bay, it is not well suited for long term use as a fire station.

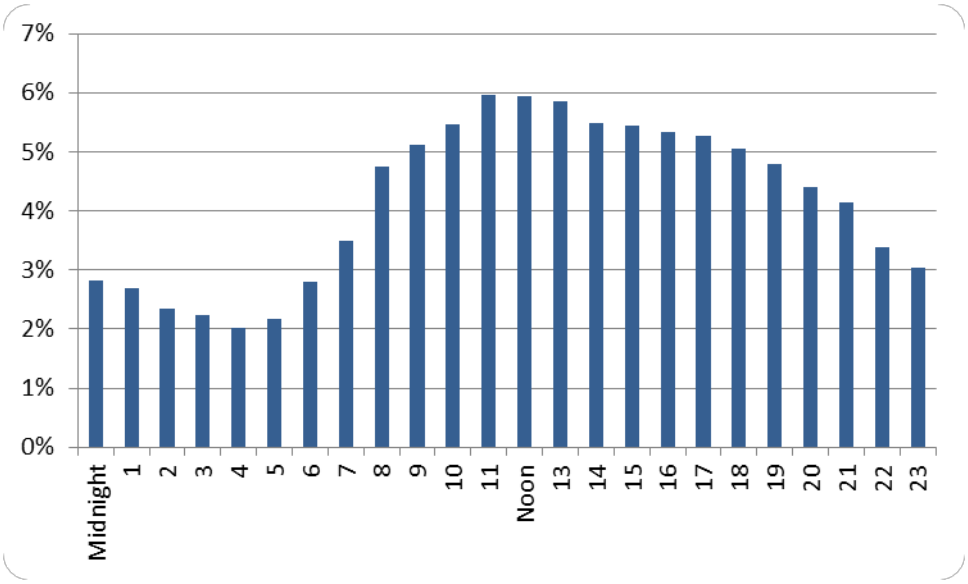
SERVICE DELIVERY & PERFORMANCE

Call volume for the HFD is steadily growing with an average year-over-year growth rate of 12.8%. This is a substantial rate of growth as compared with other fire departments, which are anecdotally growing at half that rate. In 2014, EMS made up 84.4% of the total calls for service, with fire representing only 1.8% of the total call volume. The fire demand as a percentage of total calls is typical of the fire service in the West, but the EMS call volume is higher than typical.



	2012	2013	2014
EMS	9,846	11,058	12,440
Other	1,573	1,760	2,110
Fire	230	217	267
Total	11,649	13,035	14,817

The occurrence of emergency incidence in Hemet was analyzed for hourly, daily, and monthly trends in 2014. The hourly data elements are important considerations when determining deployment windows for specialized units, which is discussed in the recommendations section of this report. The pattern is predictable, with activity increasing as people are active, and dropping off when most people are sleeping. The graph which follows has the distinctive “whale profile.” Activity begins to increase at six a.m., with significant call volume growth at eight a.m. It continues to grow; peaking at eleven a.m. to noon, where it plateaus and steadily begins to decline, matching the eight a.m. demand again at seven p.m.

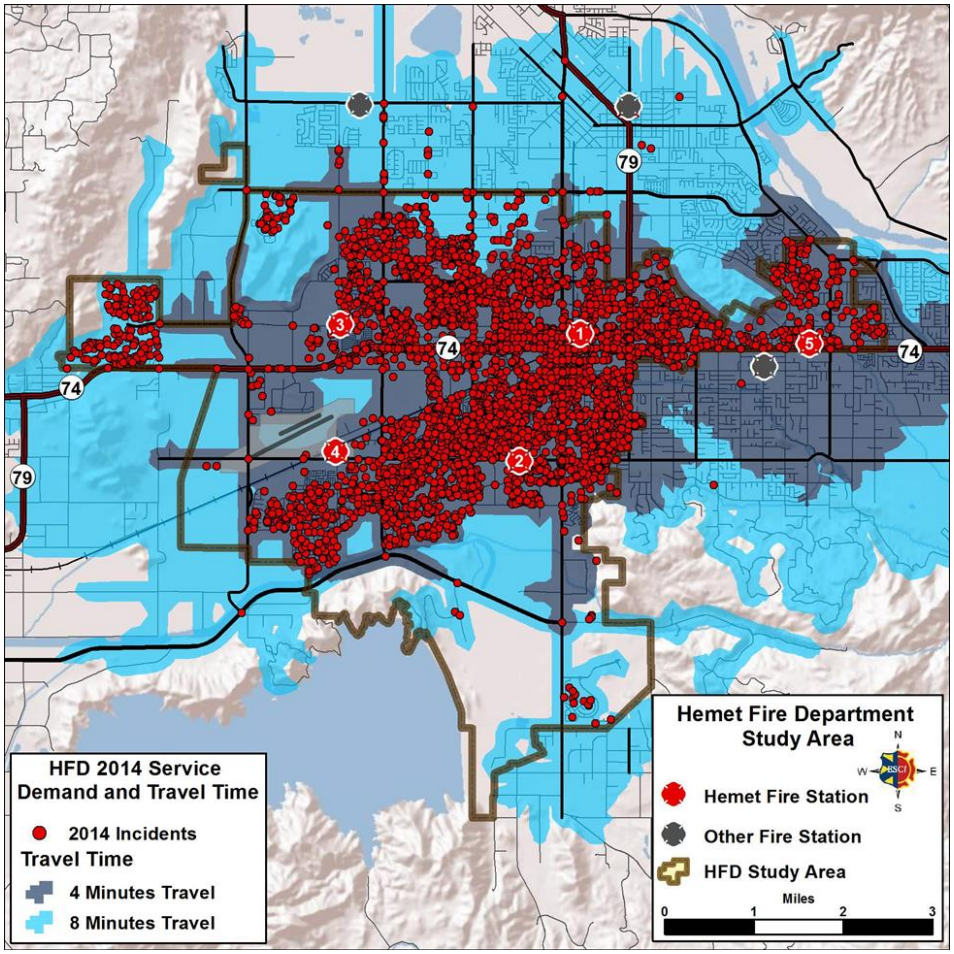


Analysis of response data by day of week shows very little fluctuation, with Wednesdays being the busiest at 15%, and Sundays being the slowest day at 13%. There is also very little difference in service demand between months. August is the busiest month at just over 9% of the annual call volume and February at 7% is the slowest month, likely contributed to by the fewer number of days.

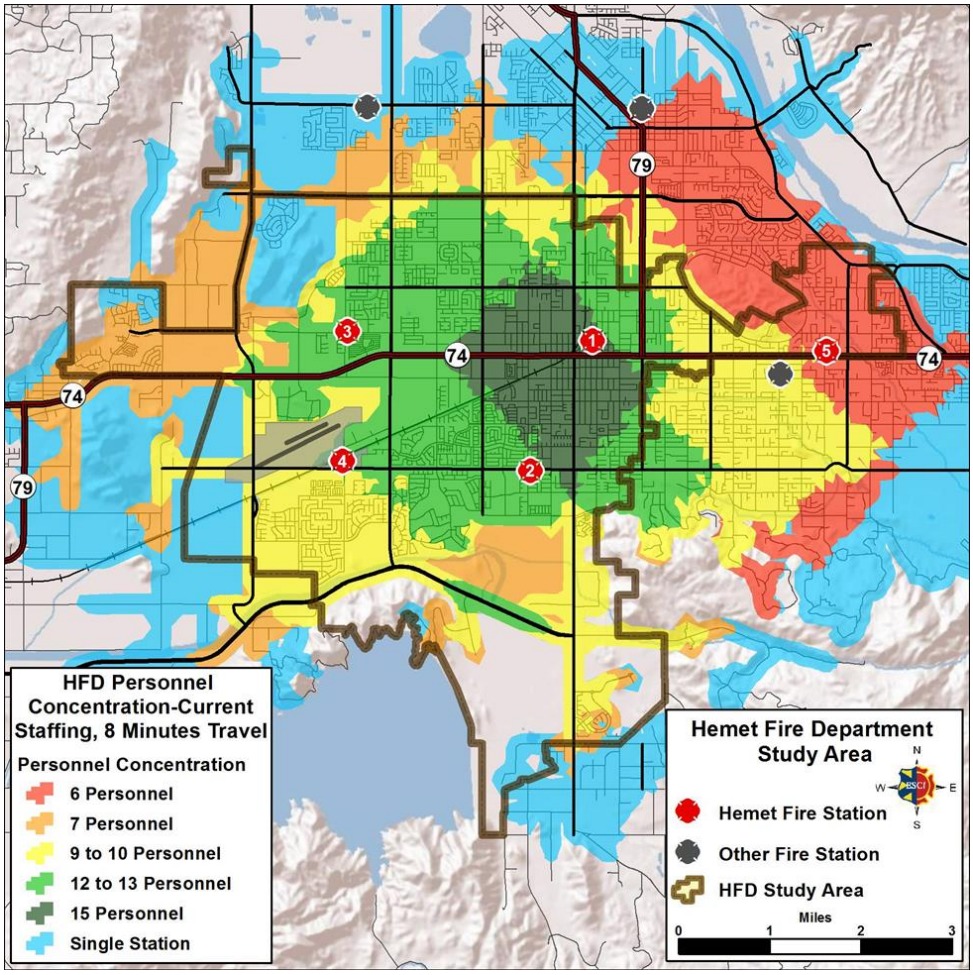
GEOGRAPHIC DEMAND

The following map clearly depicts significant service demand geographically. The red dots represent the location of an emergency call for service in 2014. As is evident, there are few areas which do not create a service demand for HFD. Geographically isolated areas in the northwest corner of the city and in the southern portion of the city do not create much service demand, nor does the airport. All other locations place a response burden on the fire station assigned to serve that area.

The same map also illustrates four and eight minute travel times for HFD units (assuming they are in quarters and available for response). The gray areas depict four minutes travel time, with the light blue depicting eight minutes travel time. The gray areas represent the potential to meet the NFPA 1710 travel time objective, which is a national consensus benchmark. In Hemet, approximately 93% of the incidents which occurred in 2014 were within four minutes travel from the nearest HFD fire station, but were not necessarily arrived at within the four minute travel time.



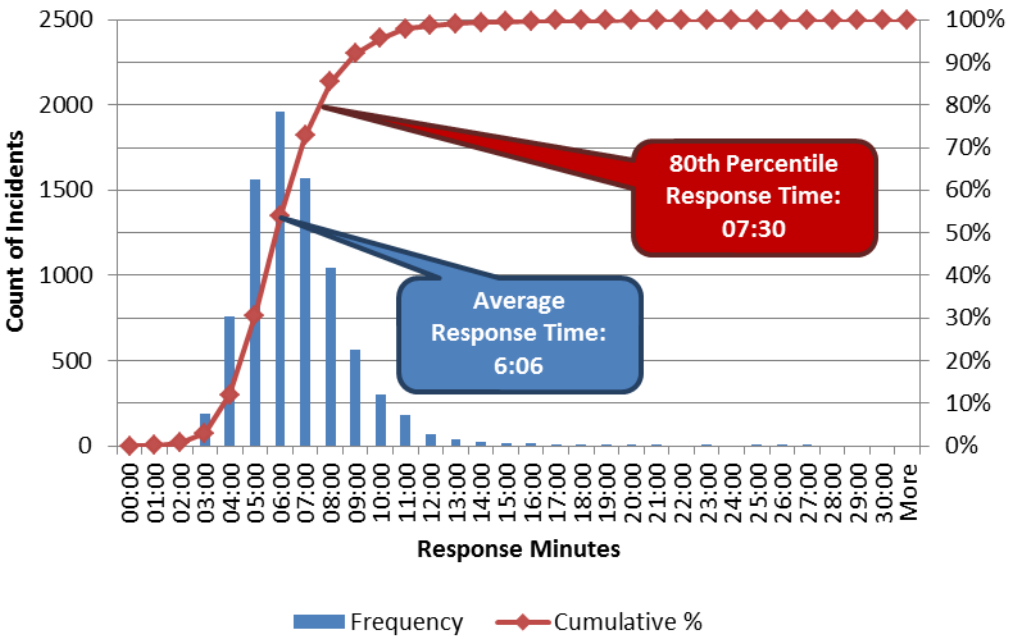
Besides travel time from the nearest fire station, another key data element is the concentration of resources necessary to successfully mitigate an incident. For moderate risk structure fires, the Commission on Fire Accreditation International (CFAI) has established an industry best practice which recommends a minimum of 14-16 firefighters are necessary to assemble at the scene of the incident in eight minutes travel time. This is referred to as an effective response force. HFD's full on duty force is 15, requiring all on duty resources to arrive in eight minutes travel time to meet this industry best practice. The following map depicts the area where all HFD resources can arrive in eight minutes travel time (assuming all units are in quarters and available for response).



The effective response force is difficult for HFD to achieve not only because the resources are dispersed geographically, but also because the number and frequency of calls for service increase the likelihood that at least one of the units will be unavailable while handling another call. In 2014, HFD handled two or more calls simultaneously 60.63% of the time. While the call volume is high and the frequency of simultaneous calls for service is also high, HFD's time on scene is fairly brief, at an average of just over 19 minutes for primary response units. Obviously, averages can have a swing of 50% on either end of the spectrum, but it appears HFD resolves the incidents they are dispatched to fairly quickly.

RESPONSE TIME PERFORMANCE

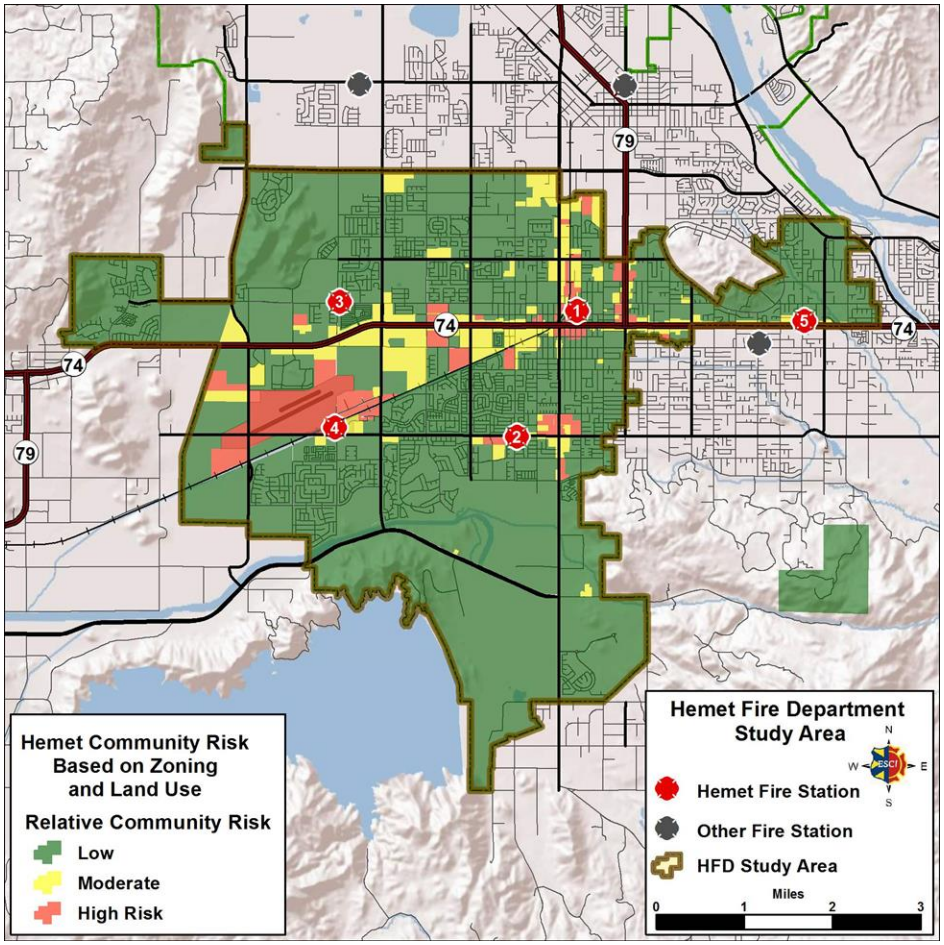
HFD's response time performance is depicted in the following graph. Note that the response time at the 80th percentile measures HFD's compliance with the City of Hemet Measure EE's performance standard of five minutes (80th percentile) for fire and emergency medical responses. The graph illustrates that neither the standards for Measure EE or NFPA 1710 are achieved.



RISK ANALYSIS

There are numerous risk factors that can influence the types of services a community needs. Population density is one such risk factor, population demographics another. The age of Hemet residents over the age of 65 is twice as high as the same age group in Riverside County, and nine percent higher than the national average for this age group. This poses numerous challenges for HFD, none the least of which is the high demand for EMS services.

Land use and zoning can also affect risk. The following map reflects low, moderate, and high risks by zoning and land use classification. It appears the zoning risk is clustered primarily in the downtown, airport, and Station 2 areas, with a predictable string along California Highway 74.



The wildfire risk within Hemet is low, however the city is surrounded by very high wildfire risk. Hemet does lie within a major seismic fault zone and has high liquefaction risk on the far west edge of the city, with very high liquefaction susceptibility in the southern region. The southern portion of the city, below Highway 74, is also susceptible to flooding as reflected in the 100 year and 500 year flood zones. There are a few small pockets north of Highway 74 that are also potential flooding zones.

RESPONSE TIMES & CRITICAL TASKS

ESCI identified numerous staffing and response configurations by incident type based on CFAI recommended critical task analyses. It is important to recognize, however, that each community poses its own unique geographical and response challenges. ESCI therefore recommends that the critical tasks by incident type recommended in this report be validated by HFD personnel. The recommended staffing levels may increase or decrease based on these validations.

National standards and consensus industry best practices call for each component of the "cascade of events" which make up a total response time (call processing, turnout time, and travel time) be measured. The aggregate of all three components should result in a six minute total response time for medical emergencies and a six minute, twenty seconds total response time for fires. These total response time objectives should be met in ninety percent of all emergencies.

These same standards and best practices also call for assembly of an effective response force (the minimum number of personnel and equipment to effectively mitigate the emergency) within ten minutes, thirty seconds ninety percent of the time.

RECOMMENDATIONS

ESCI has made twenty-five specific recommendations in the report addressing adjustments to current conditions and practices within HFD. A condensed list of the top ten recommendations include:

1. Establish three shift battalion chiefs to manage the three shifts of the HFD, returning the staff captains to the line.
2. Reposition Truck One to Station One where risk requires a truck and to address ISO criteria.
3. Establish a Peak Activity Unit, which is only in service during peak demand for service to augment fixed assets.
4. Monitor demand at Station One to avoid excessive Unit Hour Utilization.
5. Add a data analyst to monitor all components of the total response time continuum. Consider partnering with HPD to share their analyst.
6. Work with on duty crews to improve turnout time performance.
7. Monitor total response time performance by incident category, station response area, and for the overall HFD service area.
8. Establish response performance goals for each incident category, station response area, overall HFD service area.
9. Clarify the definition of "response time" as it pertains to Measure EE.
10. Conduct field validation exercises with HFD crews to verify or modify the critical task analyses for each major incident type.

SERVICE DELIVERY STRATEGIES

Numerous strategies for the future are discussed in this report. They are broken into four categories, followed by their descriptions as follows:

1. **Demand Reduction** (reduce calls for service)
    a. Develop CARES program to work with high frequency individual users of the 9-1-1 system.
        i. Partner with UC-Riverside's Sociology graduate program for interns.
    b. Develop Alternative Response Unit, staffed with one medic to handle non-emergent calls during peak demand.
    c. Address high frequency facilities individually or as a class of facilities.
        i. Encourage self-regulation of non-emergent calls.
        ii. A class of facilities could form a consortium to fund an ARU to offset first response costs to the system.
    d. Implement Community Risk Reduction strategy.

2. **Gained Capacity** (increase ability to provide existing services within existing budgetary constraints)
    a. Move Truck 1 to Station 1 for better response to target hazards and to address ISO criteria.
    b. Implement clear policies and procedures related to personnel leave which minimizes agency risk.
    c. Re-evaluate 48-96 work schedule.
3. **Partnership Opportunities** (share cost, increase revenue, or improve service)
    a. Negotiate a joint staffing agreement with CAL FIRE's Little Lake Station, eliminating Station 5.
    b. Implement or contract for Emergency Medical Dispatch services to send the correct resource to calls.
    c. Partner with HPD for AED use and data analyst.
    d. Partner with REMSA to "stop the clock" on EMS calls.
        i. Requires 100% ALS capability at each station.
        ii. Mirrors Riverside FD model.
        iii. Supports REMSA's strategic plan.
        iv. Revenue generation has potential to offset 100%+ costs.
4. **Enhance Operations** (improved supervision, improved service delivery, increased efficiency of deployment)
    a. Hire three credentialed battalion chiefs, returning staff captains to shift.
    b. Hire a deputy chief to manage all operational aspects, allowing the fire chief to administer the department.
    c. Implement Automatic Vehicle Locator (AVL) technology to dispatch the closest physical unit.
    d. Implement a Peak Activity Unit (PAU).
    e. Implement an Alternative Response Unit (ARU).

Many of these strategies can be implemented in the relatively near term, while others may take longer and require negotiation with other agencies or bargaining units before implementation. These strategies are described in greater detail within the report.

Evaluation of Current Conditions

To appropriately recommend service delivery options, a clear understanding of the current approach is required. This section of the report identifies the current conditions of the Hemet Fire Department (HFD or Hemet Fire). The following elements make up the current conditions: Citizen Feedback & Perspectives; Organizational Overview; Management Components; Staffing & Personnel; Service Delivery and Performance; and Capital Facilities and Equipment.

Each of the elements begin with an introduction, followed by a table of applicable information and data, followed by a discussion, and conclude with any pertinent recommendations. Within the table, the far right column is reserved for observations of the ESCI consultant, which may contain minor recommendations, considerations, or clarifications of the adjacent survey component.

CITIZEN FEEDBACK & PERSPECTIVES

Duirng ESCI's site visit, the consulting team interviewed numerous stakeholders, including policy-makers, line personnel, the labor group, citizens, and business interests. The policy-makers, line personnel, and labor groups all provided valuable information that allowed the consulting team to gain context into the issues that face the HFD. This context allowed the consulting team to focus its efforts in areas of common concern between the groups.

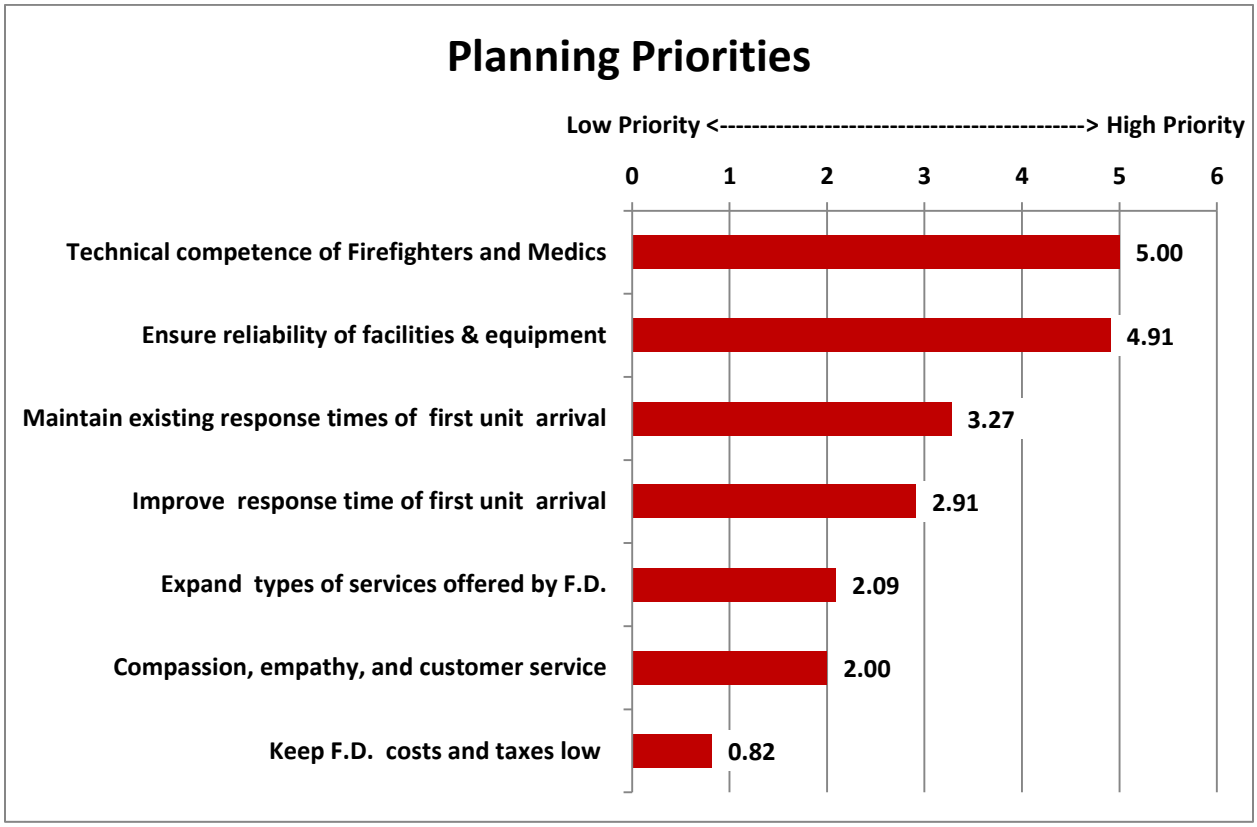
The citizen and business interest groups were interviewed as two separate groups and taken through a forced choice of various service issues to develop priorities as a group. The following results reflect their feedback and perspectives about the services provided by the HFD. The groups were necessarily small and not a statistically valid sampling of the community, but they do provide a barameter of the attitudes and opinions that may be felt to a larger degree throughout the community.

After an overview of typical fire department operations, the attendees were asked to prioritize the following planning elements:

1. *Keeping my fire department costs and tax rates as low as possible*
2. *Expanding the types of services offered by my fire department*
3. *Ensuring that facilities and equipment are reliable and functional*
4. *Maintaining the existing response times of the first engine or aid unit to arrive at a scene*
5. *Technical competence of firefighters and emergency medical personnel*
6. *Improving the response time of the first engine or aid unit to arrive at a scene*
7. *Compassion, empathy, and customer service of emergency responders*

They were asked to rate the importance of each element against the others, resulting in a collective set of planning priorities as follows:

Figure 1: Hemet Business and Citizen Planning Priorities



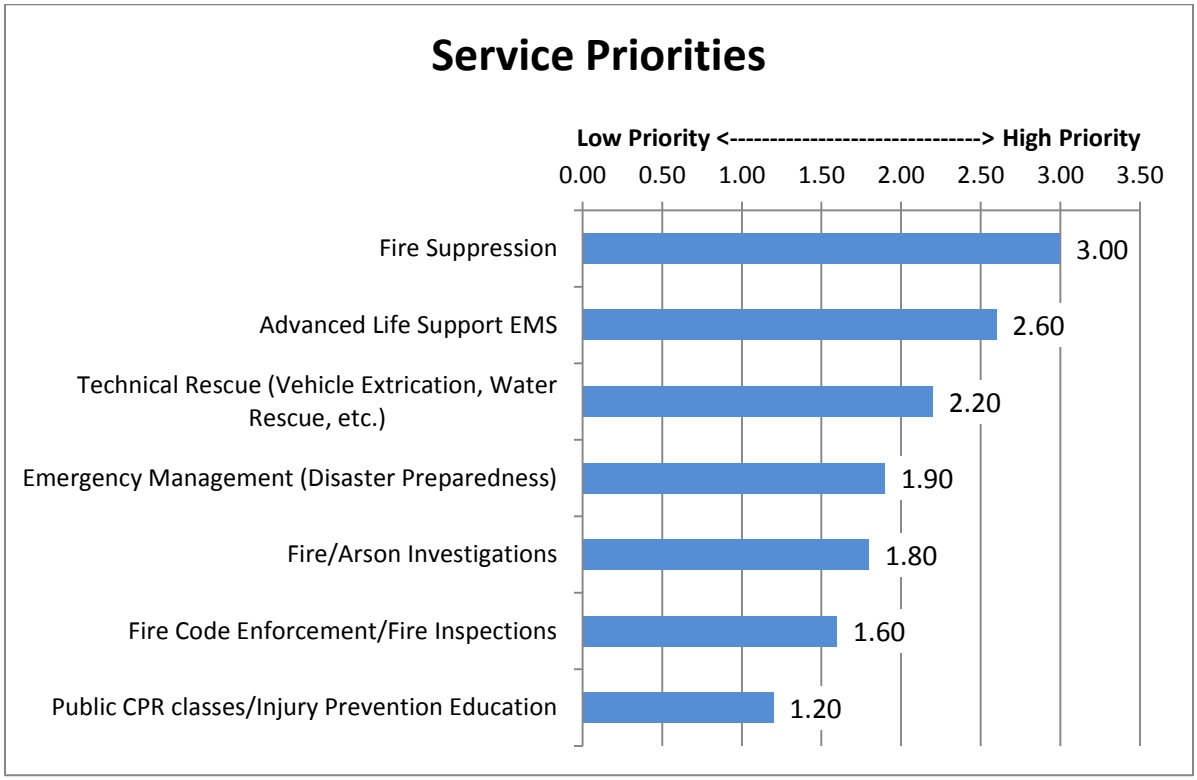
It is clear from the collective feedback that the external stakeholders in attendance placed high value on the technical competence of the responders in the HFD and in the investments already made in the fire department for facilities and equipment. There was greater priority placed on maintaining the existing response time than improving it. Interestingly, while there were some outliers, the vast majority were less concerned about keeping the costs and taxes low, although this should not be interpreted as a willingness to see costs and taxes increase.

The attendees were then asked to assign relative importance to several types of services provided by HFD. Those services are as follows:

1. *Fire Suppression*
2. *Advanced Life Support Emergency Medical Services*
3. *Fire Code Enforcement/Fire Inspections/Plan Review*
4. *Public CPR Classes/Injury Prevention Education*
5. *Technical Rescue (Vehicle Extrication, Water Rescue, etc.)*
6. *Fire/Arson Investigation*
7. *Emergency Management (Disaster Preparedness)*

The attendees were asked to assign a value for each type of service, with three representing a critical priority, two representing an important priority, and one representing a low priority. Multiple services may be assigned the same priority value. The following figure reflects the result.

Figure 2: Hemet Business and Citizen Service Priorities



Not surprisingly, fire suppression was clearly a critical priority, followed by Advanced Life Support Emergency Medical Services, which was rated as between a important priority and a critical priority. Technical rescue was listed closer to an important priority. All other services were listed as less than an important priority, with the majority rating public education as the lowest, slightly more than a low priority. It appears the consensus reflects emphasis on emergency mitigation, followed by preparedness/prevention, followed by self-help education. Participants were instructed to either add services where they thought it would be important, or strike through any service that should be discontinued. No new services were added, and only one participant struck through a service; Public CPR Classes/Injury Prevention Education.

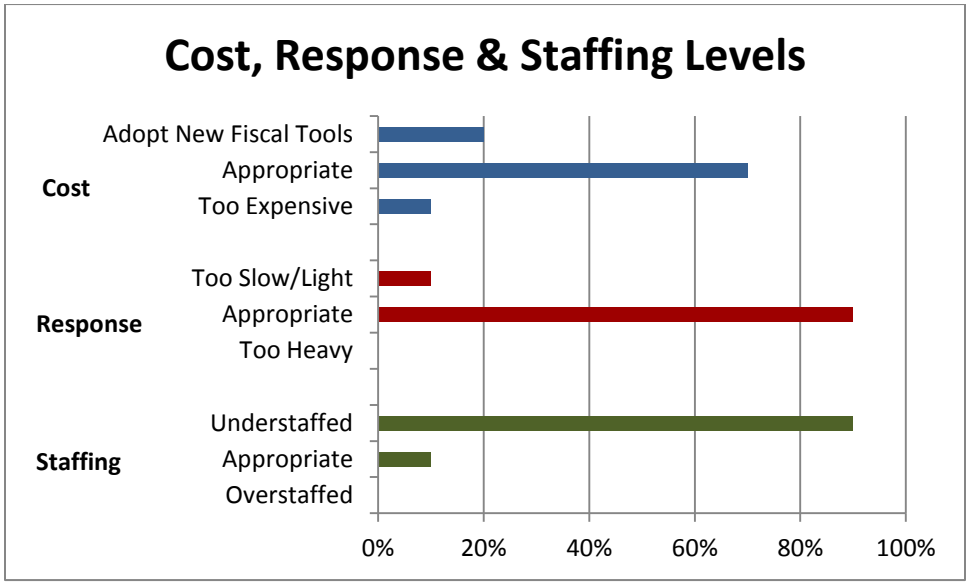
Finally, the attendees were asked to simply assert their beliefs regarding the HFD's level of staffing, response level (strength of response), and cost of services. The three choices available were:

Staffing Levels	Response Levels	Cost of Services
Overstaffed	Response too slow/light	Too expensive
Understaffed	Response appropriate	Appropriate
Staffed appropriately	Response too heavy	Adopt new fiscal tools*

*Examples: bond issues, excess levies, fees for service.

The results are reflected in the following figure.

Figure 3: Hemet Business & Citizen Views on Cost, Resposne & Staffing Levels



The majority of the attendees (70%) agreed that the cost for HFD services were appropriate, with a minority split between stating the service was too expensive and stating that new fiscal tools were needed. The latter response could be interpreted as advocating the augmentation of existing revenues with a new revenue stream or that the current revenue stream(s) is inappropriate or inadequate.

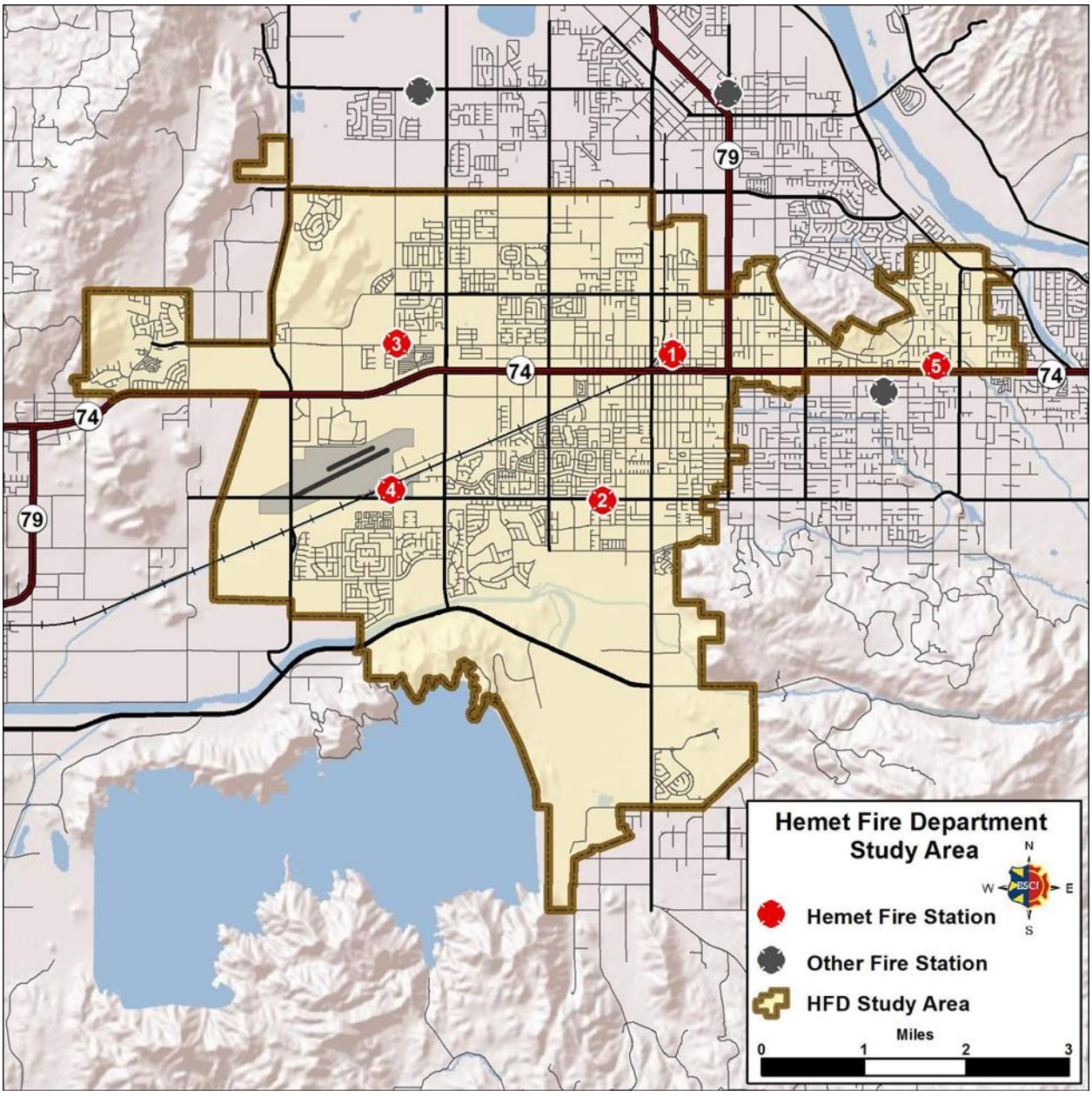
The majority (90%) also agreed that the HFDs response to emergency incidents was appropriate, with the minority stating that the responses were either too slow or too light (insufficient resources). None of the attendees stated that the response was too heavy. Finally, the majority (90%) agreed that HFD was understaffed, with the minority stating that the staffing was appropriate. None of the attendees stated that the department was overstaffed.

The open discussion following the structured group interviews resulted in an inevitable discussion about the fairly recent controversy regarding the concept of contracting fire service to CAL FIRE. The attendees were united in their support of local control and continuation of the Hemet Fire Department, but not, "… business as usual." There was strong advocacy for greater levels of efficiency and creative solutions to challenges facing the City of Hemet and the Hemet Fire Department. This aligns well with the perspective shared by Mayor Krupa during individual policy-maker interviews.

ORGANIZATIONAL OVERVIEW

The organizational overview contains a brief description of the governance and administrative structure of the Hemet Fire Department, the history of the HFD, a list of assets and personnel to perform the mission of the HFD, the general character of the community served, and the response demand the community places on their fire department.

Figure 4: Service Area Map



The organization overview tables include the following major headings: Responsibilities & Authority, Organizational Design, and Service Area & Infrastructure.

Figure 5: Responsibilities & Authority

Survey Components	Organization Overview	
	Hemet Fire Department	Observations
Responsibilities & Authority		
Governing body	City Council	
head of governing body	Council Manager	
key employee	Gary Thornhill, Interim City Manager	
meetings	Every 2 weeks, Tuesdays at 1900	
Elected official authority defined	Clearly delineated in city charter	
Fire chief position	Scott Brown – interim appointment on December 3, 2014	As of this writing, interim fire chief was appointed to the regular position
hired by contract	Yes	
term of contract	Being renegotiated as the regular appointee	
periodic performance evaluation	Verbal feedback from City Manager, biweekly	
Fire chief/authority defined	Clearly delineated in city charter	
Policy and administrative roles defined	Clearly delineated in Municipal Code, Chapter II, Article III, Section 2-87	

Discussion:

The City of Hemet is governed by a five member city council. The council is elected at large and, as in many municipalities, the five member city council annually elects a mayor from among the council members. Specifically, the city council is responsible for "…the enactment of local laws / ordinances, the adoption of the annual city budget and capital improvement program, and the review and adoption of proposed policies, agreements, contracts, and other city business items."[1]

The city council hires a city manager to manage the day-to-day affairs of the city through various departments, of which the fire department is one. Each department is managed by a department director or, in the case of the police and fire departments, a chief. HFD's history reflects significant turnover in the fire chief position over the last several years, with some incumbents not meeting professional qualifications for the position (appointed from captain). This occurred during the run-up to the city considering contracting with CAL FIRE for services and eliminating the Hemet Fire Department. This has created instability and credibility issues within the fire department.

The fire chief position was vacant until December, 2014, when Scott Brown was contracted to fill the interim position. Once Chief Brown was contracted, he recommended this study be sanctioned by the city council. Shortly after the initial site visit was conducted by the ESCI consultants, the incumbent city manager left employment with the City of Hemet and the Hemet Police Chief was appointed to serve as

[1] "Welcome to an Engaged Community." Hemet, CA. Web. 26 June 2015. <http://www.cityofhemet.org/index.aspx?nid=65>.

the interim city manager. Immediately thereafter, Chief Brown was appointed to the regular position of fire chief, followed by the hiring of a new interim city manager.

The fire chief had received verbal feedback from the city manager every other week in sessions the fire chief scheduled. The purpose of the meeting was to provide updates to the city manager on progress of the fire chief's 120 day action plan.

The authority of the fire chief (Ordinance #28), the city manager (Municipal Code -- Chapter II, Article III, Section 2-86) and the city council (Municipal Code – Chapter II, Article II) is clearly articulated in the city's charter. Regarding the authority of the fire chief and the establishment of the fire department, ESCI recommends review and revision of the enabling ordinance to establish a contemporary understanding. The enabling ordinance was established on October 5, 1910 and has not been revised.

Figure 6: Organizational Design

Survey Components	Organization Overview	
	Hemet Fire Department	Observations
Organizational Structure		
Structure type	Very flat hierarchy	
Description of all jobs maintained	Current as of 2014	
job descriptions updated	Yes	
Employment agreements	CBA with Local 2342; Emergency Operations Coordinator	
Chain of Command		
Unity of command	Follows organizational chart and chain of command	
Span of control	Fire chief span of control is 1:9 (includes staff captains, shift captains at each station, part time prevention and part time emergency management staff)	Exceeds industry standards of between 1:3 and 1:7
Hiring/Firing authority	City Manager for department heads, fire chief for line personnel	
Formation		
Organization formed	1908	
History maintained	Yes	
Individual/group responsible	Hemet Firefighters Association, Local 2342	

Discussion:

The Hemet Fire Department has a very flat hierarchy, as reflected in the organizational chart in the following figure. The fire chief has no exempt subordinates to delegate command authority to, assisted only by a civilian administrative assistant. Some captains are assigned some administrative duties, but are at the same level as their shift captain counterparts. The administrative captains are not credentialed at the command level, increasing city liability and firefighter safety. Training duties appear to be performed in between incidents and are not conducted by a credentialed training officer. Fire prevention duties are limited to a contract fire marshal conducting business inspections and plan review on a part time basis. The rate of occurrence for these inspections is unable to meet Insurance Services

Organization (ISO) frequencies. The effect negatively impacts the public protection classification in Hemet. This has the potential to increase private property insurance premiums.

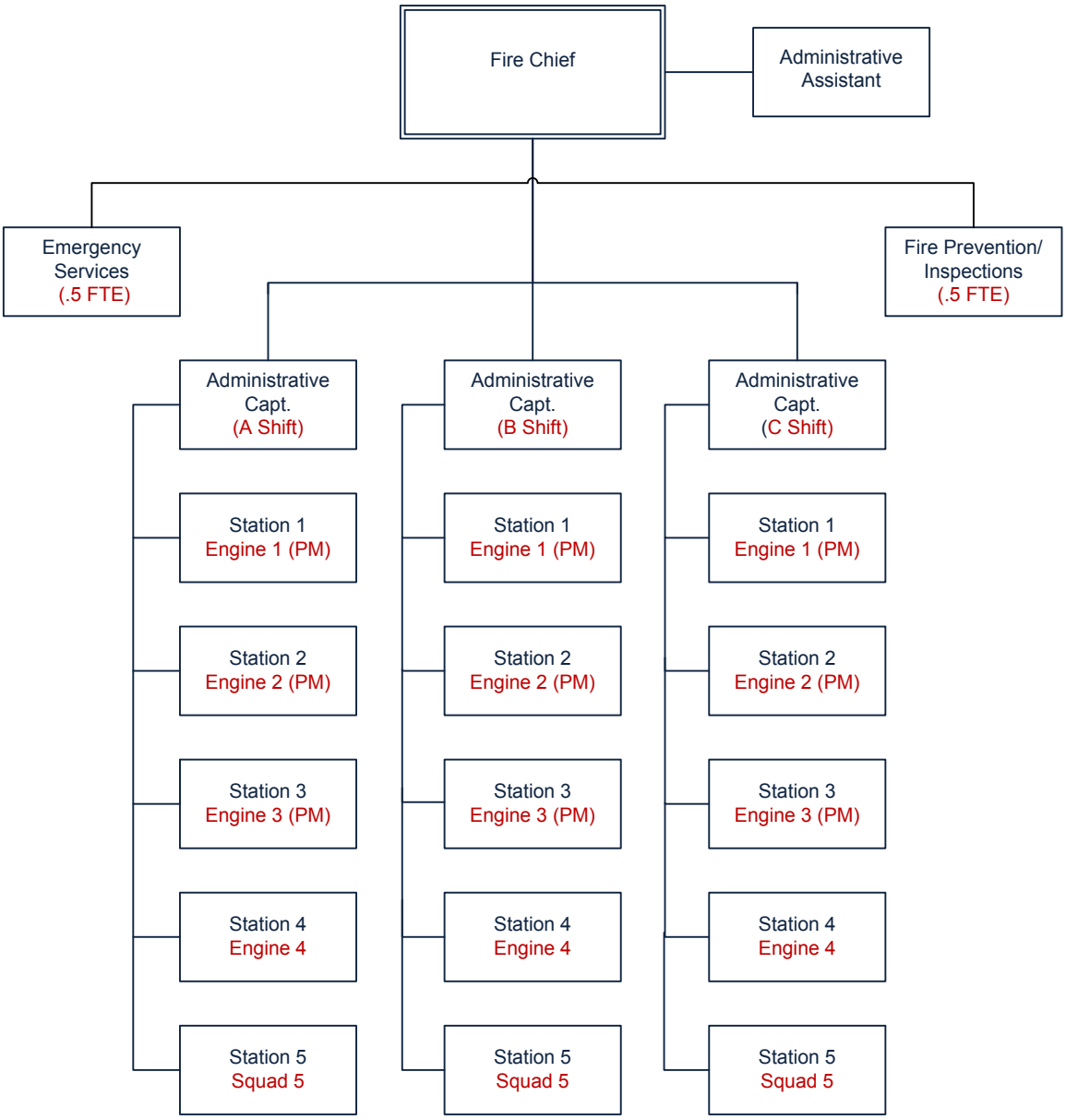
All position descriptions within the HFD has been reviewed and updated as recently as 2014. The department has a chain of command which followed the organizational chart. The span of control is appropriate at the line level, with a 1:3 ratio of officer to subordinate. Above the line personnel, the span of control exceeds an appropriate level due to the lack of shift command positions or administrative command positions. The fire chief supervises three administrative captains and four shift captains on each of three shifts, plus he is part-time/contract fire marshal and emergency manager. With a 1:9 ratio, it far exceeds the upper limit of an appropriate span of control. The span of control should be between 1:3 and 1:7. The fire chief has authority to hire and terminate, and is subject to city policies and work rules.

The HFD was formed on July 29, 1908 by the Hemet Chamber of Commerce. The City of Hemet incorporated in 1910 and absorbed the HFD as a city function. The Hemet Firefighters Association, Local 2342 continues to maintain the history of the department on behalf of the city.

RECOMMENDATIONS:

- Replace administrative captains with credentialed battalion chiefs.
- Provide an exempt staff chief officer to oversee Emergency Operations & Support Services.
- Expand fire prevention to include community risk reduction strategies.

Figure 7: Hemet Fire Department Organizational Chart



Unit Staffing:
Engine 1, 2, and 3 = Captain, Engineer, Firefighter (one of which is also a Medic)
Engine 4 = Captain, Engineer, Firefighter
Squad 5 = Engineer, Firefighter

Figure 8: Service Area and Infrastructure

Survey Components	Organization Overview	
	Hemet Fire Department	Observations
Agency Description		
Agency type	Municipal	
Area, square miles	27.85	
Headquarters	510 W. Florida Street, Hemet	
Number of fire stations	5	
Other facilities	2 (administrative office, training facility – classrooms only)	
Emergency vehicles		
engine	4	
engine, reserve	3	
ladder truck	1	
squad unit	1	
squad unit, reserve	0	
command	2	
boat	0	
tenders/brush	1 type III engine	
rescue	1 OES rescue	
support vehicle	2 (pick-up trucks with canopy)	
ISO rating	4/9	
date of most recent rating	Over ten years ago (being rerated currently)	
Total F.D. uniformed and civilian personnel	48 + 1 shared volunteer with Engineering	
Demographics		
Population	81,750 (2013 census estimate)	
urban/suburban/rural %	Predominantly urban (3,189 pop. per square mile)	
Total residential units	35,305	
Businesses	3,095 (businesses with payrolls)	
Alarms		
Fire, 2014	266	
value of property exposed to fire, 2014	$11,235,990	
value of property lost to fire, 2014	$1,533,005	
Rupture or explosion	4	
EMS/rescue	12,354	
Number of EMS transports	0	
Hazardous condition	155	
Service call	954	
Good intent call	625	
False call	345	
Severe weather	22	
Other	3	
Total	14,728	
Mutual Aid		
Given	23	
Received	39	

Discussion:

The Hemet Fire Department is a municipal department serving approximately 28 square miles and an estimated population of 81,750 (2013 census estimate). As of 2010, there were 35,305 housing units in Hemet. The age of the population of Hemet that is 65 or over was 22.4% of the total population, significantly higher than the national average of 7.3%. Families with a child under eighteen living in Hemet make up 29.6% of the population, slightly higher than the national average of 28.8%.

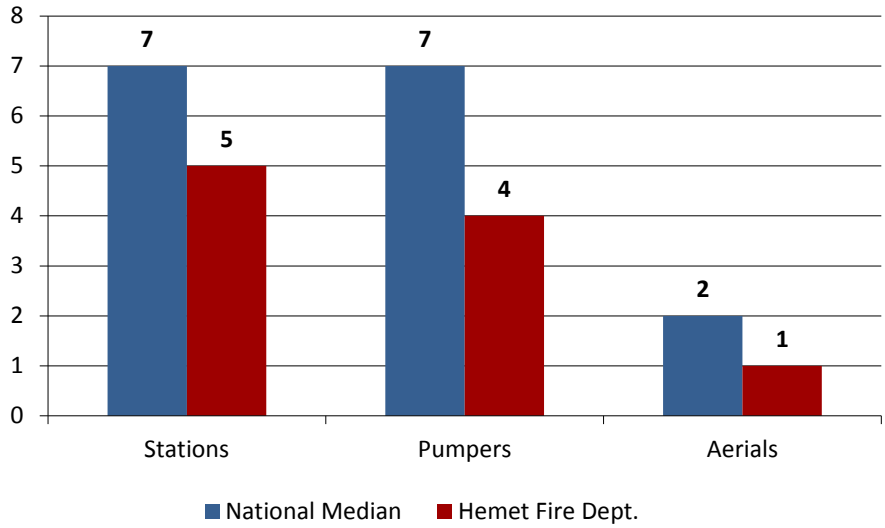
The HFD has seven facilities and operates out of six of them. Five are fire stations, strategically positioned throughout the city for response coverage. The sixth is the administrative headquarters, shared with the Engineering Department. The seventh facility is a training building, which is unstaffed but accommodates classroom-style training.

The department delivers service from various types of emergency vehicles, from fire engines to ladder trucks to squads. The fire engines listed in the table are referred to as type I engines, which are equipped as the primary response unit due to its versatility. They are designed to pump water at a structure fire or other fires located on a roadway or other hard surface. They carry fire hoses of various dimensions to address small or large water needs; a small complement of ground ladders for rescues and access to two- and three-story buildings; extrication equipment; a small complement of forcible entry equipment; ropes and small tools for various applications; and medical equipment for emergency medical incidents.

Ladder trucks are intended to provide heavy duty equipment for forcible entry, extrication, technical rescues, and a hydraulic ladder for rescues from upper floors and as an elevated stream for large fires. While the ladder is an important component, it is the equipment on the truck and the crew expertise that makes a ladder truck so critical for certain incidents. It also carries medical equipment, but should be used as a last resort response unit for medical emergencies due to its weight and expense per mile to operate.

The HFD is significantly under-resourced as compared to their regional counterparts. The following figure reflects lower numbers of fire stations, fire engines, and ladder trucks than their western peers. This is an indication that the ability to mitigate significant fire and rescue incidents is hampered by the relatively low number of critical resources. It also tends to reflect a longer travel time from fire stations spaced further apart than their peers and fewer resources arriving within the critical first ten minutes of an incident. Finally, the spacing of facilities and equipment may negatively impact Insurance Services Organization (ISO) Public Protection Classification (PPC) ratings. This rating is what most insurance companies base their insurance premiums on for privately insured properties. Significant declines in a PPC can increase individual taxpayer insurance premiums and for businesses that are not self-insured. The ISO rates three major areas: Receiving and Handling Fire Alarms, the Fire Department, and Water Supply. Within these major areas are subcategories. In Hemet Fire Department's last rating, the lowest scoring dimension was in *Credit for Inspection and Condition* (of the water system), which received only 23.67% of the possible credit. The next lowest scoring dimensions were in *Credit for Reserve Ladder and Service Trucks* (29%), *Credit for Training* (47.44%) and *Credit for Company Personnel* (50%).

Figure 9: Comparison of Resources per 1,000 Population

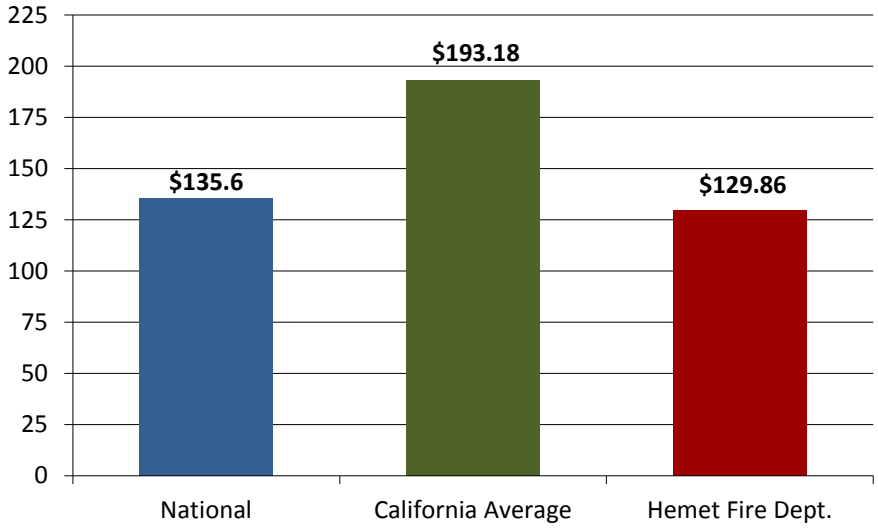


The remaining primary response vehicle in Hemet is a squad unit, which is usually a pick-up truck cab with a utility box or flat bed in the back. The squad unit can come in numerous configurations, such as a small pump and water tank with initial attack or forestry hose for fighting car-, dumpster-, brush-, and other small fires. It can simply have medical, extrication, and light rescue equipment on it. The squad in Hemet is used as a first response advanced life support (paramedic) medical unit, delivering medical equipment and personnel to a medical emergency.

HFD has assorted support vehicles as well, including staff vehicles, an Office of Emergency Services (OES) rescue unit, and a fire engine, referred to as a type III wildland fire engine. It carries a similar amount of water as a type I engine, but less fire hose, no ladders and is designed to fight wildland fires off-road. The reserve units are intended as back-ups and are placed into service in the event of mechanical failure or routine scheduled maintenance of the primary unit. HFD has an appropriate number of reserve fire engines. Other specialty vehicles, such as the ladder truck, should have a back-up plan in the event they are placed out of service for an extended period of time. The back-up plan can be as simple as a reciprocal automatic response agreement with a neighboring agency operating similar types of units.

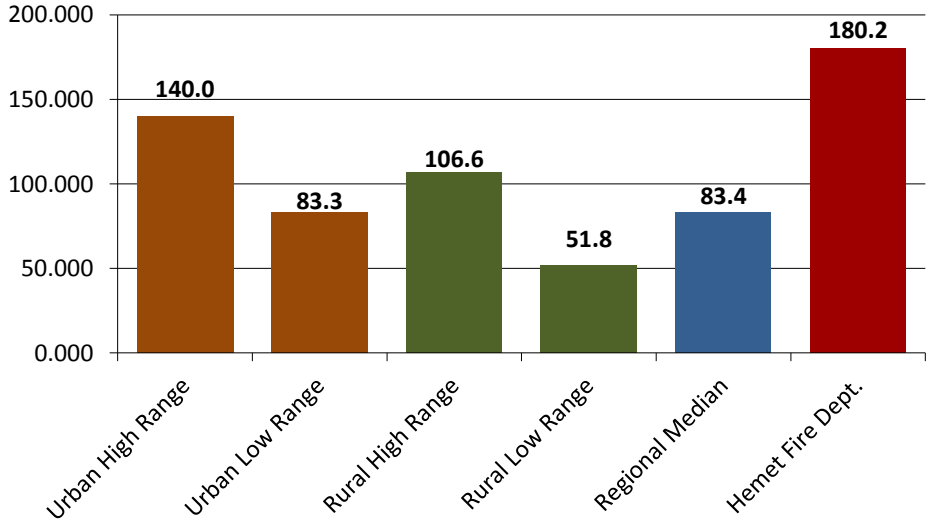
The relatively low resources for Hemet is likely what drives the cost for service down. The following figure illustrates that HFD's taxpayers are paying one third less than cities of similar size in California and just under five percent less than their national counterparts of similar size.

Figure 10: Comparison of Cost Per Capita for Fire Services



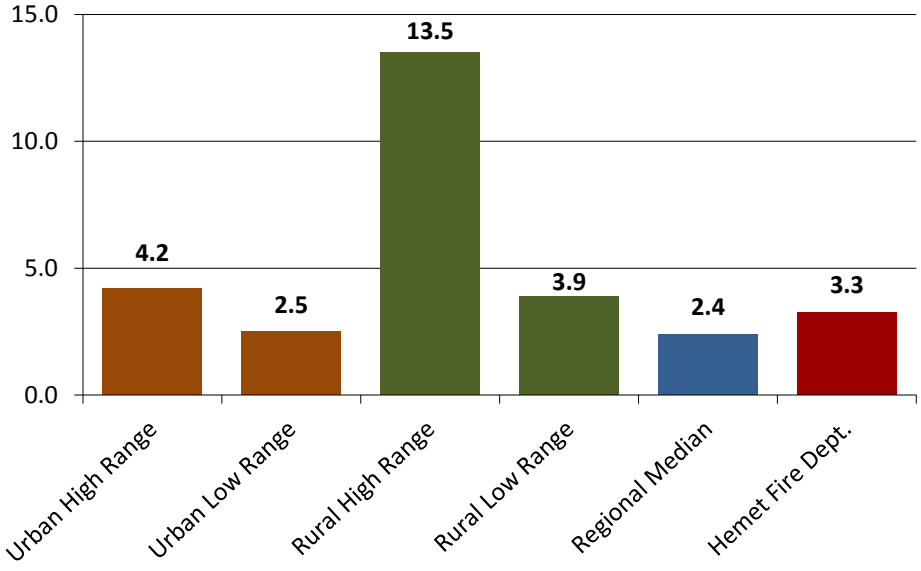
The HFD is an exceedingly busy fire department as compared to National Fire Protection Association data for the Western Region of the United States, with more than double the number of total emergency incidents of fire departments its size on the west coast as reflected in the following figure. Compared to the number of fires per 1,000 population (subsequent figure), it is clear that the emergency incident driver is predominantly emergency medical incidents. More analysis of responses is found in the *Service Delivery & Performance* section of this report.

Figure 11: Comparison of Incidents per 1,000 Population



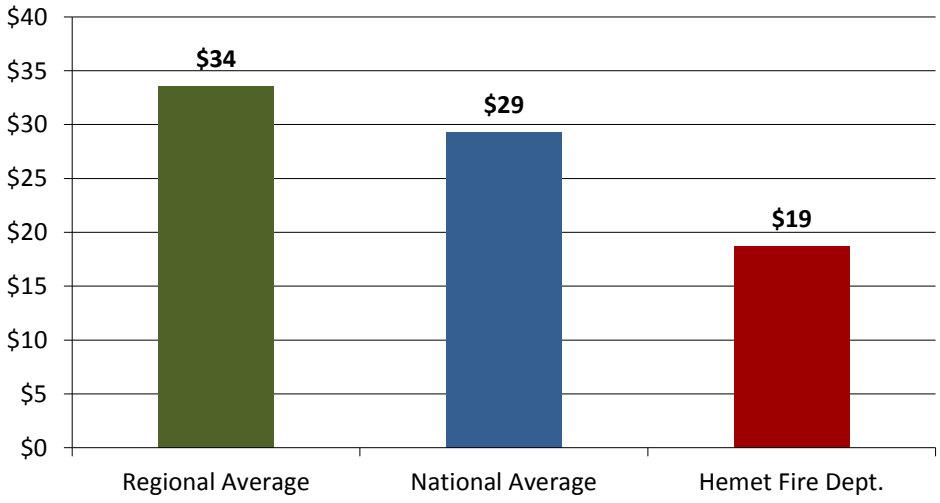
The number of those incidents that are fire related is only slightly higher than the regional median, as depicted in the following figure. This is much lower than Hemet's rural counterparts in the region, most likely due to the frequency of brush and wildland fires in the more rural areas.

Figure 12: Comparison of Fires per 1,000 Population



The property values lost due to fires in Hemet are low compared to the national and regional averages. This is despite a marginally higher frequency of fires in Hemet than their regional counterparts. This may be a reflection of lower overall values of the property exposed to fires in Hemet, or a higher frequency of extinguishing the fires in their incipient phase (initial stage of fire growth).

Figure 13: Comparison of Fire Loss Per Capita



MANAGEMENT COMPONENTS

The management components consist of a brief description of the elements which make up a strategic plan for an agency; the mechanisms used to communicate internally and externally; the critical issues facing the department from the perspective of the fire chief; records management; the security of buildings, apparatus and information; and plans for the maintenance or replacement of capital assets.

The management component tables include the following major headings: Strategic Planning, Regulatory Documents & Communication, and Records & Asset Protection.

Figure 14: Strategic Planning

Survey Components	Management Components	
	Hemet Fire Department	Observations
Strategic Planning		
Mission statement adopted	Mission statement exists, but has not been reviewed or revised for an estimated ten years	Would be addressed via a strategic plan
displayed	Yes – on the walls of offices in the admin building	Should be removed
Vision established and communicated	Vision statement is approximately ten years old but not reflective of the current conditions at HFD	Would be addressed via a strategic plan
Values of staff established	Yes, posted on wall in admin building	Should be removed
Strategic or master plan	Significantly outdated strategic plan exists, but is based on a decade old version of Hemet FD – which no longer exists in that form (much smaller version today)	Replace strategic plan with a new one, reflective of today's HFD
adopted by elected officials	N/A	
published and available	No	
periodic review	Plan has been suspended for several years – reductions in force has occurred as opposed to the strategic plan's goal of increases in staffing	
Agency goals and objectives established	Not valid	
date developed	N/A	
periodic review	N/A	
Code of ethics established	No	Establish a code of ethics or code of conduct

Discussion:

Undoubtedly due to the churn that has occurred in the fire chief position, the strategic plan is ten years old and is therefore outdated and invalid. Strategic plans guide the priority of work to be done by an agency for a period of three to five years. The last strategic plan established goals for growth and expansion; the opposite direction the HFD has been going. Three critical components within a strategic plan help provide that broad guidance: a mission statement (why the organization principally exists), a vision statement (what does the organization want to become), and the values or guiding principles of the organization (how do we treat each other and the public). These three documents are prominently posted around the fire department. Due to their age and the direction the fire department has taken since they were created, the documents (especially the vision statement) are inconsistent with the direction HFD has gone.

While the mission statement of an organization normally does not change significantly over time, it is worthwhile to review the mission statement contained in the last strategic plan to validate or modify it. Until such time as it is validated, the existing mission statement should be removed from display to avoid confusion. A vision statement should be created by fire administration after consultation with the city council and active involvement of line personnel. Finally, the organizations values or guiding principles should be crafted with active involvement by the fire department staff and administration. These core elements, coupled with establishing strategic initiatives, goals and objectives which sets the course for HFD for the next three to five years are all accomplished by embarking upon a strategic planning process.

A master plan is not in place in the HFD. A master plan evaluates the community's growth potential and growth patterns, determines where services will be impacted by that growth, and assists in determining when modifications to the existing resource deployment are necessary to meet the expected new demand for services. This would include fire station placement, fire apparatus assignments at the fire stations, and staffing for those units. Failure to plan ahead for expected growth places an organization and a community behind the growth curve. It then becomes an expensive catch-up process to meet new demands after the fact. In the meantime, services decline since demand grows and resources stay stagnant.

A code of ethics or code of conduct is not in place at HFD. This is an important document in that it goes hand-in-hand with the values established by a strategic plan. This document should be created after the values or guiding principles have been created. The document makes clear what the standards of behavior are and further focuses the values or guiding principles.

RECOMMENDATIONS:

- Remove mission, vision, and values posted throughout the fire department until they are validated or replaced.
- Develop a current strategic plan to guide the HFD for the next three to five years.
- Develop a master plan for the next ten to twenty years.
- Establish a Code of Ethics or a Code of Conduct.

Figure 15: Regulatory Documents & Communication

Survey Components	Management Components	
	Hemet Fire Department	Observations
Regulatory Documents		
Copies of rules provided	Yes, in M.O.O. (Manual of Operations)	
last date reviewed	In process, at least two years old	
Copies of SOPs or guidelines available	Yes, in M.O.O.	
regular update	In process, at least two years old	
SOPs used in training evolutions	Concepts are applied	
Policy manual available	Yes, in M.O.O.	

Survey Components	Management Components	
	Hemet Fire Department	Observations
reviewed for consistency	Yes, consistency, currency, and applicability	
reviewed for legal mandates	Yes	
training on policies provided	No	Conduct policy training to ensure adherence
Critical Issues		
Critical issues are identified		
first critical issue	Firefighter Safety	
second critical issue	Operational Readiness	
third critical issue	FD's ability to meet its mission mandate	
Communication		
Internal communications		
regularly scheduled staff meetings (fire department)	Periodic, demand driven	
written staff meeting minutes	Updates and recaps	
memos	Yes	
member newsletter	Department-wide report on conditions	
member forums	No	
open door policy	Yes	
vertical communication path clearly identified (C of C)	Yes	
External communications		
community newsletter	No	Consider inserting a newsletter into utility bills to communicate with citizens on HFD activities
website	Yes	
advisory committee(s)	Yes	
complaint process	Yes	
community survey	Yes	
Decision Making		
Preferred management methodology of the fire chief	Participatory management all levels; focus is empowerment and personal accountability	

Discussion:

The HFD uses a Manual of Operations which contains rules, regulations and standard operating procedures. The fire chief reports that the manual is being reviewed and revised as appropriate, and the existing manual is at least two years old. It is an industry best practice to establish a reviewing cycle for such documents. For voluminous regulatory manuals, dividing them into thirds with each third reviewed on a triannual basis is an acceptable approach. The manual is reviewed for legal mandates but policies are not actively trained on by line personnel. This is likely due to the lack of a dedicated training officer who could preprogram this type of refresher activity as part of the training curriculum.

The fire chief has identified the top three critical issues facing the department:

1. Firefighter Safety
2. Operational Readiness
3. HFD's ability to meet its mission mandate

In discussing these issues more deeply with the fire chief, the safety concern has to do with a high emergency response demand coupled with a stagnant resource base to provide those services. ESCI would add that the high demand coupled with a 48-96 work schedule places an extreme burden on shift personnel. Without assured opportunity for crews to rest during a 48 hour shift, fatigue causes an increased likelihood of mistakes. The consequences of these types of mistakes can be life-altering. However, creating opportunity for crews to rest also reduces productivity in non-emergent activities that are none-the-less important.

Operational readiness, which is a combination of crew-readiness and equipment-readiness, includes proper distribution of adequate resources. Crews must be properly trained, configured in proper crew size, in condition to function at peak levels (see discussion on firefighter safety above), on the correctly designed apparatus for the mission, and with enough of those crews and proper apparatus that the mission (incident mitigation) can be accomplished.

Combining the factors of firefighter safety and operational readiness determines how well HFD can achieve its mission mandate. In order to increase HFD's ability to meet its mission mandate, the demand per crew must be reduced and the crews kept fresh and productive. This can be accomplished a number of ways. Examples include: shifting low acuity (low priority) response demand away from HFD, increasing the number of crews available, reducing the shift hours worked, or reconfiguring how units are deployed.

Internal communication at HFD is as robust as is reasonably possible considering the lack of administrative staff to conduct administrative work and routinely communicate with the line personnel on daily activities and issues of importance to its members. Improvement can be gained with the addition of a staff chief officer to address internal operational issues, allowing the fire chief to address administrative, executive, legislative (city council), and external matters. External communication is conducted passively (the HFD website and complaint process) and actively (post incident surveys and advisory committees).

The fire chief's preferred management style is participatory, with employees equipped and empowered to make decisions as appropriate, along with the accountability that goes with empowerment. The chief's philosophy is to essentially prepare subordinates to operate at a higher level, create opportunity for them to seek greater levels of authority and responsibility, and hold them accountable for the decisions they make and actions they take.

Figure 16: Records & Asset Protection

Survey Components	Management Components	
	Hemet Fire Department	Observations
Document Control		
Process for public records access established	Yes	
Hard copy files protected	Yes, locked in Admin. Asst. office	
Computer files backed up	Yes, backed up on cloud and separate drives	
Security		
Building security	Yes, locked – no monitored alarms	
Office security	Keyed locks or electronic keypads	
Computer security	Yes, passwords	
Vehicle security	Yes	
Capital inventory maintained	Yes	
asset security system used	Yes, but could be improved	Implement scannable bar code asset tag system
inventory interval	Supposed to happen on an annual basis, but has been inconsistent	Conduct annual inventory of all assets
Monetary controls used		
cash access controls	Yes, no petty cash on hand	
credit card controls	Yes	
purchasing controls	Yes, identified by city policy	
Reporting and Records		
Records kept by computer	Yes	
operating system	Windows 7, in process of upgrading	
Periodic report to elected officials		
financial report	Finance department performs this	
management report	Yes, HFD provides management reports	
operational report	Yes, HFD provides operational reports	
Annual report produced	No	Consider publishing an electronic annual report – upload to website
distributed to others	N/A	Consider wide distribution electronically
analysis of data provided	N/A	Include analysis of data aimed at lay-persons
Required records maintained		
incident reports	Yes	
patient care reports	Yes	
exposure records	Yes	
SCBA testing	Yes	
hose testing	Yes	
ladder testing	Yes, contracted out	
pump testing	Yes	
breathing air testing	Yes, third party	
vehicle maintenance records	Yes, maintained by fleet services	

Survey Components	Management Components	
	Hemet Fire Department	Observations
gas monitors calibrated	Yes, contracted out	
Planning		
Capital improvement plan	Yes, underfunded	Identify facilities remodel/replacement needs and funding mechanism
plan period	Four year plan programmed by fiscal year	
periodic review	Annually	
projects	Security upgrades to station 2, drainage upgrades at station 5, individual station R&M	
funding	Development fees, occasional general fund investments as per council discretion	
Apparatus & equipment replacement plan	Yes, five year increments – individual replacement is unclear	Base apparatus replacement schedule on NFPA 1911 standards and replace them following NFPA 1901 standards
plan period	At least five years	Optimally, replacement plan should span 20 year horizon
periodic review	Annually	
projects	2 Type I engines planned to be ordered this year	
funding	Reserves set aside	Reserve contributions should match projected replacement plan

Discussion:

The security of facilities, offices, hard files, and computer systems is appropriate. Asset management could be strengthened, since not all assets are marked and inventoried annually. Asset tags or in some cases equipment serial numbers can be used on "attractive assets." Many agencies define attractive assets as equipment or items that fall below the capitalization threshold of $5,000 and are not included in the agency's financial statements. An annual inventory of these valuables is not regularly performed to account for the assets. All attractive assets should be tagged and listed on an inventory, facilitating an accurate list from which to conduct annual physical inventories.

Appropriate monetary controls are in place. Cash purchases are not typically conducted, instead credit cards (purchase cards) with low credit limits are provided to key employees only. Purchase controls are in place in the city with appropriate separation of duties between the purchase approval, ordering, receipt, and payment of the expense.

Regular financial, management and operational reports are provided to the city council. While the city council meetings are open to the public and broadcast to the community, it is most effective to proactively reach out to the community to keep them informed of the activities affecting their fire department. An annual report is how most fire departments connect with and inform the community. This can be done inexpensively by creating an electronic annual report, providing it to the city council,

posting it on the fire department website, and informing the community of its availability. This can be done by inserting an informational flyer into a utility mailer or one of the many mailers the city sends to its citizenry. The flyer advises citizens of the existence and location of the annual report on the website, inviting the public to review it.

All of the various records required for personnel and equipment maintenance and testing are maintained either by HFD or by a third party/contracted service provider. Hose testing and pump testing can also be contracted out and are appropriate considerations given the emergency demand placed on existing employees.

Capital facilities and equipment planning and funding is incomplete. As mentioned earlier in this report, a master plan identifies major facilities impacts of future growth for a twenty year period. This plan can serve to guide future major facility expenditures, allowing the city to plan for the funding of those major expenses.

Likewise, major equipment purchases, such as fire engines, ladder trucks, water tenders and other specialty equipment should be placed on a twenty year planning cycle with scheduled replacement based on criteria. Time is not the only determinant for apparatus replacement. By monitoring hours and/or mileage and repair and maintenance history for each apparatus, the HFD can extend or reduce the lifespan of specific apparatus, determining when and if a piece of equipment should be moved to a lower utilization station or into a reserve capacity. In any event, it is important to follow the guidelines of NFPA 1911 in planning to replace any apparatus. Replacement vehicles should follow NFPA 1901 standards.

RECOMMENDATIONS:

- Establish a bar code asset tag system to facilitate annual inventory of attractive assets.
- Conduct an annual inventory of all attractive assets.
- Establish a twenty year Capital Facilities Improvement plan and identify likely funding sources (i.e., bond).
- Establish a twenty year Equipment Replacement plan and identify likely funding sources (i.e., annual contributions to reserve, lease, and bond).

STAFFING

The staffing and personnel section consists of a brief description of the policies, rules and regulations which guide personnel behavior; human resource records; disciplinary procedures; employee counseling services; application processes; promotional testing; employee health and safety; staffing levels of administrative and operational services; and activities and assignments of personnel.

The staffing and personnel tables include the following major headings: Personnel Regulatory Structure, Employee Hiring, Evaluation and Promotion, and Staffing Levels & Activities.

Figure 17: Personnel Regulatory Structure

Survey Components	Staffing & Personnel	
	Hemet Fire Department	Observations
Policies, Rules, Regulations, and Operational Guidelines		
Human resource manager	Laura Ireland	
Personnel policy manual maintained	Yes	
manual provided at initial hiring	Provided as part of new employee orientation	
training provided	Yes – during new employee orientation	
periodic review & update	Yes – by HR in consultation with applicable department	
Retention program established	No	Retain old policies for litigation defense
Reports and Records		
Personnel records maintained	Yes	
application retained	HR handles this	
historical records archived	HR follows archive regulations	
performance evaluations retained	Yes	
injury and accident records retained	Yes	
health and exposure records maintained	Yes	
Disciplinary Process		
Disciplinary policy established	Yes, policy and training on implementation via a handbook	
Disciplinary process communicated	Yes	
Appeal process provided	Yes, through policy and MOU	
recent litigation	No	
pending litigation	Not aware of any	
Counseling Services		
Critical incident stress debriefing	Yes, as requested by crew supervisor	
Employee assistance program	Yes, administered by third party	
Intervention program	Yes, administered by third party	

Discussion:

As a municipal department the HFD relies upon the Human Resources (HR) Department of the City of Hemet to manage personnel regulations and policies. Because of the unique nature of emergency services, many of the city policies related to city employees must carve out exceptions or specific additional regulations for the fire service and law enforcement. For example, all non-exempt employees are required to meet the federal Fair Labor Standards Act (FLSA), which requires overtime for hours of work exceeding forty hours per week. However, non-exempt fire service employees are eligible for the 7k exemption in FLSA. This extends the overtime threshold from forty hours in a seven day cycle to 53 hours in a seven day cycle.

The city HR Department maintains a personnel policy manual and provides orientation training to new employees. The policies are reviewed from time to time with appropriate department heads to ensure they are up-to-date. Policies which are updated replace the old policy. The rescinded or revised policies should be archived in the event future litigation occurs which might require review of the policies which were in place at the time.

A disciplinary process is in place through HR and the fire department, with employees being informed of the disciplinary procedures. The appeals process for employees is also contained within the policies and through a Memorandum of Understanding (MOU) with the collective bargaining unit. There has not been any recent litigation, or any pending actions.

HFD has in place an Employee Assistance Program (EAP) for all employees seeking counselling services for on or off the job stressors. Included in this program are intervention services. Critical Incident Stress Debriefings and Defusings are provided as requested by supervisors. These are typically requested after a particularly gruesome or emotionally charged incident which creates, as a single incident or cumulatively, stress that affects job performance or interferes with normal life activities.

RECOMMENDATIONS:

- Retain policies that have been rescinded or revised in archives to use for any potential future litigation defense.

Figure 18: Employee Hiring, Evaluation & Promotion

Survey Components	Staffing & Personnel	
	Hemet Fire Department	Observations
The Application and Recruitment Process		
Recruitment program	Demand driven, no set schedule	
Application process		
qualification check	Yes, third party investigator	
reference check	Yes, third party investigator	
background check	Yes, third party investigator	
physical standards established	Yes, In writing – CPAT test (third party)	
knowledge testing	Yes	
interview	Yes	
medical exam required	Yes	
psychological exam required	Yes	
Testing, Measuring and Promotion Process		
Periodic competence testing	No (certifications notwithstanding)	
Periodic physical competence testing	No	Consider implementing annual pack test
Periodic performance review	Yes	
Promotional testing	As needed, demand driven	
Health and Safety		
Medical standards established	None found	
periodic medical exam	Yes	
Safety committee established	No	Establish safety committee
membership	N/A	Employee/employer membership balance
meetings	N/A	Initiate monthly initially, then quarterly
meeting minutes	N/A	Keep and publish minutes of safety meetings

Discussion:

Competitive testing is conducted to create an eligibility list for prospective new firefighters as the need arises (when vacancies occur or are expected). Applicants are thoroughly screened via a third party investigator to determine that all candidates meet the minimum qualifications, and pass a background check and a reference check. Physical competency is determined through the Candidate Physical Ability Test (CPAT), which is a national standard and is conducted by a third party testing agency. In addition to qualifications checks and the physical testing, there are general knowledge written tests, an oral interview process, a medical physical, and a psychological conducted. These tests are time-consuming and expensive to administer, so should only be performed when a vacancy exists or is expected to occur.

Once an employee is hired and passes a probationary period, there is no additional testing required to determine continued competency other than that required to maintain certifications as appropriate. No physical testing is required after initial hire. As a physically demanding job, firefighters should be testing physically and medically to ensure continued fitness to perform the tasks required. HFD is located in an area where it is likely that personnel will be assigned to a wildland fire. Wildland firefighters who are expected to perform arduous work assignments are typically required to successfully perform what is referred to as a "pack test". A pack test is performed with a 45 pound weighted pack where the firefighter must carry the pack on a three-mile hike and complete it within 45 minutes. This may be an appropriate physical test to administer annually.

In addition, HFD should consider participating in the International Association of Fire Chief (IAFC) and the International Association of Firefighters (IAFF) Wellness-Fitness Initiative (WFI). The WFI includes a fitness routine established at work, a baseline medical physical for each employee, and medical evaluations for each employee conducted annually, bi-annually or tri-annually, depending on the age of the employee.

Formal written performance reviews are conducted periodically by supervisors. This should be provided annually, and all supervisors should be trained in providing regular performance feedback and administering a performance review annually.

There is no safety committee at HFD. A safety committee should be established and consist of equal membership between labor and management. Given that management at HFD is currently one person, labor would represent an imbalance in the safety committee make-up, but this should not be an impediment to implementation of a safety committee. It establishes a forum for safety issues to be discussed and if possible mitigated.

RECOMMENDATIONS:

- Consider implementing the Well-Fitness Initiative. Alternatively, consider implementing a physical competence testing, such as a pack test, annually for incumbents.
- Establish a safety committee made up of equal representation from employees and management.

Figure 19: Staffing Levels & Activities

Survey Components	Staffing & Personnel	
	Hemet Fire Department	Observations
Administration and Other Support Staff		
Fire chief	1	
Assistant/Deputy fire chief	0	
Training Chief	0	
Training Officer	0	
Fire Marshal	0	
Fire prevention specialist	.5 (contract employee – also performs plans review)	

Survey Components	Staffing & Personnel	
	Hemet Fire Department	Observations
Emergency management coordinator	.5 (interim)	
EMS coordinator	0	
Administrative assistant	1	
Staff assistant	0	
Total administrative & support staff	3	Insufficient command and support staff
Percent administrative & support to total	6.25%	Typical percent is 12-15%
Emergency Operations Staff		
Battalion chief	0	Shift commander should be assigned to each shift
Captain	3 staff captains, 12 fire captains	Staff captains should be replaced with shift commander positions
Lieutenant	0	
Engineer	12	
Engineer/Paramedic	3	
Firefighter/paramedic	6	
Firefighter	9	
Total operational staff	45	
Fire department total	48	
Percent of operational officers to firefighters	33.3%	
Use of Personnel		
Career schedule	48-96	
length of normal duty period	48 hours	Demand makes a 48 hour work period likely unsafe or unproductive
FLSA period	28	
duty hours per week	56 hours	
normal shift begins	0700	
callback requirements	Yes	
residency requirements	No	
standby duty requirements	None (situational)	
Operational services provided		
fire suppression	Yes	
EMS/rescue, first response	Yes	
EMS, advanced life support	Yes	
specialized rescue	Yes	
fire prevention inspections	Limited, performed by .5 contract employee	Expand prevention services to follow ISO recommended frequency

Survey Components	Staffing & Personnel	
	Hemet Fire Department	Observations
emergency management	Yes, interim-part-time	Assign as regular employee
public education	Limited	Expand public education
hazardous materials response (level)	Yes – Level A (6 technicians)	Part of a regional team
Volunteer services		
chaplain	Limited, through police services and local clergy	Combine – public safety chaplaincy
Responsibilities and Activity Levels of Personnel		
Assignment of routine duties:	Need and availability determine assignments	
by position	N/A	
by areas of personal interest	N/A	
Special duties assigned by:	Interest, availability, aptitude	
bid	N/A	
duty assignment	N/A	
areas of personal interest	A consideration	
Committees and work groups	Referred to as project teams	
EMS quality management	Yes	
apparatus committee	Yes	
operations (2015)	Pending	
administrative (2015)	Pending	
disaster prep. (2015)	Pending	

Discussion:

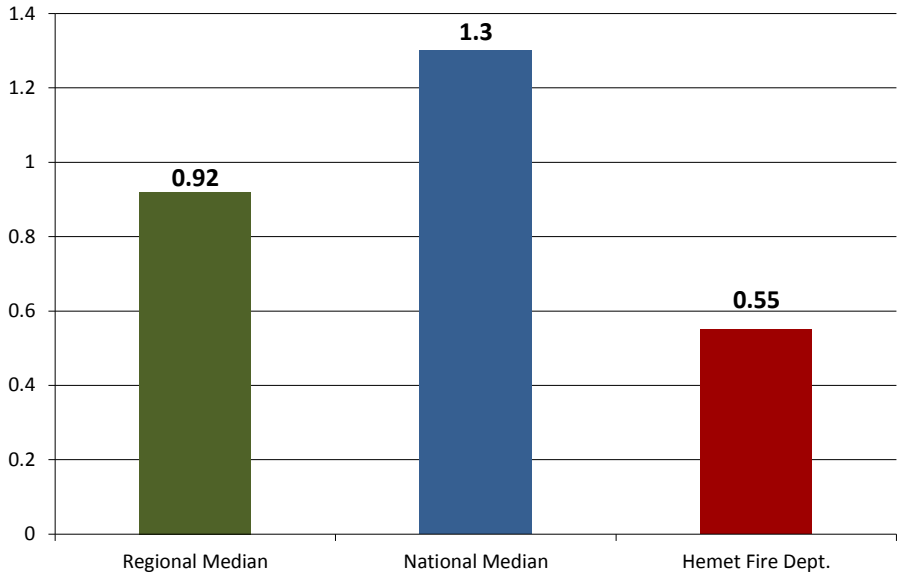
Staffing levels at HFD are very low at the line level and at the management level by virtually any industry measure used. Administratively, the fire chief is the only position with authority. The fire chief combined with his two part-time support positions and one full time administrative assistant make up a total of 6.25% of the total work force of the Hemet Fire Department. ESCI has found that municipal fire departments throughout the country have an administrative and support staff that typically falls in the range of between 12-15%.

The shift command positions are staff captains reassigned from shift to serve in this capacity supervising their shift captain peers. While these captains are to be applauded for stepping up when the organization has need, they do not have the qualifications to operate in that capacity for extended periods of time. The shift commander position is designed for a battalion chief, which is the lowest level chief officer in the fire service, but above captain in rank and qualification. While a captain is trained to supervise a unit or company and manage small incidents, a battalion chief is trained to supervise an entire battalion (between three and seven fire stations typically) and manage a large scale incident.

HFD operates five fire stations, each having one response unit staffed. Stations one through four have a fire engine staffed with a captain, an engineer, and a firefighter. Station five has a two person squad. This represents fourteen personnel on each shift plus a staff captain for each shift for a total of fifteen.

The three shifts combined provide a total of 45 personnel on shift. The officer to subordinate ratio is 1:3, which means that 33% of the line staff are officers. This is a typical ratio in the fire service. However, the total staffing available on a single shift is very low compared with other agencies of similar size and make-up as Hemet regionally and nationally (see the following figure).

Figure 20: Comparison of Firefighters per 1,000



HFD utilizes constant staffing; there are exactly the same number of employees as there are seats to fill for each shift. Any vacancy creates an overtime cost. This is compared to an overstaffing model, which maintains a pool of employees for each shift which exceeds the seat assignments. In the overstaffing model, overtime can be reduced by the excess of the seat assignments. Determining the cost effectiveness of either model is beyond the scope of this report, but may be worth HFD evaluating.

The line fire personnel work a 48-96 work schedule. This means that they report for duty for a forty-eight hour shift, followed by ninety-six hours off. This creates an average fifty-six hour work week. Since this exceeds the FLSA 7k exemption threshold by three hours, each employee is eligible to receive overtime of three hours per week even if all personnel report for duty and there are no absences.

As mentioned earlier in this report, a forty-eight hour work shift with an emergency response demand as high as HFD's is a potentially dangerous or unproductive combination. With the call volume experienced by HFD, crew members cannot expect to have significant rest periods during their forty-eight hour shift. Sleep deprivation causes slow reactions and errs in judgment and reasoning. It is interesting to note that a person awake for twenty-four hours has the same reaction time and critical thinking ability as a well-rested individual with a blood alcohol level of 0.10 percent, a level considered

legally drunk in all U.S. states.[2] It is also important to note that a key doctrine of law called respondeat superior holds that an employer is almost always responsible for the actions of employees when carried out while employees are on the "clock" and performing their normal duties.[3]

The operational services provided by the Hemet Fire Department are typical of a fire department its size. These services include fire suppression, emergency medical services at the first response advanced life support level, specialty rescue services, hazardous materials services, fire prevention services, and emergency management services. While these services are standard amongst fire departments the size of HFD, the ability to provide them is limited.

The fire suppression and EMS response services are discussed and analyzed in greater detail in the *Service Delivery and Performance* section of this report. The hazardous materials services being provided is as a part of a regional team, with HFD providing six haz-mat technicians to the regional team. This is a cost effective way to deliver this service, which is required infrequently but has very high consequences. HFD does participate in the FEMA Urban Search and Rescue program with eight active members in USAR Task Force 6. The HFD members are Technical Search Specialists, with two serving as Search Team Managers. To maintain competency, other HFD members participate in annual refresher awareness level training in confined space, water rescue, structural collapse, and GPS.

The two support programs provided by HFD, fire prevention and emergency management, are provided by two part time employees. These programs are critical to the health of a community and although separate, are very much related. Both are sorely understaffed. Each of these functions can rely heavily upon self-help training of the citizens in the community, which becomes a force multiplier and is inexpensive compared to relying exclusively upon HFD staff to address.

Fire prevention is quickly evolving to a community risk reduction (CRR) mission. The principles of CRR recognize that it is far less costly – in tax dollars, property loss, business loss, and life loss – to prevent an incident than to respond to one. Beyond code enforcement, prevention is turning to partnerships with the community and with non-profit organizations to minimize the risk of an incident. CRR is an integrated approach to risk management that marries emergency operations and prevention strategies into a more cohesive approach to reducing risks in any community. Emergency management complements this area well, and both programs could benefit from combining efforts. CRR is discussed in greater detail in the *Service Delivery Options* section of this report.

HFD uses project teams when concentrated work must be done on issues such as EMS quality assurance and apparatus committees. Currently in the work plan for 2015 are the following project teams: emergency operations issues and standards, administrative procedures and processes, and disaster preparedness. Integrating fire prevention and emergency management into an Integrated Community Risk Reduction strategy would be an appropriate activity to include in these project teams.

[2] "The 24-Hour Shift: Impact on Health and Safety," Fire Engineering, May 1, 2007. Retrieved April 25, 2015, http://www.fireengineering.com/articles/print/volume-160/issue-5/departments/fire-service-ems/the-24-hour-shift-impact-on-health-and-safety.html

[3] Ibid.

RECOMMENDATIONS:

- Add a deputy chief (exempt) position to manage the operational workload for the HFD.
- Establish three shift battalion chiefs to manage the three shifts of the HFD, returning the staff captains to the line.
- Bargain a shorter hourly shift schedule to reduce risk, increase firefighter safety and improve productivity.
- Combine emergency management and fire prevention into a CRR strategy and increase staffing to this program.

CAPITAL ASSETS AND CAPITAL IMPROVEMENT PROGRAMS

Aside from personnel, capital assets can be a department's most critical expense. Without proper upkeep and replacement planning, facilities and apparatus can fall into disrepair and fail at a critical time. This section evaluates the capital assets of the Hemet Fire Department and provides recommendations as necessary.

Figure 21: Survey Table – Capital Assets and Capital Improvement Programs

Survey Components	Hemet Fire Department Observations	Comments and Recommendations
Fire Stations/Structures		
A. Replacement Plan maintained	Yes, underfunded.	Conduct a master facility plan to determine upgrades, replacement options, funding mechanisms, and timing. Implement and fund a station replacement schedule based on the findings of the master facility plan.
B. Construction or improvement plans	Security upgrades to station 2, drainage upgrades at station 5, individual station refurb.	
i) 2013	N/A	
ii) 2014	N/A	
iii) 2015	N/A	
iv) 2016	N/A	
Apparatus		
A. Replacement plan maintained	Yes-individual replacement plan is unclear.	Implement, adopt, and fund apparatus equipment replacement schedule.
i) Period of plan (from – to)	5 years.	
ii) Funding mechanism	Development fees and general fund at the discretion of the City Council.	
B. Purchase or refurbishment schedule	Annual review.	
i) 2013, planned	N/A	
ii) 2014, planned	N/A	
iii) 2015, planned	N/A	
Support Equipment		
A. Replacement Plan maintained	Part of apparatus plan.	Update, adopt, implement, and fund support equipment schedule.
i) Period of plan (from – to)	Estimated life of equipment.	
Methods of Financing		
A. General revenue	N/A	
B. Reserve fund(s)	Reserves set aside.	
C. Revenue fund(s)	N/A	
D. General obligation bond	N/A	
E. Lease-Purchase	N/A	

Facilities

Fire stations play a vital role in the delivery of emergency services. A station's location will dictate, to a large degree, response time performance. A poorly located station can mean the difference between confining a fire to a single room and losing the structure. Fire stations also need to be designed to adequately house equipment and apparatus; as well as meet the needs of the organization and the career staff who work for extended periods in the stations. It is important to research need based on call volume, response time, types of emergencies, and projected growth prior to making a station placement commitment. The following figures summarize ESCI's non-engineering, non-architectural review of the five HFD stations.

Figure 22: HFD Station 1

HFD Station 1 serves the downtown core area of Hemet. The station is located two blocks off of Florida Avenue (Highway 74), the major east west route through Hemet. Currently, first response units include a structural engine and the shift command officer at this station. This facility also houses an interface engine (Type III), a breathing air trailer, a reserve engine, and utility vehicles. The station shows signs of aging and will need refurbishing in the future. It is vulnerable to seismic risks, which is concerning given that it is a essential community facility.

1. Structure	
A. Construction type	Block construction
B. Date Built	1960
C. Seismic protection/energy audits	None
D. Auxiliary power	An auxiliary generator provides uninterrupted power
E. Condition	Fair and aging
F. Special considerations (American with Disabilities Act of 1990 (ADA), mixed gender appropriate, storage, etc.)	Public areas are ADA compliant. Living quarters are mixed gender appropriate. Limited storage space is available.
2. Square Footage	Approximately 7,500 square feet
3. Facilities Available	
A. Exercise/workout	Exercise area with equipment is available
B. Kitchen/dormitory	Kitchen and dining area is adequate. Partitioned sleeping areas with personal storage for career staff.
C. Lockers/showers	Separate restrooms with showers.
D. Training/meetings	A large dayroom/meeting area is available upstairs.
E. Washer/dryer	Personal use washer dryer
4. Protection Systems	
A. Sprinkler system	None
B. Smoke detection	Residential smoke detectors in living quarters.
C. Security	Doors are equipped with key pads for security.
D. Apparatus exhaust system	Point of use exhaust system is installed.

Figure 23: HFD Station 2

Station 2 serves the southeastern portions of the city. The facility is a two bay drive through configuration, with room for four apparatus. Currently, first response units include a structural engine and an OES engine at this station. Station 2 is well located to serve the largely residential service area. The station is in fair condition and aging; likely to present future maintenance challenges. It is vulnerable to seismic risks, which is concerning given that it is a essential community facility.

1. Structure	
A. Construction type	Conventional block construction
B. Date Built	1968
C. Seismic protection/energy audits	None
D. Auxiliary power	None
E. Condition	Fair and aging
F. Special considerations (American with Disabilities Act of 1990 (ADA), mixed gender appropriate, storage, etc.)	Small public reception area with office space. Living quarters are mixed gender appropriate. Little or no storage space is available.
2. Square Footage	Approximately 5,000 square feet
3. Facilities Available	
A. Exercise/workout	Exercise area in engine bay with equipment is available.
B. Kitchen/dormitory	Small kitchen and dining area is adequate. 3 separate sleeping rooms with storage for personnel.
C. Lockers/showers	Separate restrooms with showers.
D. Training/meetings	A small dayroom area is associated with kitchen/dining area. There is no additional meeting or training area.
E. Washer/dryer	Personal use washer dryer
4. Protection Systems	
A. Sprinkler system	None
B. Smoke detection	Residential smoke detectors in living quarters.
C. Security	Doors are equipped with key pads for security.
D. Apparatus exhaust system	Point of use exhaust system is installed.

Figure 24: HFD Station 3

Station 3 is located north of Highway 74, west of the downtown area. The station consists of a residential structure with two attached double apparatus bays. Currently, first response units include Engine 3 and a reserve engine at this facility. Station 3 serves primarily residential neighborhoods and some commercial development along Highway 74. The living quarters are over 50 years old and not designed for the current use. The condition of the living quarters presents both short- and long-term maintenance issues. It is vulnerable to seismic risks, which is concerning given that it is a essential community facility.

1. Structure	
A. Construction type	Conventional wood framed residential structure, with attached conventional framed apparatus bays.
B. Date Built	Living quarters-1963, Apparatus bays-1994
C. Seismic protection/energy audits	None
D. Auxiliary power	Auxiliary generator in place
E. Condition	Living quarters are in poor to fair condition. Apparatus bays are in fair to good condition.
F. Special considerations (American with Disabilities Act of 1990 (ADA), mixed gender appropriate, storage, etc.)	Living quarters are not ADA compliant. Living quarters are mixed gender appropriate. Some storage space is available. There is a small shop area in the apparatus bays.
2. Square Footage	Approximately 6,500 square feet total. 3,000 living quarters, 3,500 square feet apparatus bays
3. Facilities Available	
A. Exercise/workout	Exercise area in apparatus bay with equipment.
B. Kitchen/dormitory	Kitchen and dining area is adequate. Three separate sleeping rooms with storage for career staff.
C. Lockers/showers	Separate restrooms with showers.
D. Training/meetings	Office area.
E. Washer/dryer	Personal use washer dryer
4. Protection Systems	
A. Sprinkler system	None
B. Smoke detection	Residential smoke detectors in living quarters.
C. Security	Doors are equipped with key pads for security.
D. Apparatus exhaust system	Point of use exhaust system is installed.

Figure 25: HFD Station 4

Constructed in 2005, Station 4 is well designed and meets current industry standards for an essential facility. There are three double bays. Currently, first response units include the HFD aerial apparatus (Truck 1) and a structural engine (Engine 4), which are cross staffed at this station. The department's Hazardous Materials response trailer is also located at this station. The facility is located next to the Hemet-Ryan Airport and serves residential areas and the commercial and industrial properties around the airport. A large meeting room is available for use by the community.

1. Structure	
A. Construction type	Conventional construction with brick veneer.
B. Date Built	2005
C. Seismic protection/energy audits	Built to current code.
D. Auxiliary power	Auxiliary generator in place.
E. Condition	Good
F. Special considerations (American with Disabilities Act of 1990 (ADA), mixed gender appropriate, storage, etc.)	Facility is ADA compliant and mixed gender appropriate. The living quarters are shared with the crew of the medical helicopter stationed at the airport.
2. Square Footage	10,000 square feet
3. Facilities Available	
A. Exercise/workout	A well-equipped workout space is available.
B. Kitchen/dormitory	Kitchen is adequate and well equipped. There are 10 separate sleeping areas with storage for on duty staff.
C. Lockers/showers	Separate restrooms and shower facilities.
D. Training/meetings	Some space available for training and meetings.
E. Washer/dryer	Personal use washer/dryer for on-duty staff.
4. Protection Systems	
A. Sprinkler system	Sprinkler system in place.
B. Smoke detection	Central smoke and heat detectors.
C. Security	Doors are equipped with key pads for security.
D. Apparatus exhaust system	Apparatus exhaust system in place.

Figure 26: HFD Station 5

Hemet Fire Station 5 is located in the eastern portion of Hemet. The Station 5 first due area is primarily residential. This facility has not been staffed for several years, due to budget cuts during the recent recession. As of March 2015, the two person squad housed at Station 1 has been moved to Station 5. The facility consists of a manufactured home and a detached single bay apparatus garage. The detached apparatus bay does not promote good turnout time performance. The station is located less than one mile from a CAL FIRE Riverside County fire station (Little Lake), representing significant duplication.

1. Structure	
A. Construction type	Manufactured home living quarters and conventional wood framed detached apparatus garage.
B. Date Built	2008
C. Seismic protection/energy audits	Built to current residential code.
D. Auxiliary power	None
E. Condition	Good
F. Special considerations (American with Disabilities Act of 1990 (ADA), mixed gender appropriate, storage, etc.)	Facility has no public access-is not ADA compliant. Mixed gender appropriate. Some storage space is available.
2. Square Footage	1,400 square feet-living quarters.
3. Facilities Available	1,200 square feet-apparatus garage.
A. Exercise/workout	None
B. Kitchen/dormitory	Residential kitchen and eating area. Three sleeping areas with closets.
C. Lockers/showers	Two bathrooms with showers.
D. Training/meetings	Living room area.
E. Washer/dryer	Extractor for cleaning personal protective equipment (PPE) installed in apparatus garage. Personal use washer dryer.
4. Protection Systems	
A. Sprinkler system	None
B. Smoke detection	Residential smoke detectors in living quarters.
C. Security	Doors are equipped with key pads for security.
D. Apparatus exhaust system	Point of use exhaust system is installed.

ESCI toured all five of the HFD fire stations. Three of the five stations are either over or approaching 50 years old. ESCI believes that these stations need significant refurbishing in order to meet the future needs of HFD. Station 5 is adequate for the current use; however the single bay detached apparatus building provides a barrier to efficient turnout times.

It is imperative to base repair or replacement of fire stations on current code and design principles; and just as importantly, the future needs of the organization. ESCI suggests that HFD conduct a master facility plan to determine future options, funding, and timing.

Apparatus

Other than the firefighters assigned to stations, response vehicles are probably the next most important resource of the emergency response system. If emergency personnel cannot arrive quickly due to unreliable transport, or if the equipment does not function properly, then the delivery of emergency service is likely compromised. The following tables provide a summary of Hemet Fire Department operational apparatus.

Figure 27: HFD Station 1 Major Apparatus

Apparatus Designation	Type	Year	Make / Model	Condition	Seating Capacity	Pump Capacity	Tank Capacity
3264	Type 1	2005	KME	Good	6	1500	500
3257	Type 1	1999	KME	Good	6	1500	500
3267	Type 3	2012	KME	Excellent	5	500	500
3206	Breathing Air Trailer	2005	HAULMARK	Good	0	0	0
3259	Utility	05	F150	Fair	5	0	0
3249	Utility	97	F150	Fair	4	0	0
3261	Utility	05	F150	Good	5	0	0
3260	Utility	2006	F150	Good	6	0	0

Figure 28: HFD Station 2 Major Apparatus

Apparatus Designation	Type	Year	Make / Model	Condition	Seating Capacity	Pump Capacity	Tank Capacity
3255	Type 1	2002	KME	Good	6	1500	500
3266	OES Type 1	2008	KME	Excellent	6	1250	800
3247	Type 1	97	FERRERA	Poor-OOS	6	1500	500

Figure 29: HFD Station 3 Major Apparatus

Apparatus Designation	Type	Year	Make / Model	Condition	Seating Capacity	Pump Capacity	Tank Capacity
3263	Type 1	2005	KME	Good	6	1500	500
3251	Type 1	1999	KME	Fair	6	1500	500

Figure 30: HFD Station 4 Major Apparatus

Apparatus Designation	Type	Year	Make / Model	Condition	Seating Capacity	Pump Capacity	Tank Capacity
3265	Aerial (Tiller)	2007	KME	Excellent	7	0	0
3254	Type 1	2002	KME	Good	6	1500	500
3246	Trailer	1995	WELLS CARGO	Fair	0	0	0
3230	F550	2000	FORD	Good	5	0	0
3235	Trailer	2011	HAULMARK	Good	0	0	0

Figure 31: HFD Station 5 Major Apparatus

Apparatus Designation	Type	Year	Make / Model	Condition	Seating Capacity	Pump Capacity	Tank Capacity
3231	F550	2000	FORD (Squad)	Fair	5	0	0

In general, the HFD frontline apparatus are in good condition. The apparatus ranges in age from 16 years to 3 years. The vehicles appear well maintained, organized, and clean. While on-duty crews perform daily checks and routine light maintenance; critical maintenance and repair work is handled by an emergency vehicle technician (EVT) certified mechanic at the City of Hemet shop.

Fire service apparatus are expensive, highly specialized pieces of equipment, vital to an effective and reliable emergency service delivery system. HFD responded to over 14,000 incidents in 2014, with fewer apparatus than similarly sized jurisdictions.[4] If a jurisdiction (especially one as busy as Hemet) does not routinely replace equipment in a timely manner, an increase in maintenance costs and downtime can be expected. ESCI encourages HFD to develop a fully funded apparatus replacement plan based on industry best practices, actual apparatus use, and maintenance costs.

[4] Comparison of Resources per 1,000 Population, Organizational Overview.

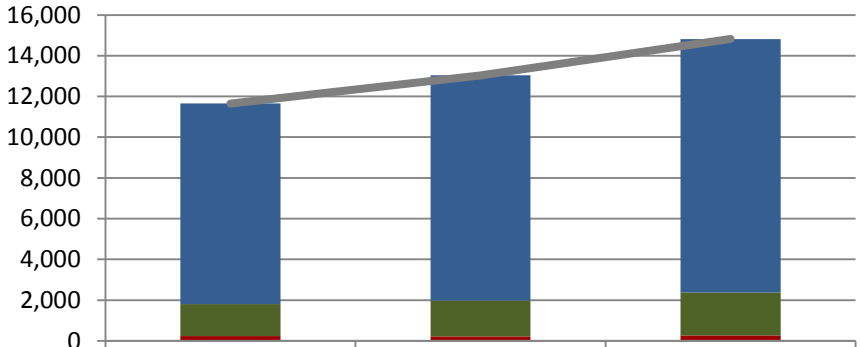
SERVICE DELIVERY AND PERFORMANCE

The delivery of fire suppression, rescue, and emergency medical services is no more effective than the sum of its parts. It requires efficient notification of an emergency and rapid response from well-located facilities in appropriate apparatus with a sufficient number of well-trained personnel following a well-practiced plan of action. This section of the report provides an analysis of the current service delivery components of the Hemet Fire Department. National Fire Incident Records System (NFIRS) data, incident response data, and apparatus response data collected by the department is used in this section of the report.

Demand Analysis

Service demand is defined as the workload experienced by an emergency services organization. This workload can be emergency and/or non-emergency depending on the mission of the organization. The following figure demonstrates historical service demand over the last three calendar years within the City of Hemet.

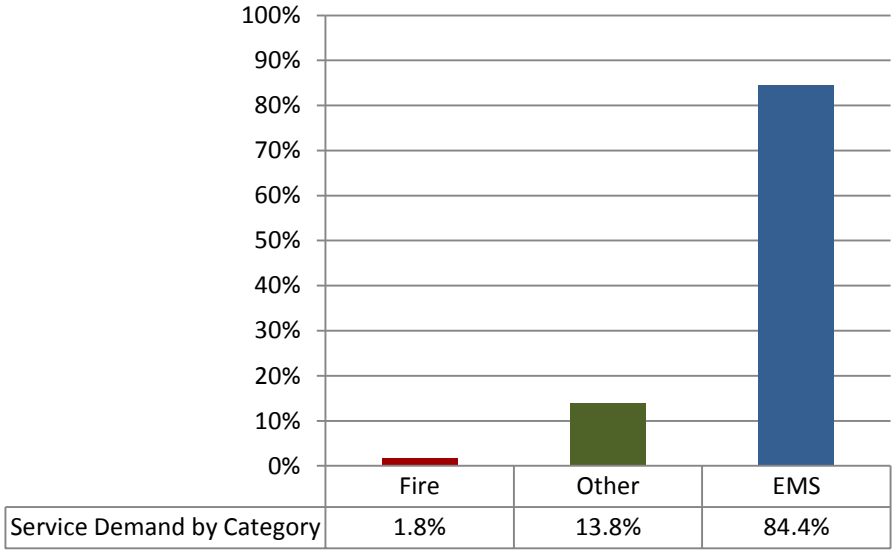
Figure 32: HFD Service Demand, 2012 through 2014



	2012	2013	2014
EMS	9,846	11,058	12,440
Other	1,573	1,760	2,110
Fire	230	217	267
Total	11,649	13,035	14,817

Hemet Fire experienced a 27.2 percent increase in overall service demand over the last three calendar years. As demonstrated in this figure, service demand within the Hemet Fire Department is predominantly calls for emergency medical services (EMS). The figure categorizes service demand as “Fire,” “EMS,” or “Other”; and displays the percentage of each category during the time period displayed.

Figure 33: HFD Service Demand by Incident Category, 2012 through 2014



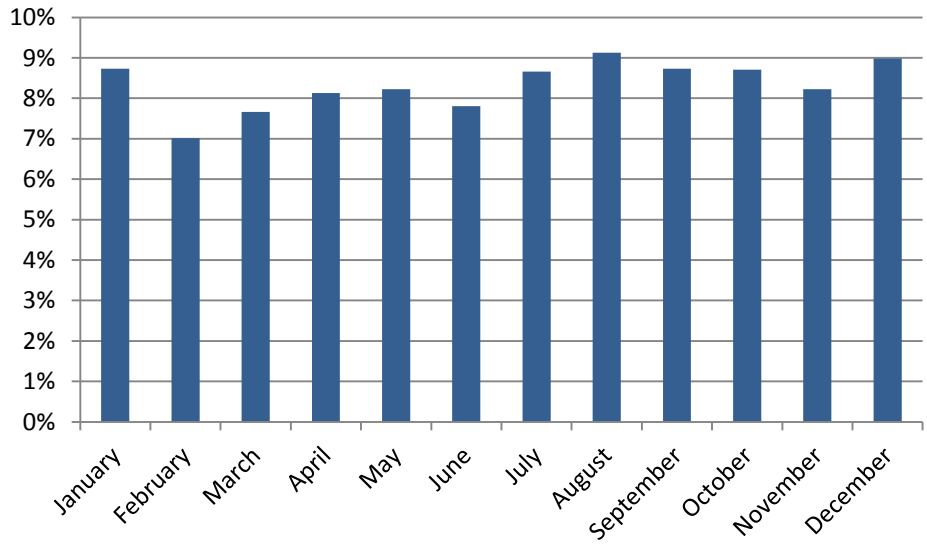
	Fire	Other	EMS
Service Demand by Category	1.8%	13.8%	84.4%

In the preceding figure, "Fire" refers to any incident coded as a fire in the NFIRS data. The "EMS" category includes all calls for medical service including motor vehicle accidents and rescue incidents; and the "Other" category refers to incidents such as hazmat, false alarms, service calls, or weather related incidents. The number of actual fires and other incident types is similar to that experienced by fire departments around the country. However, in ESCI's experience, the total number and percentage of EMS incidents is higher than that normally seen by similarly configured fire jurisdictions.

Temporal Variation

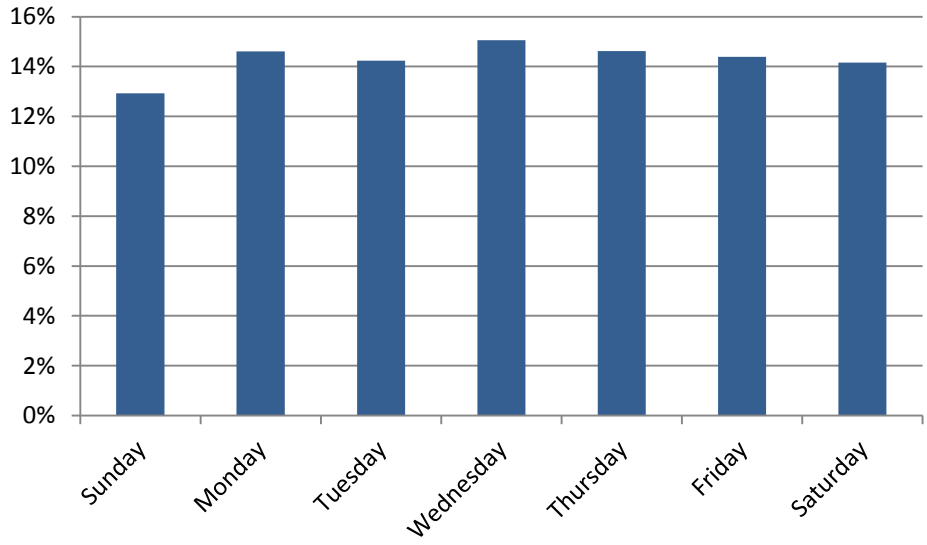
Service demand is not static, and HFD's workload varies by temporal variation. The following figures illustrate how HFD's service demand varied by month, day of week, and hour of day during 2014 in order to identify any periods of time that pose significantly different risks and hazards. This analysis begins by evaluating service demand by month.

Figure 34: HFD Service Demand by Month, 2014



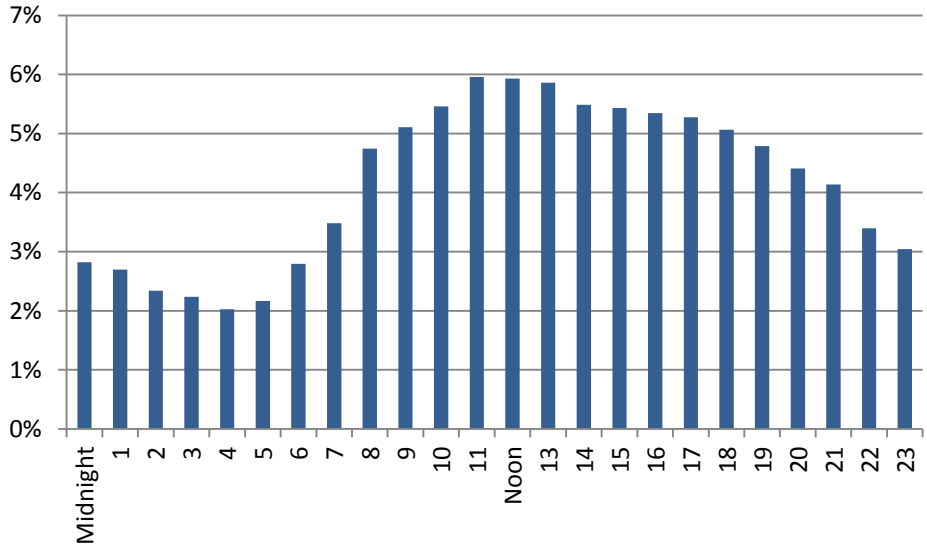
Overall service demand varies throughout the year, with the lowest demand in February (7.01%) and the highest percentage (9.12%) of incidents in August 2014.

Figure 35: HFD Service Demand by Day of the Week, 2014



As with monthly service demand, service demand by day of the week varies within a narrow range throughout the week. Wednesday displays the highest demand (15.06%), with the lowest service demand on Sunday (12.92%).

Figure 36: HFD Service Demand by Hour of the Day

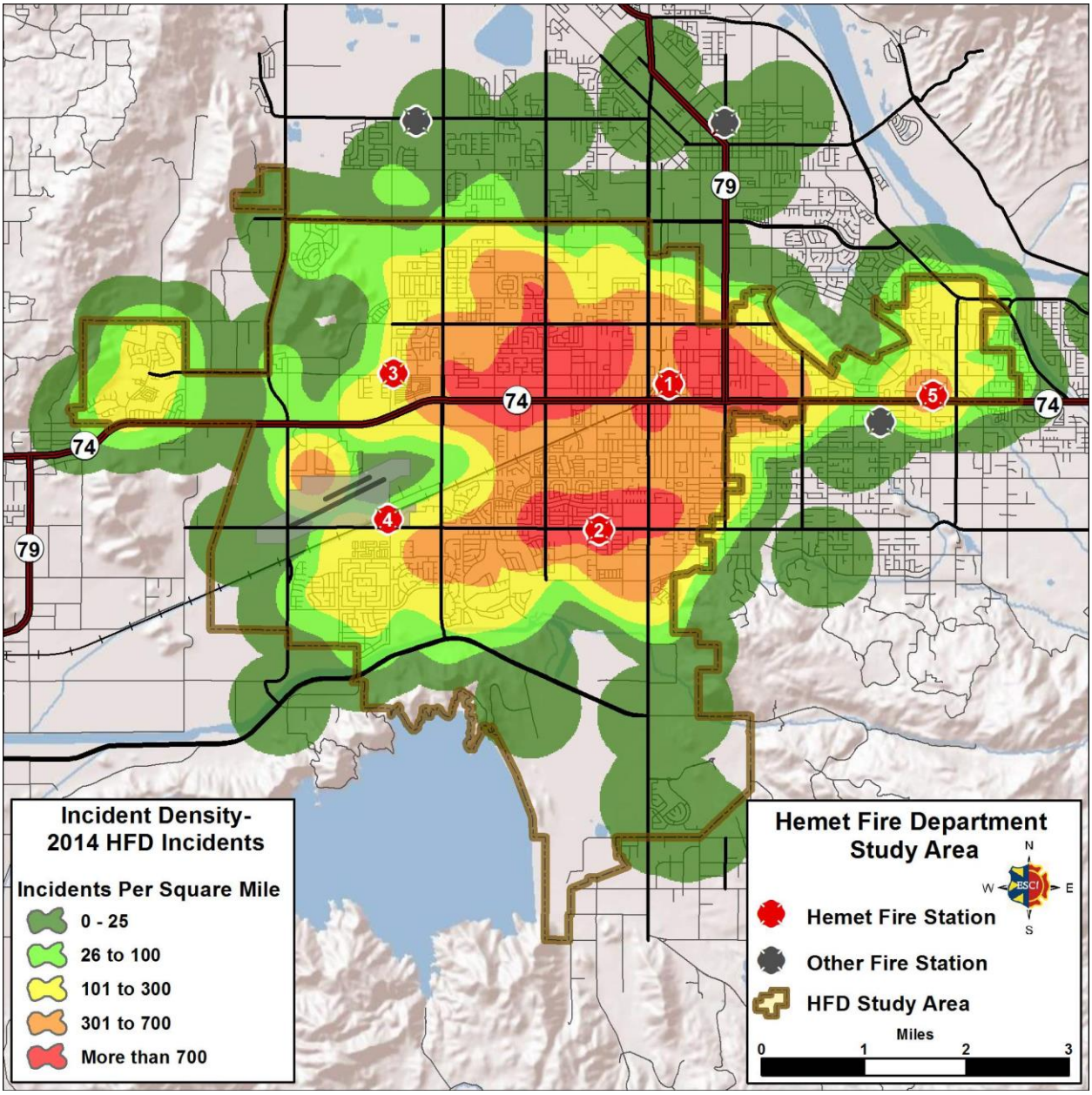


Service demand directly correlates with the activity of people, with workload increasing during daytime hours, and decreasing during nighttime hours as shown in the preceding figure. Over 64 percent of HFD service demand in 2014 occurred between 8:00 AM and 8:00 PM. The increase in service demand during the day is significant and predictable. There is an opportunity to anticipate increased workload and improve response performance by deploying additional apparatus or personnel during the busiest times of the day.

Geographic Service Demand

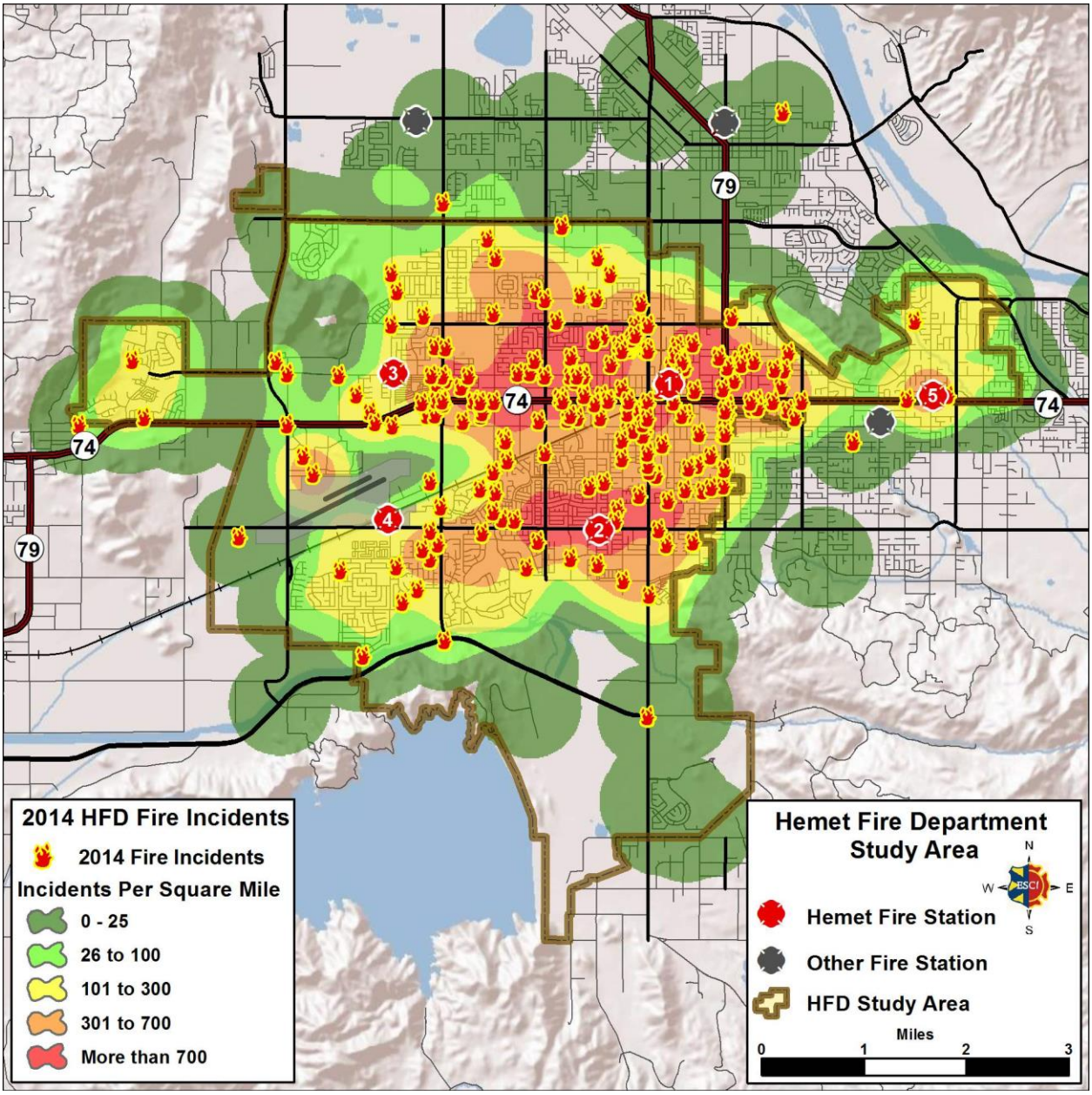
In addition to the temporal analysis of service demand, it is useful to examine the geographic distribution of service demand. In the following figure, ESCI plots incident locations and calculates the mathematical density of 2014 service demand in the HFD service area.

Figure 37: HFD Incident Density, 2014



The highest service demand in the HFD service area is concentrated in the area roughly bounded by HFD Stations 1, 2, 3, and 4. There are also areas of higher incident density around Station 5 (north of Highway 74) and the Heartland Village planned community north of Highway 74, west of Station 3. EMS incidents comprise the majority (84%) of 2014 service demand. The next figure displays the distribution of lower frequency but higher risk fire incidents.

Figure 38: HFD Fire Incidents, 2014



Fire incidents are the least frequent incident type in the data set. However, fires are distributed throughout the study area in a pattern that is similar to the overall incident data. The HFD stations are generally well located to serve the majority of current service demand within HFD service area.

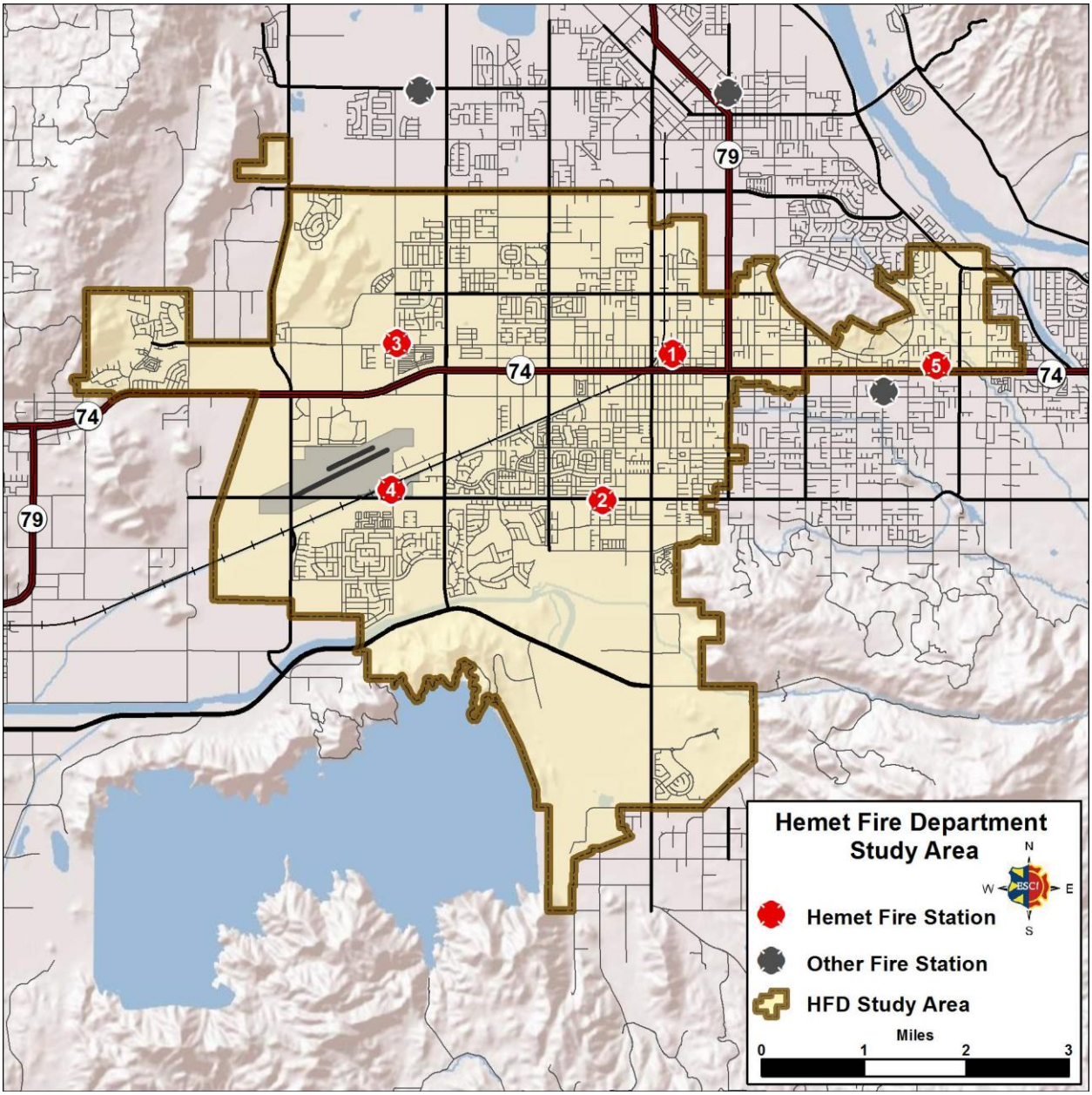
RECOMMENDATIONS:

- Consider adding additional staffing and/or apparatus during periods of peak service demand.
- Utilize GIS to map service demand within the HFD service area and identify areas with high demand.

Distribution Analysis

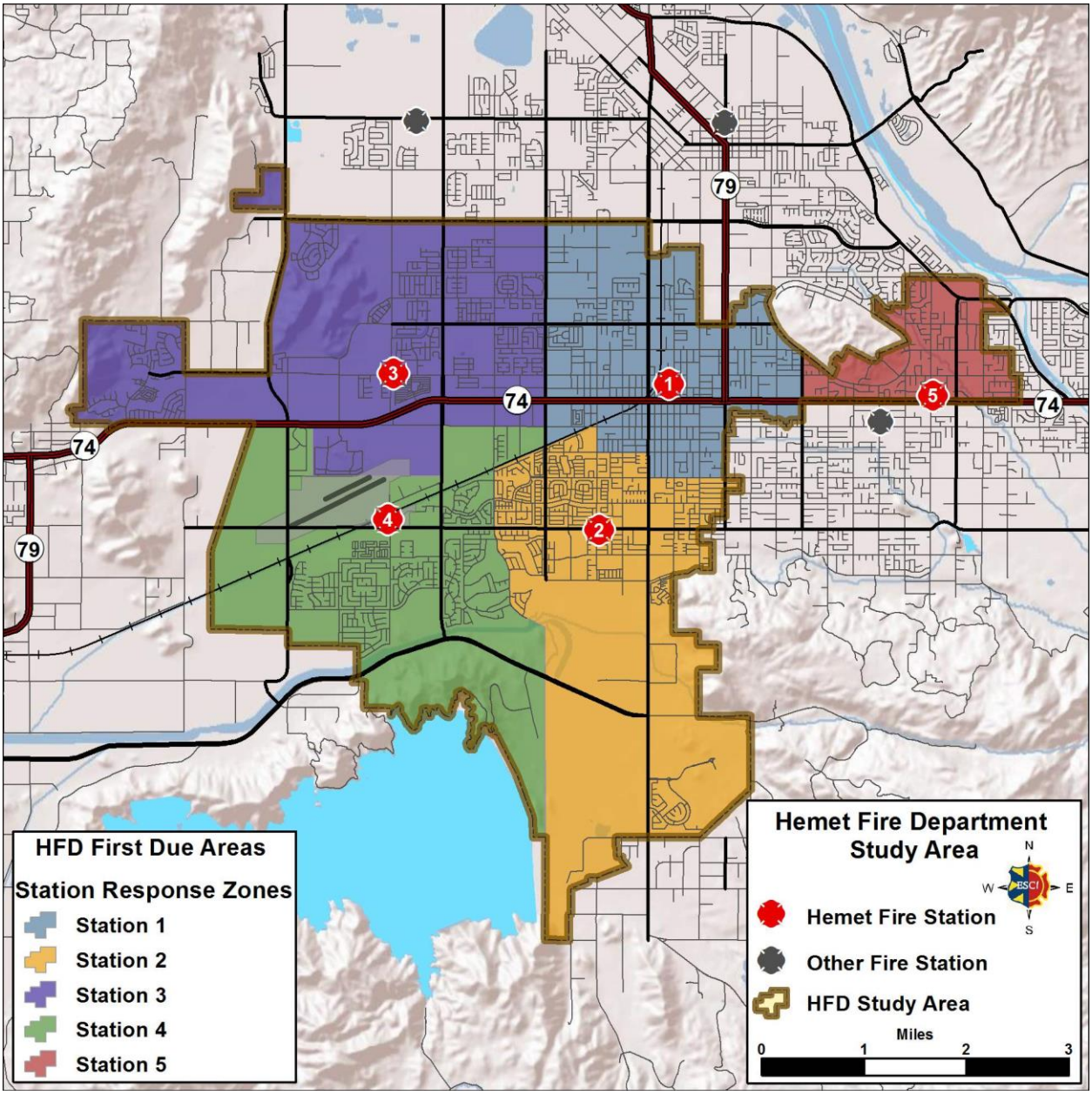
The distribution analysis is an evaluation of how well HFD stations, apparatus, and personnel are deployed across the service area.

Figure 39: Hemet Fire Department Study Area



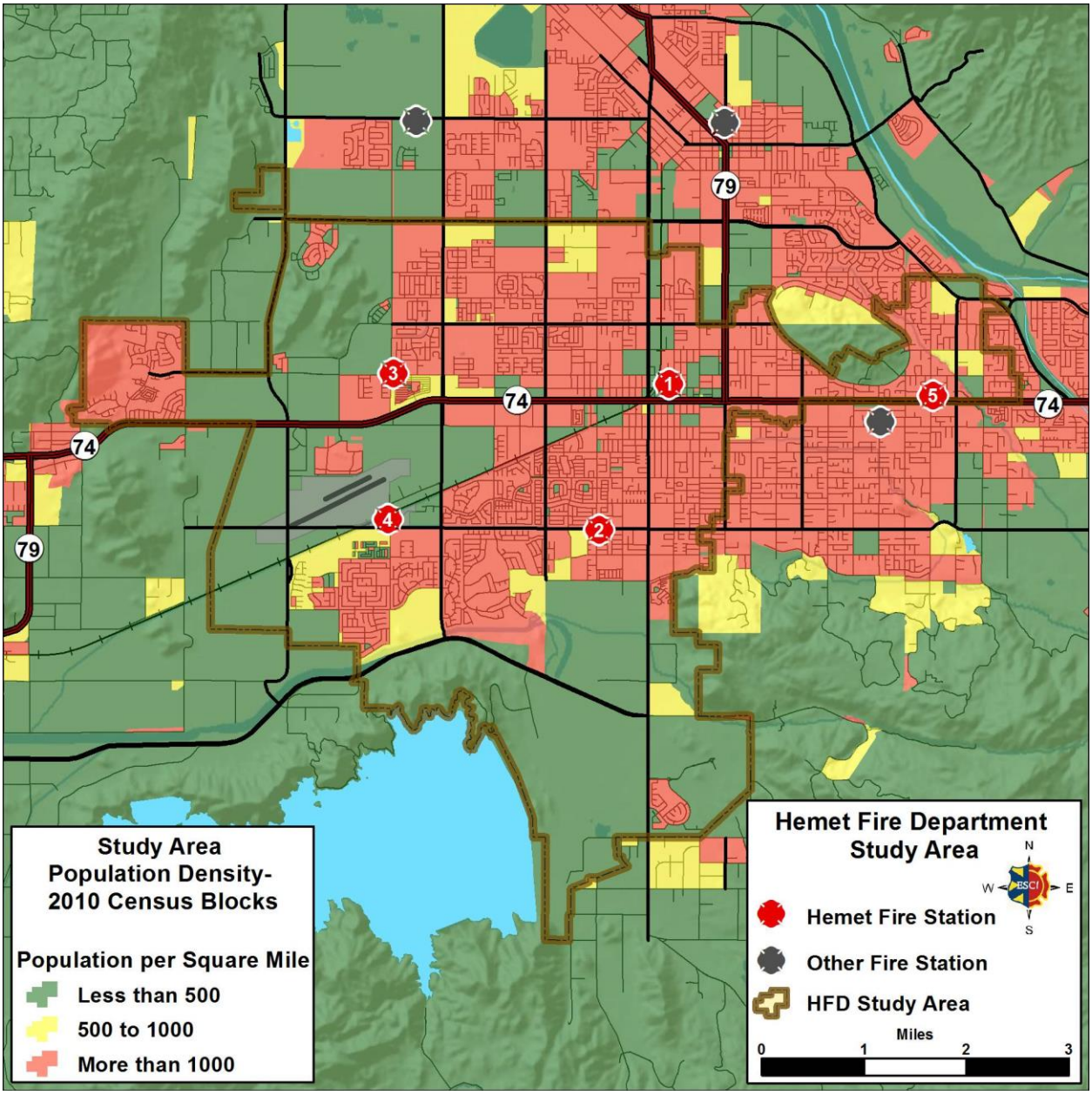
HFD currently provides fire protection, EMS first response (ALS and BLS), hazmat, and rescue services within the City of Hemet. The service area encompasses approximately 28 square miles; and is adjacent the City of San Jacinto to the north and unincorporated Riverside County to the east, west, and south.

Figure 40: HFD Station Response Zones



HFD currently operates from the five stations displayed in this figure. The stations are staffed with career firefighters on a twenty-four hour basis. Note that prior to March 2015, Station 5 was not staffed. The two person squad currently assigned at Station 5 operated from Station 1 and the area around Station 5 was part of the Station 1 first due area.

Figure 41: HFD Study Area Population Density, 2010 Census Blocks

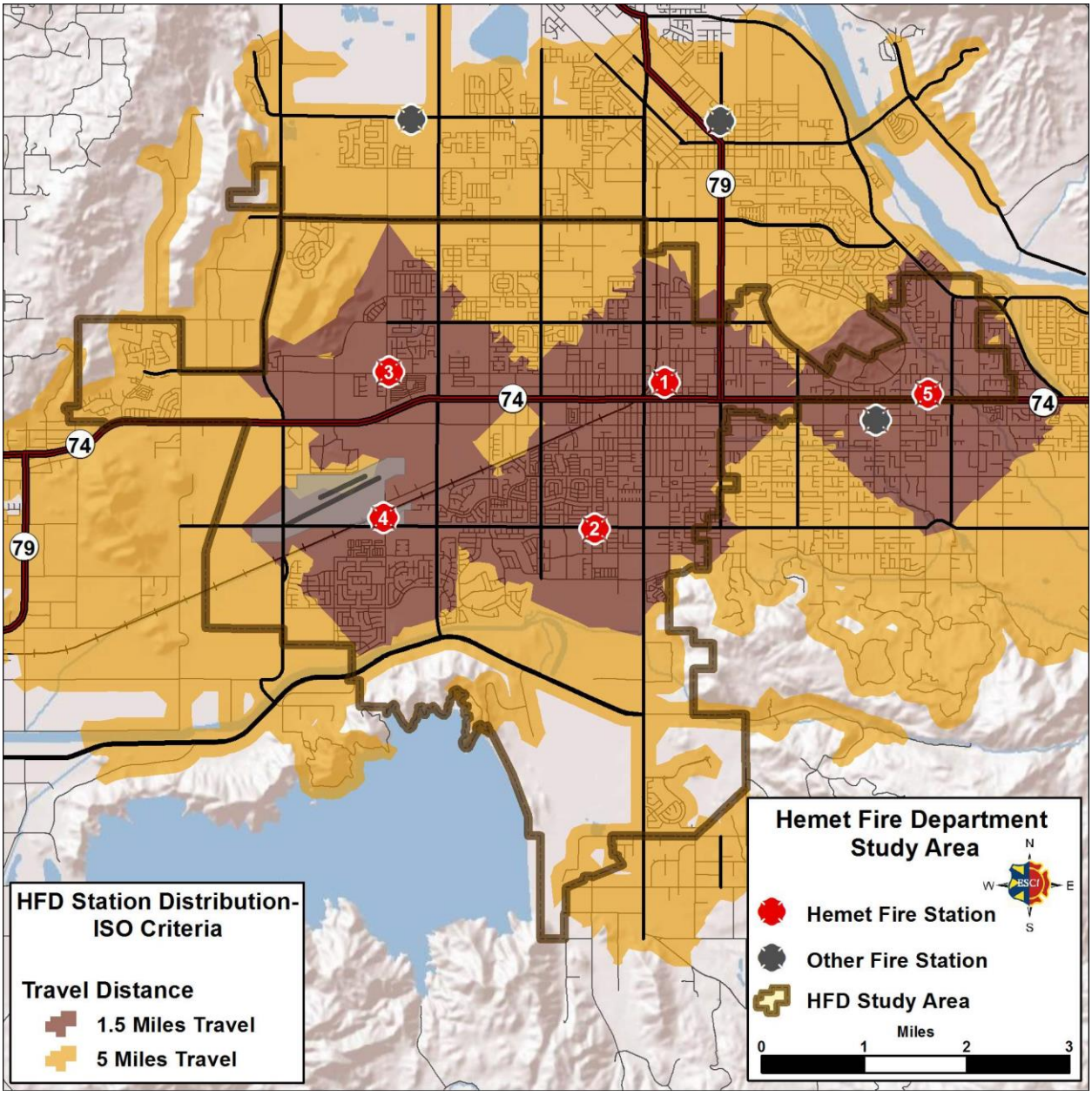


The population density in the developed portions of Hemet is primarily urban in nature. The estimated population of the city as of January 2014 (California Department of Finance Demographic Research Unit-most recent estimate available), was 81,537. This represents a 3.7 percent increase over the 2010 census population.

The Insurance Services Organization (ISO) is a national insurance industry organization that evaluates fire protection for communities across the country. A jurisdiction's ISO rating is an important factor when considering fire station and apparatus distribution; since it can affect the cost of fire insurance for individuals and businesses. For ISO purposes, response areas are measured at 1.5 miles of travel distance for each engine company; and 2.5 miles for a ladder company (aerial apparatus) on existing

roadways. For a structure to be in a protected rating for insurance purposes, it must be within five miles of a fire station. The next two figures examine current HFD station and apparatus distribution based on the rating criteria of the Insurance Services Organization (ISO).

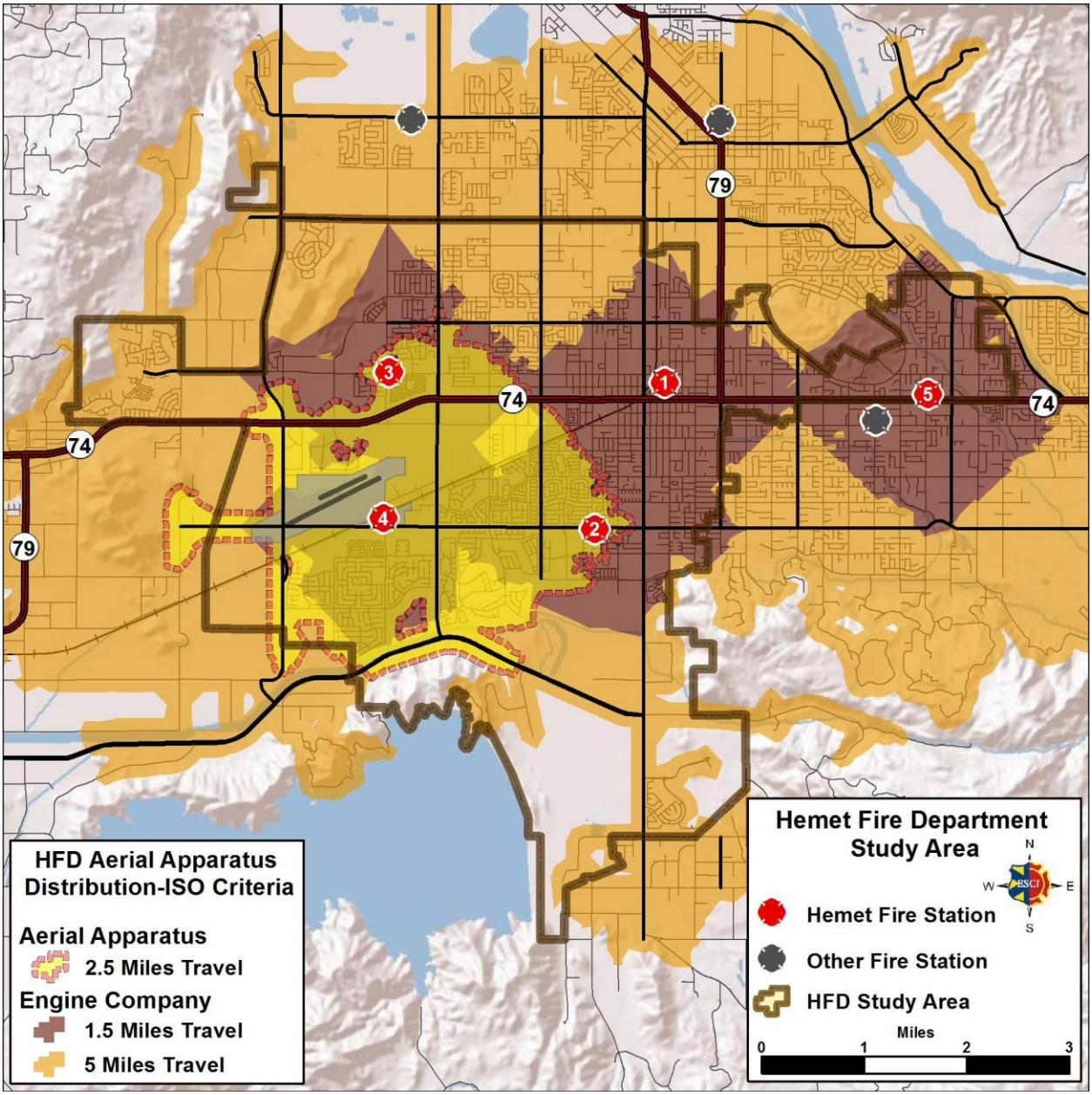
Figure 42: HFD Study Area Station Distribution, ISO Criteria



Approximately 67 percent of the current road network within Hemet is within 1.5 miles of a HFD fire station. All of the developed portions of city are within 5 miles of a fire station. Note that the squad currently stationed at Station 5 does not meet the ISO pumping capacity or equipment requirements for an engine company. Removing this station from the coverage calculation reveals that approximately 61 percent of the road network is within 1.5 miles of a HFD engine company.

Similar to engine company criteria, ISO recommends that ladder companies (aerial apparatus) be placed at 2.5-mile intervals in areas with buildings over three stories in height.

Figure 43: HFD Current Aerial Apparatus Distribution, ISO Criteria

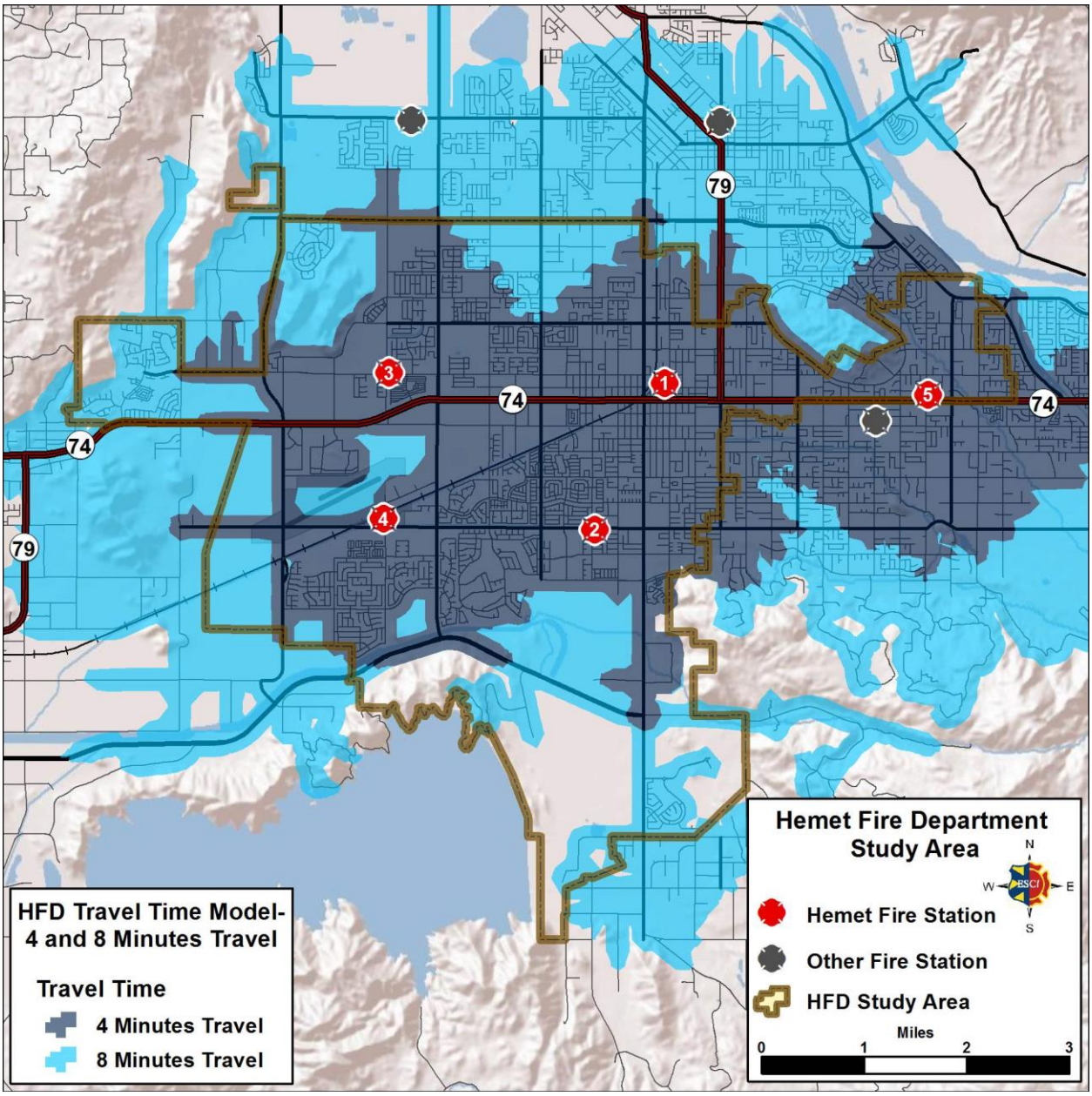


Currently the HFD aerial apparatus is housed at Station 4 and cross staffed by the three man company at this station. The majority of commercial properties and buildings over three stories are located in the downtown core area and along Highway 74 (Florida Ave) in the Station 1 response area. While the current cross-staffed aerial apparatus at Station 4 provides ladder company coverage, HFD should consider moving the aerial apparatus to Station 1. Further discussion of this option occurs in the Future Options portion of this report.

The most recent ISO Public Protection Classification for Hemet is a 4/9 rating (with 1 being the best and 10 being the worst). The first classification (4) applies to properties within five road miles of a recognized fire station and within 1,000 feet of a fire hydrant. The second classification (9) applies to properties within five road miles of a recognized fire station, but beyond 1,000 feet of a fire hydrant.

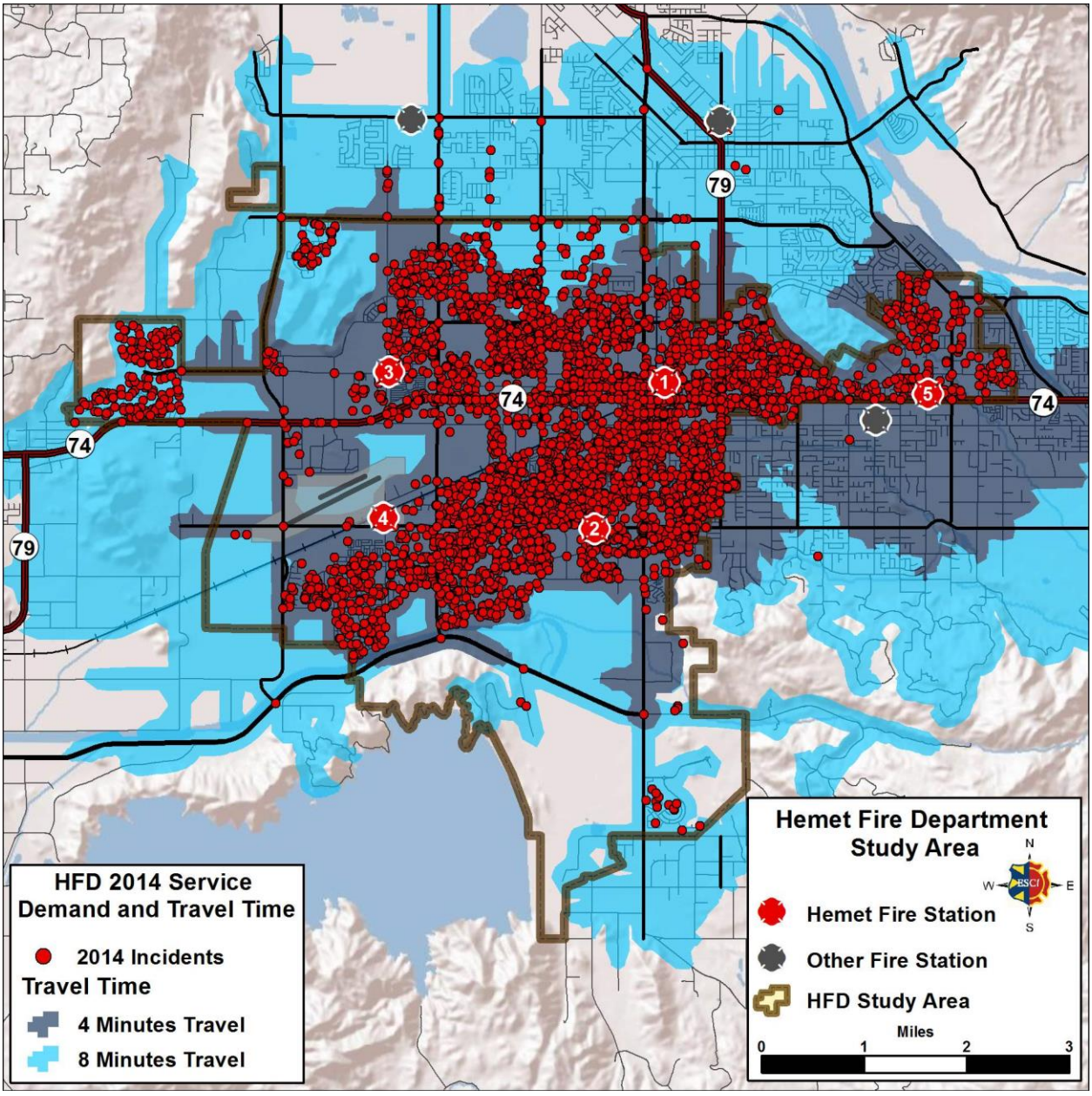
The ISO Public Protection Classification program only addresses fire suppression activities. Of equal importance is the travel time required to respond from a fire station to any emergency call for service. The following figures demonstrate travel time over the existing road network. Travel time is calculated using the posted speed limit and adjusted for negotiating turns and intersections.

Figure 44: HFD Travel Time Model, 4 and 8 Minutes Travel Time



The preceding figure demonstrates that the majority of the HFD service area is within four minutes travel of a currently staffed HFD fire station. More importantly, the following figure demonstrates the percentage of current service demand (2014) that is within four minutes travel of a HFD fire station.

Figure 45: HFD 2014 Service Demand and Travel Time



National standards, such as the *NFPA 1710,*[5] specify that career staffed, urban fire departments should deploy resources such that 90 percent of emergency service demand can be reached in four minutes travel or less. The previous figure illustrates that based on the four minute travel model; HFD apparatus

[5] *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* (National Fire Protection Association 2010).

can theoretically reach approximately 93 percent of current service demand within four minutes or less travel time. Actual HFD travel time and response time performance is discussed in the Response Performance Analysis later in this report.

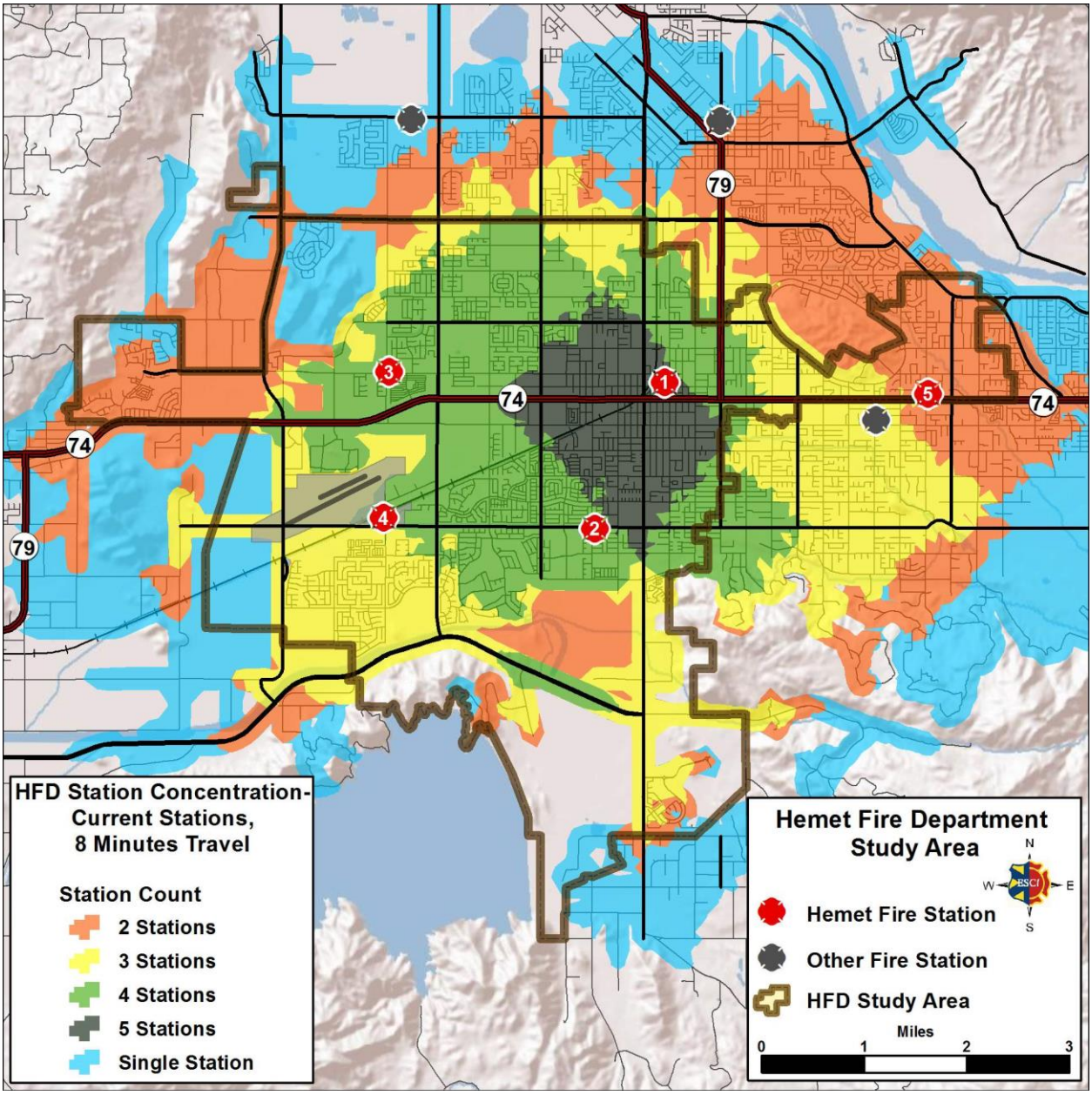
RECOMMENDATIONS:

- Work with Insurance Services Organization (ISO) to determine if current ladder truck deployment at Station 4 is optimal for ISO rating (ISO re-rating currently in progress).
- Work with city planners to stay apprised of planned new development and annexations that may affect the distribution of stations or apparatus.

Concentration Analysis

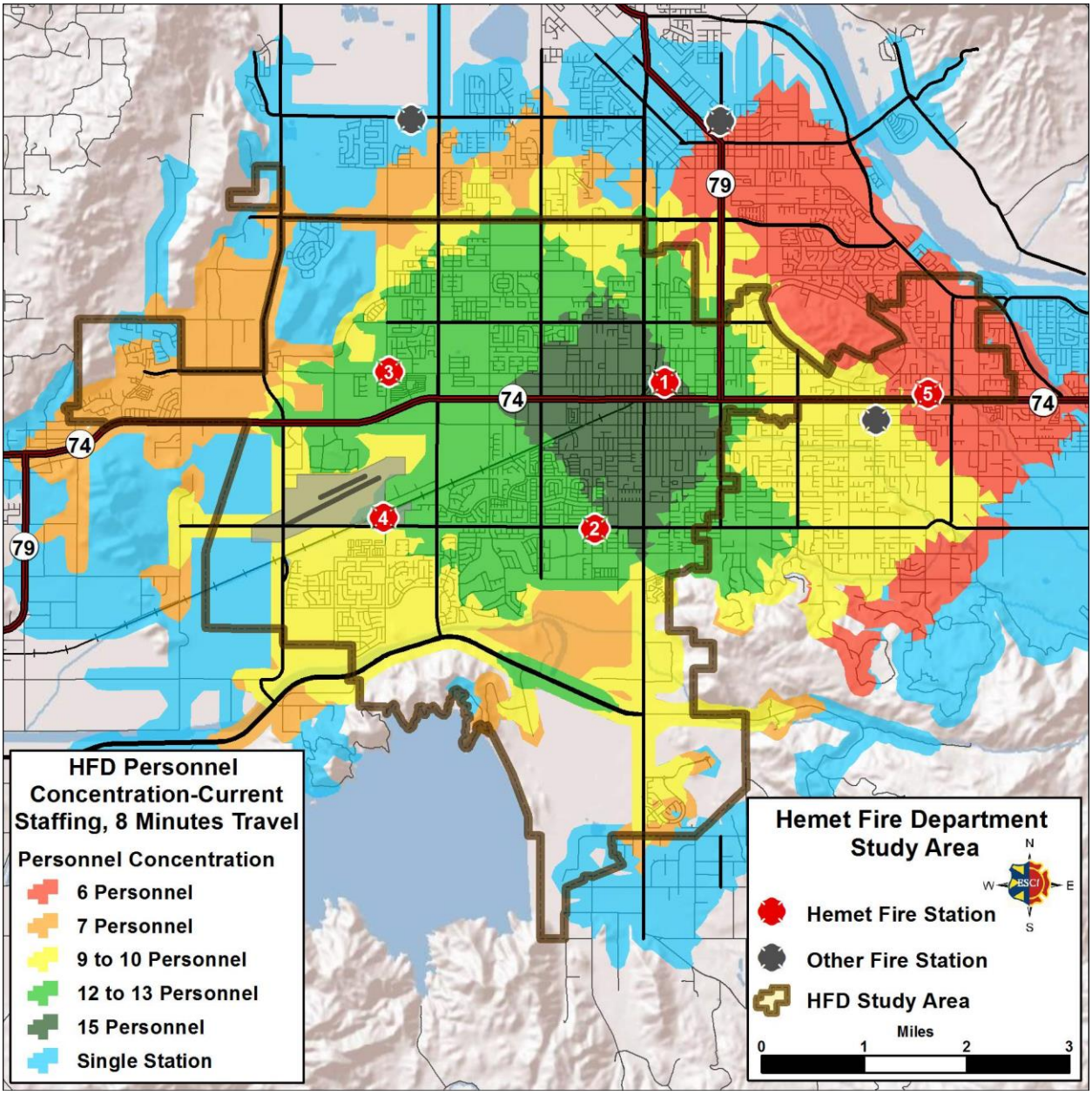
The concentration analysis examines HFD's ability to assemble multiple resources (both apparatus and people) such that sufficient resources to safely and effectively mitigate an emergency arrive in a timely manner. The following figure displays the concentration of HFD stations in the study area in eight minutes or less travel time. The eight-minute travel time criteria used for this analysis is based on the National Fire Protection Association (NFPA) *Standard 1710*. The 1710 standard specifies that the full first alarm assignment for a moderate risk structure fire (single story residential structure) should arrive within eight minutes travel.

Figure 46: HFD Station Concentration, Current 5 Stations



This figure illustrates that the central portion of Hemet is within eight minutes travel of four HFD stations. Portions of the downtown area are within eight minutes travel of all five HFD stations. As discussed in the demand analysis this area experiences the highest service demand in the service area. In addition to providing adequate resources for higher risk incidents, the overlapping coverage in the core area also provides additional resources to deal with the frequency of incidents. The following figure displays the number of personnel available within eight minutes travel or less, given the current staffing at the HFD stations.

Figure 47: HFD Personnel Concentration, Current Staffing and Stations

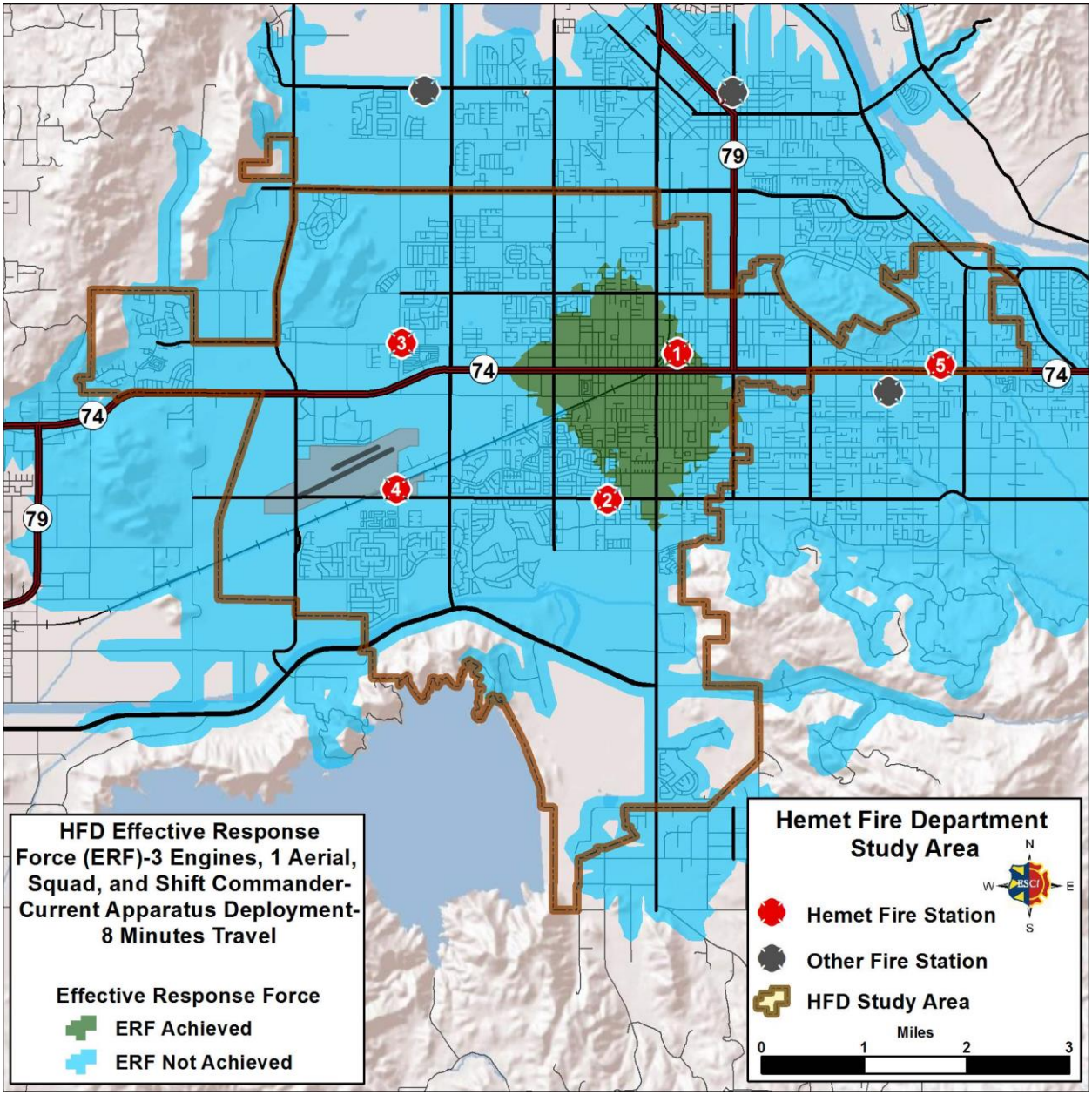


In this analysis the shift commander stationed at Station 1 is considered a roving resource; and is included in the personnel count for all portions of the service area. Industry best practices documents[6] suggest that 14 to 16 personnel are needed to mitigate a moderate risk structure fire. Appropriately, the highest concentration of operational personnel occurs in the portions of the HFD service area with the greatest service demand and highest risk. Note that the model above assumes that all HFD crews are in quarters and available to develop the personnel concentration displayed.

[6] Center for Public Safety Excellence/Commission on Fire Accreditation (CPSE/CFAI) *Standards of Cover, 5th Edition*.

The last figure in the concentration analysis illustrates the portions of the HFD service area within eight minutes travel of full first alarm assignment for a structure fire.

Figure 48: HFD Effective Response Force – 1st Alarm Assignment



The current HFD first alarm assignment for a moderate risk structure fire calls for apparatus from all five Hemet fire stations. The first alarm assignment consists of three engines, one aerial apparatus, the two person squad, and a command officer. This assignment of apparatus and personnel brings 15 personnel to the scene of a structure fire, which meets the CPSE/CFAI recommendation for an effective response force (ERF) of 14 to 16 personnel for a moderate risk fire suppression incident. The previous figure demonstrates that only a small portion of the service area is within eight minutes travel of a full first

alarm assignment. As previously discussed, this figure demonstrates potential performance based on travel time. Actual response performance is discussed in the Performance Analysis.

Reliability

The workload of emergency response units can be a factor in response time performance. The busier a given unit, the less available it is for the next emergency. If a response unit is unavailable, then a unit from a more distant station (or mutual aid department) must respond, increasing overall response time. Although fire stations and units may be distributed in a manner to provide quick response, that level of performance can only be obtained when the response unit is available in its primary service area.

Simultaneous or concurrent incidents can affect a fire department's ability to muster sufficient resources to respond to additional emergencies. The following figure demonstrates the percentage of time that HFD resources were committed to more than one incident at the same time in 2014.

Figure 49: HFD Concurrent Incidents, 2014

Concurrent Incidents	Percentage
Single Incident	39.37%
2	37.00%
3	16.91%
4	4.85%
5	1.18%
6 or More	0.74%

Just over 39 percent of 2014 service demand within Hemet occurred as a single event. Over 60 percent of the time, two or more incidents were in progress in the HFD service area. The percentage of concurrent incidents in Hemet is higher than that experienced by similar fire jurisdictions; and is likely attributed to the higher than normal number of EMS incidents in the HFD service area.

Unit hour utilization (UHU) describes the amount of time that a unit is not available for response because it is already committed to another incident. The larger the number, the greater its utilization and the less available it is for assignment to subsequent calls for service. The following figure displays the total time HFD apparatus were committed to an incident in 2014 and expresses this as a percentage of the total hours in the year.

Figure 50: HFD Unit Hour Utilization, 2014 Incidents

Apparatus	Total Time Committed	Average Time Committed	UHU
B1 (Command)	146:16:28	35:41	1.67%
ASQ1 (Squad)	1280:56:18	18:44	14.62%
Engine 1	778:14:16	18:42	8.88%
Engine 2	1138:27:12	19:30	13.00%
Engine 3	1104:00:03	18:35	12.60%
Engine 4	664:25:11	19:58	7.58%
Truck 1	114:04:04	22:49	1.30%

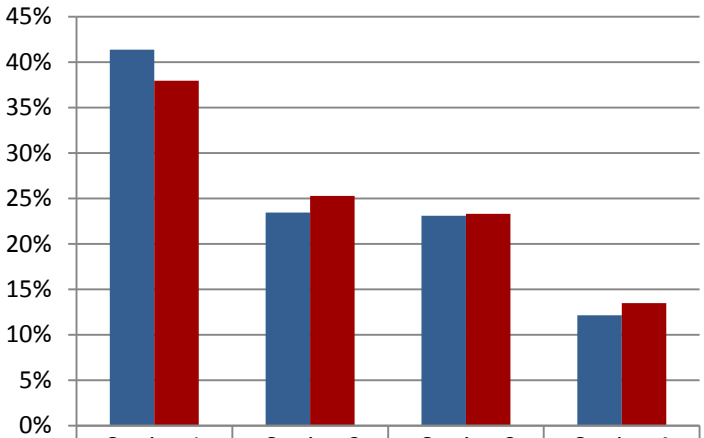
Although HFD apparatus responded to over 14,800 incidents in 2014; the preceding figure reveals that the average time an apparatus is committed to an incident is relatively low. Fire service publications such as the Commission on Fire Accreditation (CFAI) *Standards of Cover, 5th Edition*, suggest that UHU rates in the range of 25 to 30 percent can negatively affect response performance and lead to personnel burnout issues. HFD apparatus do not demonstrate excessive UHU rates currently; however the first out apparatus respond to a substantial number of incidents per apparatus. The next two figures display the workload per first out apparatus and overall workload per station in 2014.

Figure 51: HFD Apparatus Workload-First Out Apparatus, 2014

Apparatus	Count of Incidents
ASQ1 (Squad)	3618
Engine 1	2081
Engine 2	3268
Engine 3	3258
Engine 4	1705

The previous figure demonstrates that the two apparatus stationed at Station 1 during 2014 responded to nearly 5,700 incidents in 2014. The first out apparatus at Station 2 and Station 3 each responded to over 3,200 incidents. Engine 4 responded to over 1,700 incidents. Note that cross-staffed apparatus such as Truck 1 at Station 4 and the wild-land engine (BR 1) at Station 1 are not included in this table. Also cancelled incidents and incidents with no arrival time are not included.

Figure 52: HFD Station Workload, 2014



	Station 1	Station 2	Station 3	Station 4
All Incidents	41.4%	23.4%	23.1%	12.1%
Emergency Incidents	37.9%	25.3%	23.3%	13.5%

Previous figure displays the percentage of workload per HFD station, both for overall service demand and emergent incidents. The percentage of incidents per station is calculated separately for "All

Incidents" and "Emergency Incidents." Station 1 displays the highest percentage of 2014 service demand, while Station 4 demonstrates the lowest percentage of demand.

Note that the percentage of all incidents in the Station 1 response zone represents nearly 6,000 incidents. This amount of service demand is beyond the capacity of a single company. Appropriately, HFD utilized 2 apparatus at Station 1 (Engine 1 and Squad 1) to handle the service demand in 2014. Currently Squad 1 is deployed at Station 5. This may result in increased workload and negatively affect response performance in the current Station 1 response zone.

RECOMMENDATIONS:

- Monitor Unit Hour Utilization (UHU) for first out apparatus, especially in the Station 1 area.

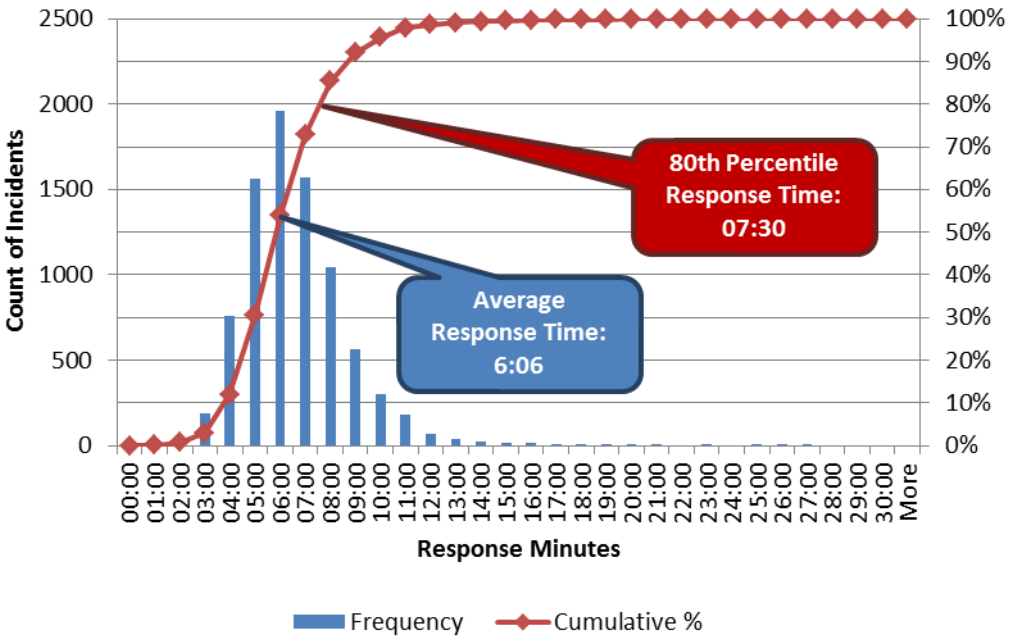
Response Performance

Perhaps the most publicly visible component of an emergency services delivery system is that of response performance. Policy makers and citizens want to know how quickly they can expect to receive emergency services. In the performance analysis, ESCI examines emergency response performance within the HFD service area. The data used for this analysis is 2014 emergency responses extracted from the HFD records management software (RMS). Non-emergent incidents, mutual/automatic aid incidents outside the HFD service area, incidents cancelled prior to arrival, data outliers, and invalid data points are removed from the data set.

Response time is measured from the receipt of the call at the 911 center to when the first HFD apparatus arrives on the scene of an emergency. Response performance is calculated using "percentile" measurement. The use of percentile calculations for response performance follows industry best practices and is considered a more accurate measure of performance than "average" calculations.

The first figure in the performance analysis displays overall emergency response performance throughout the HFD service area in 2014. Average response time is displayed, along with the 80th percentile total response time to illustrate the difference between measuring average and percentile response performance.

Figure 53: HFD Emergency Response Frequency, 2014



The most frequently recorded emergency response time is within the sixth minute (6 minutes 6 seconds), which represents approximately 54 percent of emergency incidents. Eighty percent of the time (80th percentile), the first HFD apparatus arrived at the scene of an emergency incident in seven minutes 30 seconds or less during 2014.

Total response time is comprised of several different components:

- Call Processing Time – The amount of time between when a dispatcher answers the 911 call and resources are dispatched.
- Turnout Time – The time interval between when units are notified of the incident and when the apparatus are enroute.
- Travel Time – The amount of time the responding unit actually spends travelling to the incident.
- Total Response Time – Total Response Time equals the combination of "Processing Time," "Turnout Time," and "Travel Time."

Tracking the individual pieces of total response time provides the information necessary to identify deficiencies and areas for improvement. In the following analysis, ESCI compares 2014 HFD emergency response performance against the City of Hemet Measure EE, which states "A response time of five (5) minutes or less for 80 percent of fire and emergency medical calls will be provided on both a citywide and response area basis." Note that the performance standard does not address non-emergent fire and medical calls. 90th percentile emergency response performance is also calculated; since this is the performance goal of the *NFPA 1710 Standard for Career Fire Departments*. Note that the NFPA standard provides performance goals for each of the components of total response time; and provides a point of reference against which performance can be measured. The standards are not mandates or requirements. However, they represent industry best practices and should be viewed as desirable goals.

The next figure displays the NFPA 1710 performance goals for each of the components of total response performance.

Figure 54: NFPA 1710 Recommendation

Response Element	NFPA Recommendation
Call Processing[7]	60 seconds- 90th Percentile
Turnout Time	60 seconds- 90th Percentile for Medical 1 minute 20 seconds- 90th Percentile for Fire
Travel Time	4 minutes

The NFPA 1710 standard does not include a recommendation for total response time. The combination of the components of response performance results in a total response time of six minutes for medical emergencies and six minutes 20 seconds for fire emergencies.

The following figure examines HFD 2014 performance for the various components of total response time.

Figure 55: HFD Emergency Response Time Performance, 2014

	Total Response Time Continuum			
	Call Processing	Turnout	Travel	Total Response Time
80th Percentile	00:24	02:36	05:03	07:30
90th Percentile	00:54	03:05	06:05	08:39

Currently HFD emergency response performance does not meet the City of Hemet Measure EE response time performance standard. HFD also does not meet *NFPA 1710 Standard for Career Fire Departments* performance goal of four minutes travel time or less for emergency responses-measured at the 90th percentile. See *Distribution Performance Criterion* in the Future Delivery System Standards & Targets section for discussion and recommendations on this.

Call Processing Time

The Hemet Police Department Communications Center serves as the public safety answering point (PSAP) for 911 emergency calls. The communications center also serves as the dispatch center for HFD. The previous figure demonstrates that the Hemet Communications Center is currently meeting the NFPA 1710 call processing time goal. The dispatch center is not under the direct control of the fire department, however fire department leaders must continually monitor call processing time and work cooperatively with the dispatch agency to continue to meet standards.

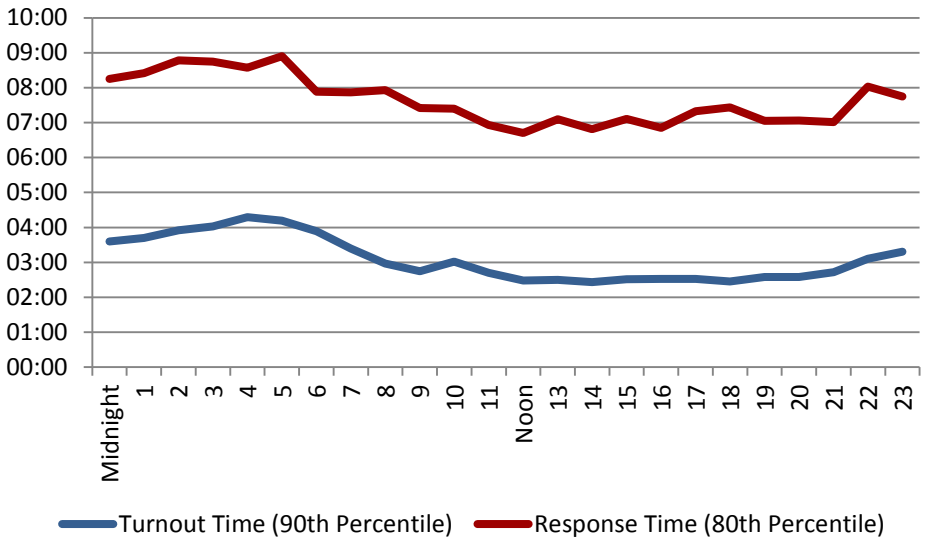
[7] *NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*.

Turnout Time

The second component of the response continuum, and one that is directly affected by fire department personnel, is turnout time. Turnout is the time it takes personnel to receive the dispatch information, don personal protective equipment as appropriate, move to the appropriate apparatus and proceed to the incident.

ESCI is unaware of any departmental goal or standard for turnout time performance at HFD. As seen in the previous figure, HFD turnout time performance does not meet industry best practices and appears to be excessive for a career staffed fire agency. The following figure displays the almost direct correlation between turnout time and total response performance.

Figure 56: HFD Turnout Time and Response Performance, 2014



The rise in turnout time at night is a nationwide phenomenon and is reflected in the increase in total response time during the same period. Turnout time is one component of total response time that fire department personnel have some ability to control; given training, information, and proper facilities that allow for the rapid and efficient movement of responders. ESCI encourages HFD to monitor turnout time performance and provide performance information to response personnel for self-correction. This is the area of greatest potential improvemet in response time performance.

Travel Time

Travel time is potentially the longest component of total response time. The distance between the fire station and the location of the emergency influences total response time the most. The quality and connectivity of streets, traffic congestion, and geography all play crucial roles in travel time.

Figure 57: HFD Emergency Travel Time Performance, 2014

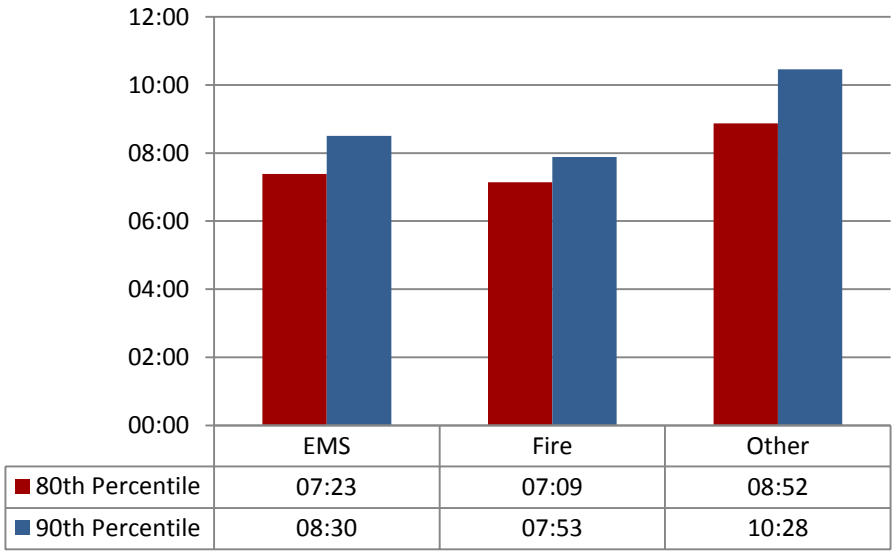
2014 Travel Time Performance		
Apparatus	80th Percentile	90th Percentile
B1 (Command)	03:59	05:07
ASQ1 (Squad)	04:59	06:10
Engine 1	04:55	06:06
Engine 2	04:04	04:53
Engine 3	05:36	06:29
Engine 4	05:18	06:18
Truck 1	06:32	07:19

As seen in Figure 55, overall travel time performance is five minutes three seconds measured at the 80th percentile and six minutes five seconds measured at the 90th percentile. Figure 57 illustrates that no HFD apparatus meets the industry best practice travel time criteria of four minutes at 90 percent. However, in ESCI's experience, HFD travel time performance parallels that of comparable fire jurisdictions.

Total Response Time

Total response time is the sum of "call processing time," "turnout time," and "travel time." The following figure illustrates HFD total response time performance summarized by incident category.

Figure 58: HFD Response Time Performance by Incident Category, 2014



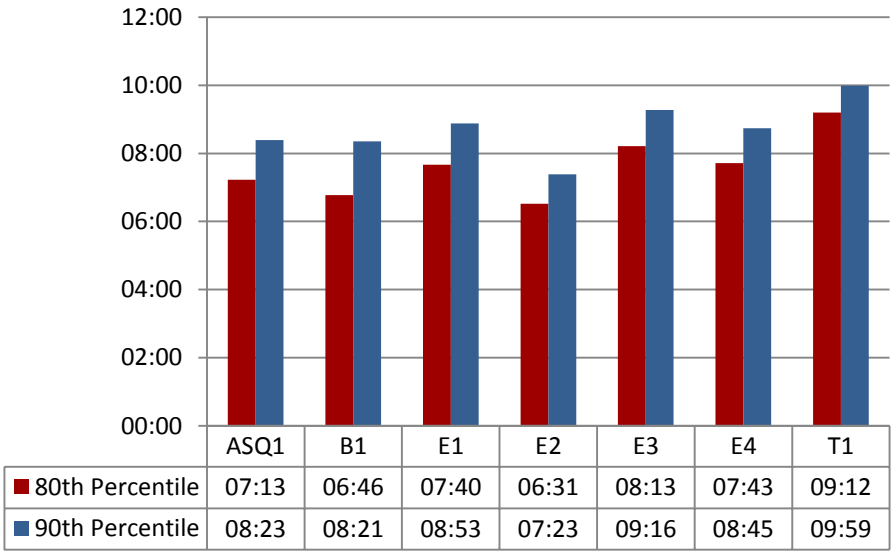
	EMS	Fire	Other
80th Percentile	07:23	07:09	08:52
90th Percentile	08:30	07:53	10:28

In the preceding figure, "Fire" refers to any incident coded as a fire in the NFIRS data. The "EMS" category includes all calls for medical service including MVAs and rescues; and the "Other" category refers to incidents such as hazmat, false alarms, service calls, or weather related incidents. Note that emergency total response performance does not meet either the City of Hemet Measure EE performance standard of five minutes (80th percentile) for fire and emergency medical responses, or the NFPA 1710 standard of 6 minutes 20 seconds for emergency fire responses and six minutes for

emergency medical responses (based on the combination of call processing, turnout time, and travel time, 90th percentile). Both the Hemet Measure EE and the NFPA standard apply to the first apparatus on scene.

The following figure displays total response time performance for HFD apparatus during 2014.

Figure 59: HFD Total Response Performance by Apparatus, 2014

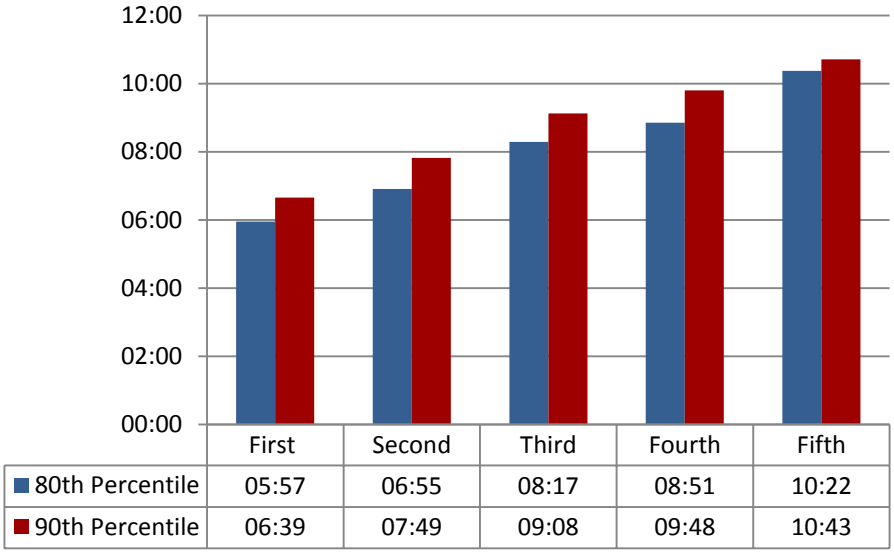


	ASQ1	B1	E1	E2	E3	E4	T1
80th Percentile	07:13	06:46	07:40	06:31	08:13	07:43	09:12
90th Percentile	08:23	08:21	08:53	07:23	09:16	08:45	09:59

This figure illustrates that response performance varies by apparatus throughout the HFD service area. Again, no HFD apparatus meets the Hemet Measure EE response time performance standard or the NFPA 1710 standard. Comparing the travel time data in Figure 57, with the data in this figure (Figure 59) reveals the relationship between travel time and total response time. Units with the shortest travel time demonstrate the best total response time performance.

Up to this point, the performance analysis has been concerned with response time performance for the first arriving apparatus. The last analysis in the performance summary examines response performance as it pertains to the assembly of multiple apparatus at a structure fire. As discussed in the concentration study, a full first alarm assignment for a structure fire consists of three engines, one aerial device, the squad unit, and a command officer. This brings 15 personnel to the scene of a structure fire. This complement of personnel and apparatus would be considered a full first alarm or Effective Response Force (ERF). The following figure examines HFD's response performance for the first though the fifth apparatus on scene at structure fires in 2014.

Figure 60: HFD Structure Fire Response Performance by Arrival Order, 2014



	First	Second	Third	Fourth	Fifth
80th Percentile	05:57	06:55	08:17	08:51	10:22
90th Percentile	06:39	07:49	09:08	09:48	10:43

For this analysis, ESCI examines 2014 incidents classified as a structure fire in the HFD incident data. The first arriving apparatus generally waits approximately one minute for the second apparatus to arrive (at both the 80th and 90th percentile). The difference between the first unit and the fifth unit is four to 4.5 minutes. Industry best practices call for the full first alarm to arrive at a fire suppression incident within eight minutes total response time. HFD response performance does not meet the eight minute benchmark for the arrival of a full first alarm at a structure fire.

RECOMMENDATIONS:

- Develop a methodology to monitor all components of the total response time continuum. Consider adding a part-time data analyst to coordinate data gathering and analysis.
- Establish performance goals for turnout time performance and work with on duty crews to improve turnout time performance.
- Monitor total response time performance by incident category, station response area, and for the overall HFD service area.
- Establish response performance goals for each of the parameters in the previous recommendation (incident category, station response area, overall HFD service area).
- Clarify the definition of "response time" as it pertains to Measure EE.

Mutual and Automatic Aid

Communities have traditionally forged limited agreements to share resources under circumstances of extreme emergencies or disasters. These agreements, known as mutual aid agreements, allow one community to request the resources of another in order to mitigate an emergency situation or disaster that threatens lives or property. Automatic aid takes the process an additional step further by spelling

out certain circumstances under which one or more community's specific resources will respond automatically upon notification of a reported incident in the neighboring community. In essence, automatic aid agreements expand a community's initial first alarm response to certain types of incidents by adding resources from a neighbor to that response protocol. Typically, such agreements are for specific geographic areas where the neighbor's resource can be expected to have a reasonable response time and are for only specific types of incidents.

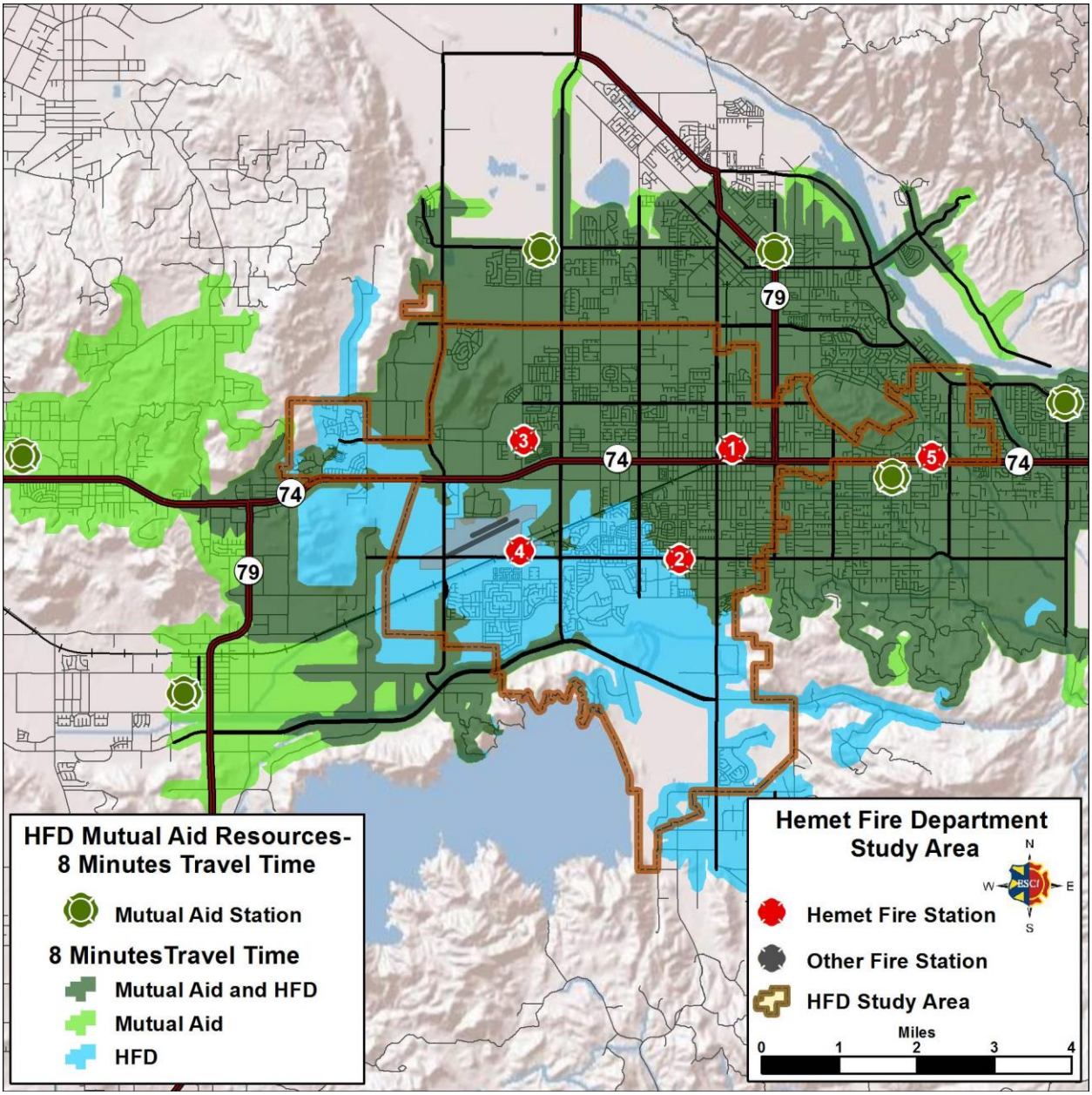
The Hemet Fire Department participates in the California Mutual Aid System, the California Fire Assistance Agreement, and the Riverside County Automatic Aid Agreement. The following figure summarizes mutual/automatic aid incidents in 2014.

Figure 61: HFD Mutual/Automatic Aid, 2014

Mutual and Automatic Aid	
Type of Aid	Number of Incidents
Mutual Aid Received	32
Automatic Aid Received	7
Mutual Aid Given	19
Automatic Aid Given	2
Other Aid Given	2
Total	62

Mutual or automatic aid responses, either given or received, represent less than .5 percent of the 2014 call volume. The following figure displays mutual aid resources within eight minutes travel or less of the HFD service area.

Figure 62: Mutual/Automatic Aid Resources within 8 Minutes Travel Time



There are six fire stations within eight minutes travel of some portion of the HFD service area. These six stations are all operated by the Riverside County unit of CAL FIRE. Two of the stations are located in the City of San Jacinto, north of Hemet. Note that Fire Station 78 (West San Jacinto), located approximately 2.5 miles north of HFD Station 3; is currently not staffed due to budgetary considerations. The other four CAL FIRE stations are located in unincorporated Riverside County. As opposed to more heavily developed and populated portions of Riverside County, mutual aid resources are limited in the HFD service area. However, the previous figure demonstrates that mutual/automatic aid resources are available within eight minutes, to bolster HFD's ability to effectively mitigate an emergency. ESCI also believes that HFD Station 5 and the CAL FIRE Little Lake Station (located less than one mile apart);

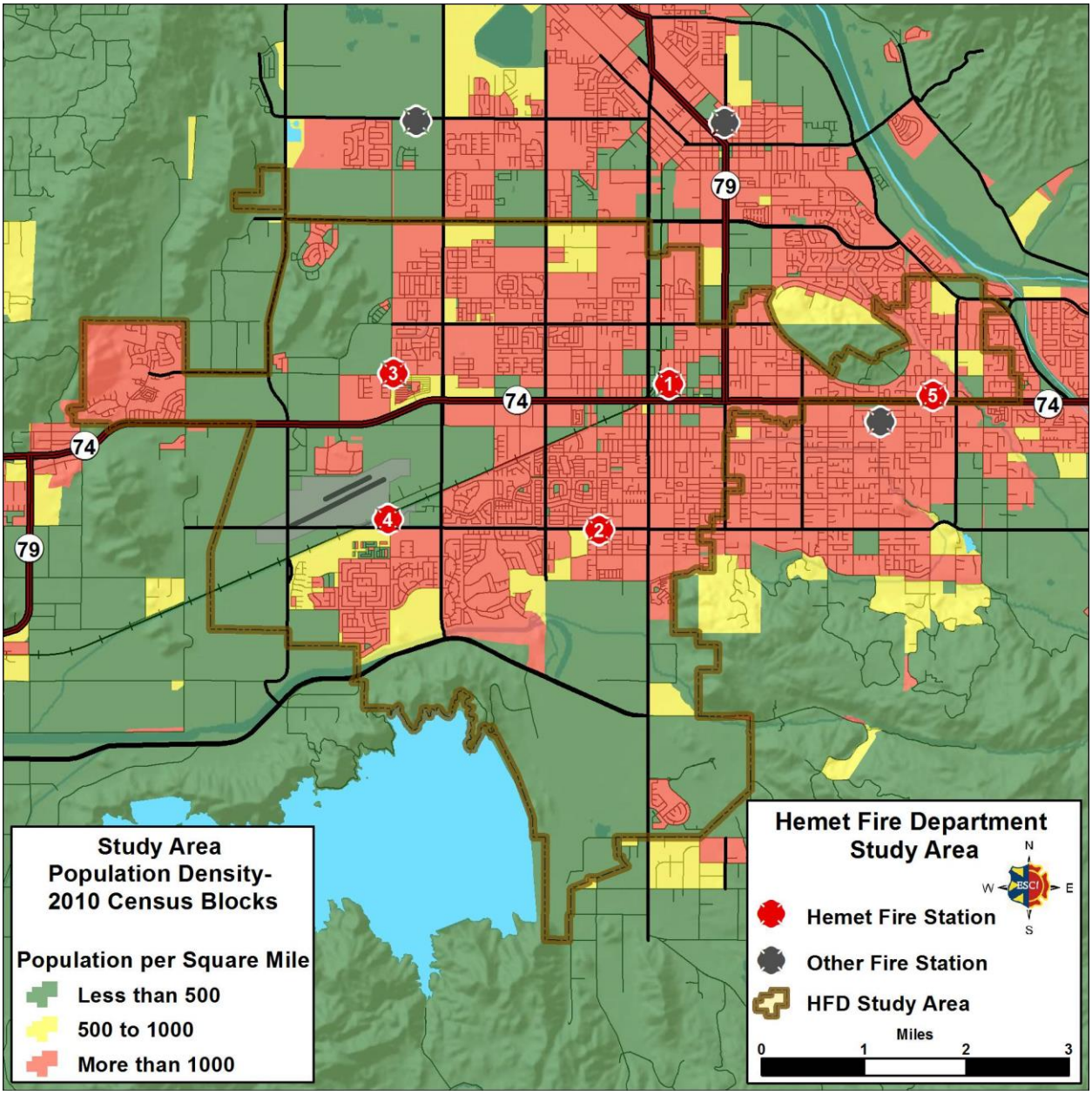
provide an opportunity for increased cooperative efforts. Such efforts could be cost effective and mutually beneficial for both HFD and CAL FIRE. More discussion of this option is provided in the Future Options portion of this report.

COMMUNITY RISK ANALYSIS

Community Risk Review

Community risk is assessed based on a number of factors; the service area population and population density, the demographics of the population served, local land use and development, and the geography and natural risks present within the community. These factors affect the number and type of resources (both personnel and apparatus) necessary to mitigate an emergency. The following figure examines population density in the HFD service area.

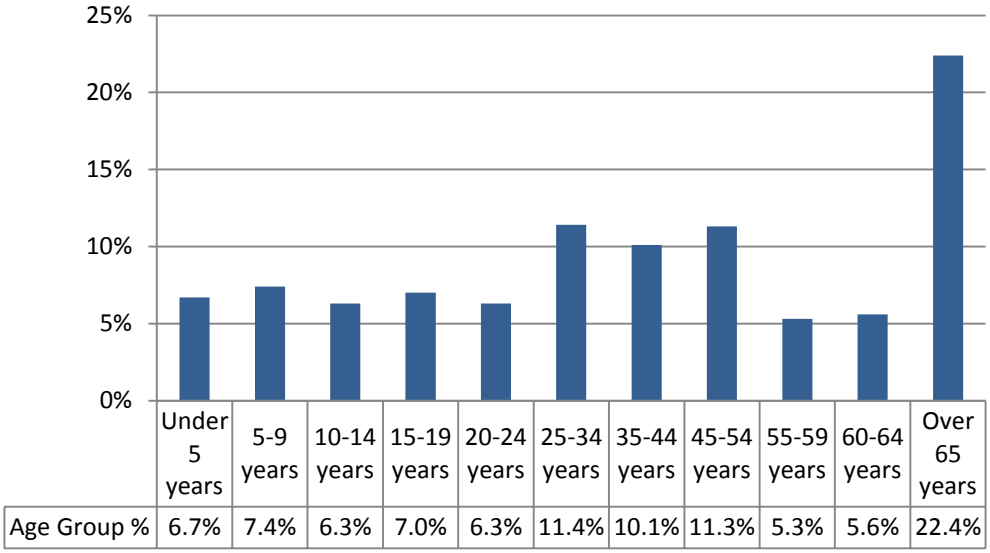
Figure 63: HFD Study Area Population Density, 2010 Census Blocks



The population in Hemet tends to be concentrated in the center of the community and in neighborhoods and planned development, surrounded by less densely populated areas on the outskirts of the service area. The areas displaying the highest population density correspond to the areas with the highest service demand illustrated in the Service Demand analysis.

In addition to the distribution of the population, the demographics of the population can affect the amount of service demand and the nature of risk within a community. The following figure displays the population by age group within the Hemet service area.

Figure 64: HFD Study Area Population by Age, 2013 Census Data



According to the 2013 Census Bureau estimate, over 22 percent of the population of Hemet is over 65 years of age. This is nearly double the same metric for Riverside County and approximately nine percent higher than the national percentage of persons over 65. As discussed in the Service Delivery analysis, EMS incidents represent an unusually high percentage (over 84 percent) of HFD service demand. The percentage of seniors in Hemet is a factor that increases service demand and hence community risk in the service area. NFPA studies indicate the population over 65 or less than 5 is at a higher risk for fatalities in residential fires.

In the following figure, ESCI displays other demographic values for Hemet from the 2013 Census Bureau estimates; and compares these values to those of Riverside County and the nation.

Figure 65: HFD Study Area Demographics, 2013 Census Data

Demographic	Hemet	Riverside County	National
Median household income, 2009-2013	$32,774	$56,529	$53,046
Owner-occupied Housing, 2009-2013	59.2%	66.5%	64.9%
Persons without health insurance, under age 65 years	24.2%	22.5%	15.3%
Personal Income below Federal Poverty Level	23.3%	17.8%	14.5%

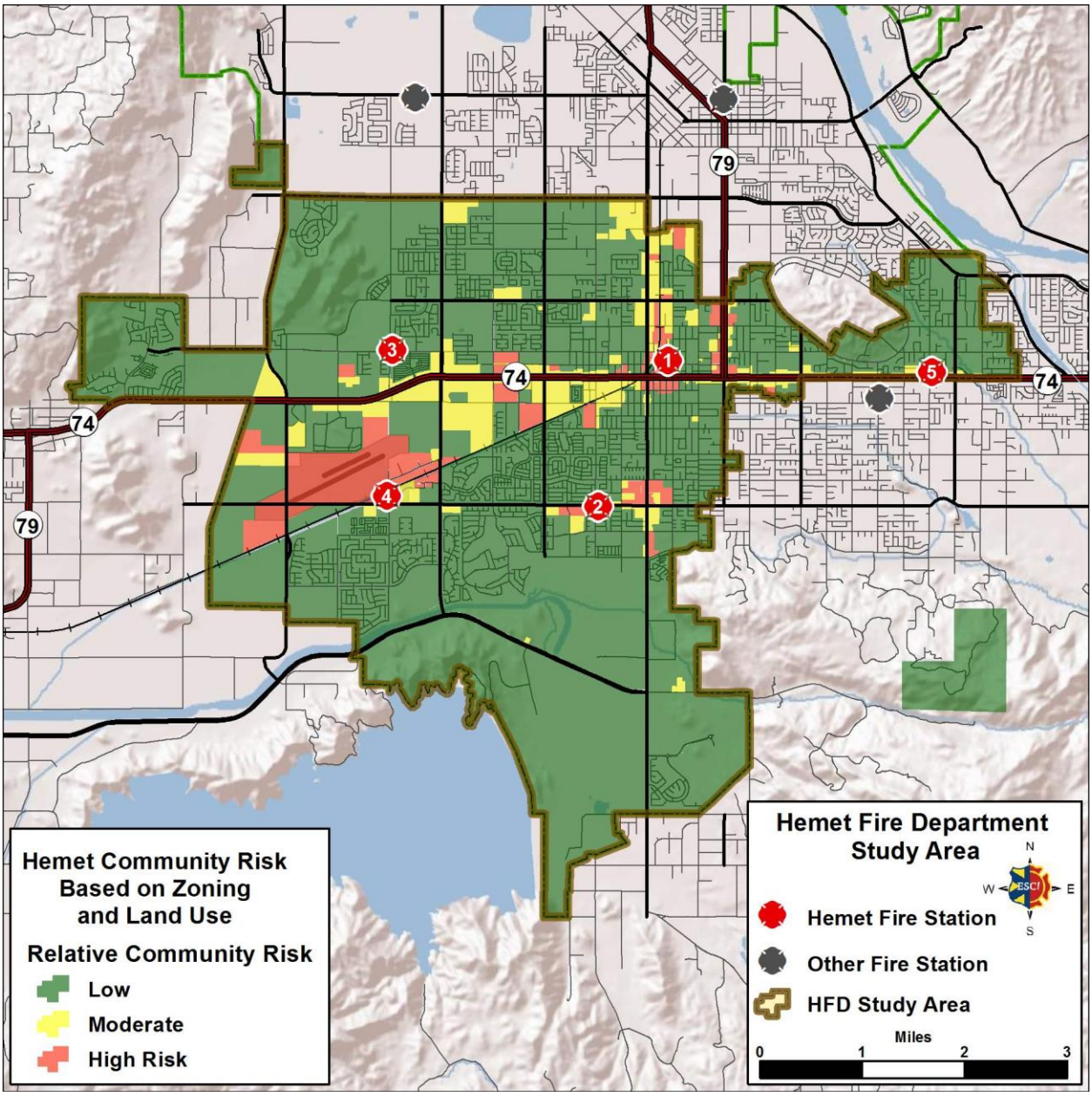
The demographics displayed above are factors that may indicate a population that is more likely to use fire department services than other populations. Individuals with lower incomes and no health insurance are more likely to use local EMS resources than individuals with health insurance and a personal physician. A high percentage of owner occupied homes generally equates to wage earners willing to invest in their community.

ESCI uses GIS software and zoning classifications for the City of Hemet to examine current land use. Risk is assigned to the zoning classifications to present a view of relative community risk.

- **Low Risk** – Areas zoned for agricultural purposes, open space, low-density residential and other low intensity uses.
- **Moderate Risk** – Areas zoned for medium-density single-family properties, small commercial and office uses, low-intensity retail sales, and equivalently sized business activities.
- **High Risk** – Higher-intensity business districts, mixed use areas, high-density residential, industrial, warehousing, and large mercantile centers.

The following figure maps community risk within the HFD service area using the criteria listed above.

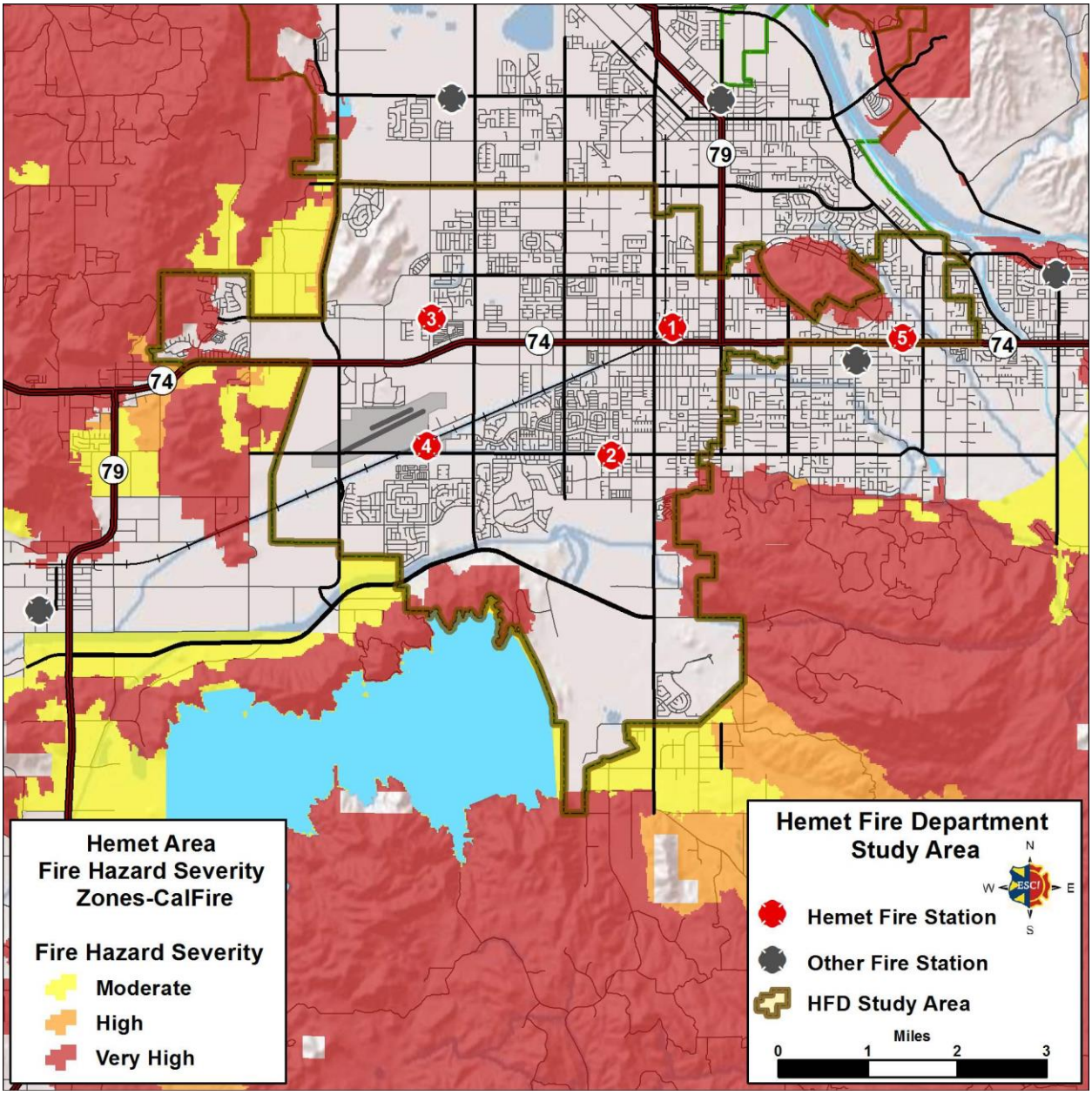
Figure 66: HFD Service Area Community Risk by Zoning and Land Use



The Hemet service area is a mix of low, moderate, and high risk properties. Residential properties are primarily low density residential properties classified as a low level of relative risk. However, there are clustered neighborhoods consisting of mobile homes within the service area that could be considered a moderate risk. Moderate risk properties are predominantly commercial properties and tend to be distributed along the major transportation routes through Hemet. Areas classified as high risk are primarily zoned for manufacturing and industrial uses. This includes the area around the Hemet-Ryan Airport. Some portions of the downtown core are also classified as high risk; due to the density and nature of the building construction.

Like many fire jurisdictions in the Western United States, especially California; wild-land fire risk is a factor in the HFD service area. The following figure uses CAL FIRE GIS data to examine wild-land fire risk in and around Hemet.

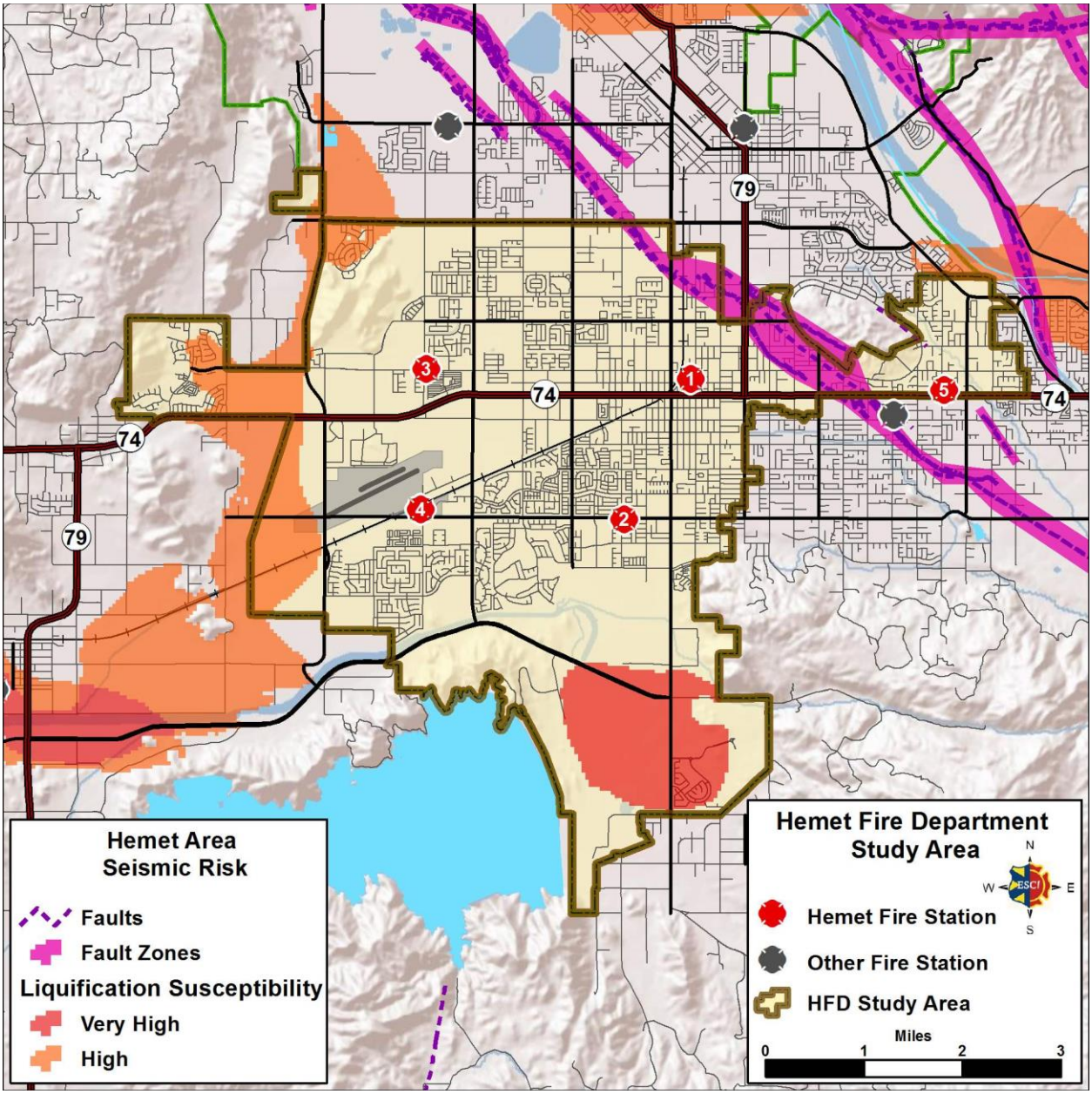
Figure 67: HFD Study Area Wild-land Fire Risk



This model produced by CAL FIRE considers vegetation, topography, weather, crown fire potential, and ember production and movement; to summarize fire hazard zones as moderate, high, or very high. This figure demonstrates that the HFD service area is surrounded by areas of all three hazard classifications. Some areas classified as a very high hazard zone extend into the city. Hemet Fire Department participates in state and county level mutual aid agreements which provide additional resources to deal with wild-land fire incidents. CAL FIRE aircraft stationed at the Hemet-Ryan Airport to provide a rapid response in the region. The City of Hemet has incorporated mechanisms into the municipal code to reduce fire hazards in interface areas within the city.

Earthquakes occur throughout California, but certain areas have a higher probability of experiencing damaging ground motions caused by seismic activity. There are several active faults in the Hemet area and Hemet has experienced destructive seismic activity in the past. The following figure illustrates fault lines and areas susceptible to liquefaction in the Hemet Area.

Figure 68: HFD Study Area Seismic Risk

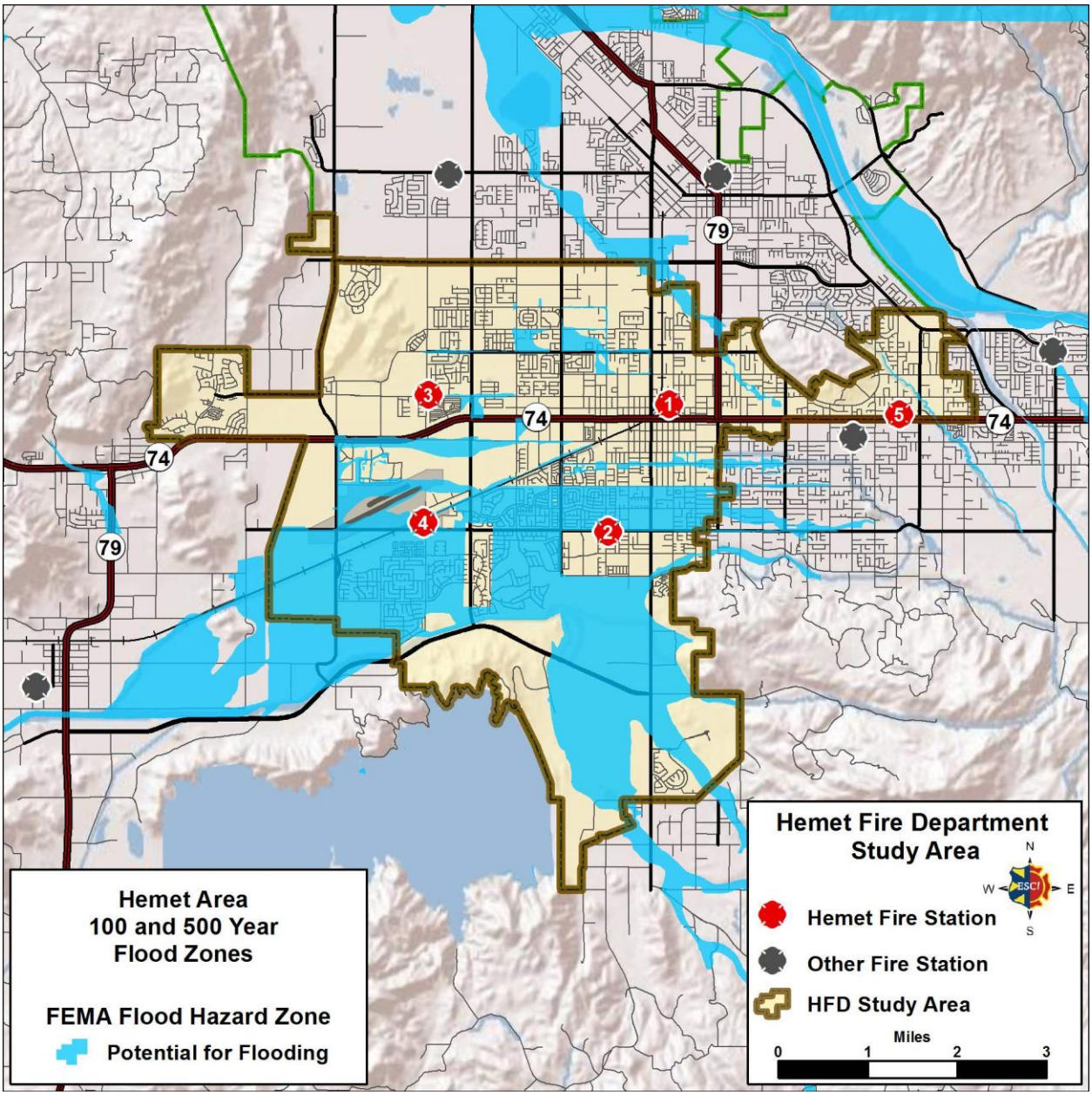


The San Jacinto Fault runs through the northeastern corner of Hemet. This fault is a major branch of the San Andreas Fault and considered active. Liquefaction is a phenomenon by which the strength of soil decreases due to increased water pressure during a seismic event. This leads to additional structural damage due to failing foundations. Areas in and around Hemet are identified as having a high or very high susceptibility to liquefaction. Note that nearly the entire Hemet area is considered at moderate risk

of liquefaction. Due to the California's history of seismic activity, there are numerous state and local regulations and codes in place to mitigate seismic risk. Hemet has identified unreinforced masonry structures in the downtown area and adopted standards to ensure that the buildings will be brought up to current standards as building permits are requested for improvements.

There is significant flooding risk within the Hemet area. The city is located in the San Jacinto Valley near natural and man-made bodies of water. The topography of the area is flat and does not drain well when exposed to excessive storm water. The following figure demonstrates the 100 and 500 year flood zones in the Hemet area.

Figure 69: HFD Study Area Flood Zones



The data displayed in the previous figure is derived from Federal Emergency Management Agency (FEMA) national flood hazard zone data. The figure illustrates that much of the city south of Highway 74 is within a flood zone. Hemet has adopted standards within the flood hazard zones to reduce the potential for loss of life and property damage. Also, as required by the California Office of Emergency Services (OES) the city has adopted emergency procedures to deal with a catastrophic failure of the dam on Diamond Valley Lake.

The Hemet Fire Department is the first responder for hazardous materials incidents within the City of Hemet. Six HFD personnel are trained to the hazardous materials technician level and participate as members of a regional team. There are no hazardous waste disposal sites or collection centers in the Hemet area. However commercial and industrial facilities use and store hazardous materials as part of daily operations. Hazardous material use and storage is highly regulated from the federal down to local level. ESCI encourages HFD to work with the local emergency planning committee and the California State Emergency Response Commission to identify and preplan buildings where hazardous materials are stored or used. These facilities are typically referred to as tier II reporting facilities.

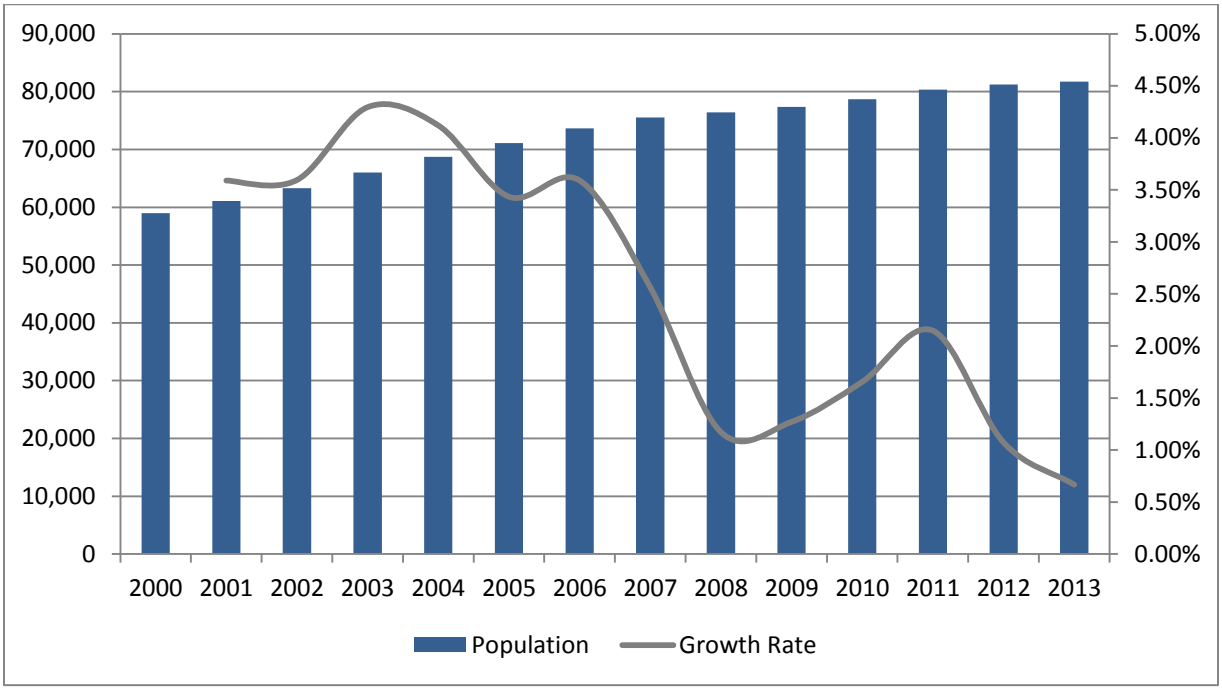
Growth & Demand Projections

In preparing for the development of future service delivery options, it is first necessary to evaluate the population history of the response area and to attempt to predict how populations will change over the next two decades. These changes in populations will directly impact the service demand of the organizations and could stress resources if not properly deployed.

POPULATION HISTORY AND GROWTH PROJECTIONS

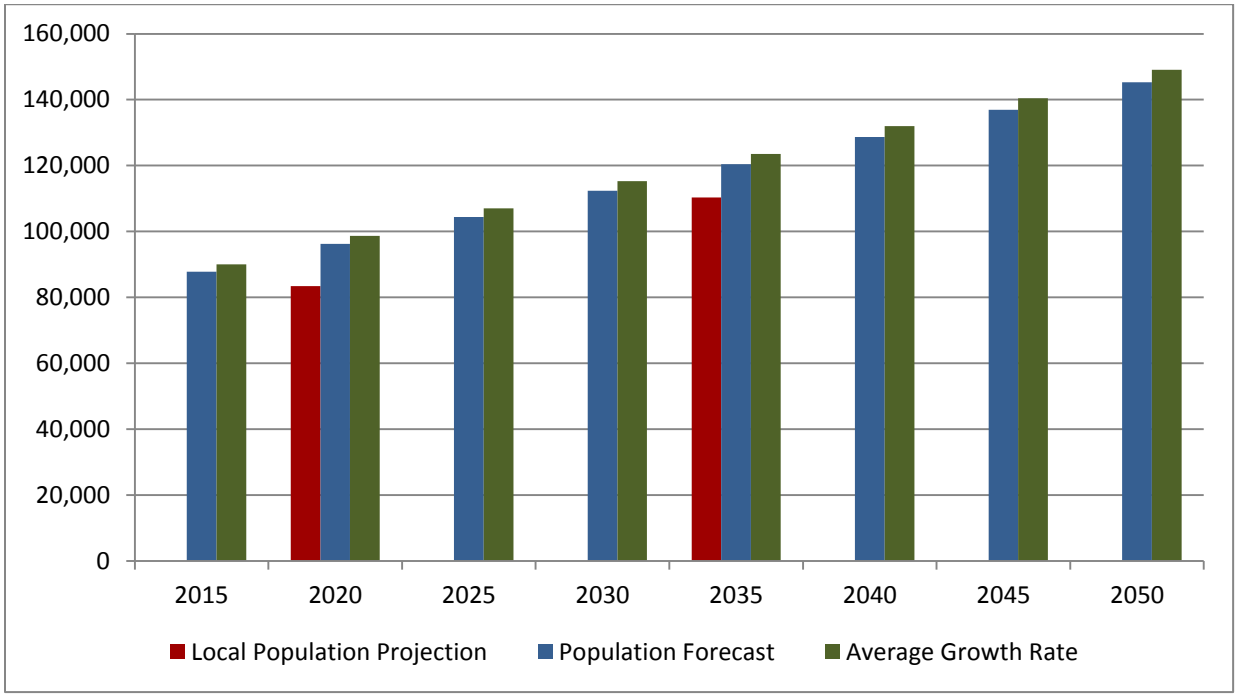
Hemet has seen an increase in total population over the last 13 years but growth has slowed recently. The 2013 census estimate indicates that total population has reached 81,750 as compared to 2000 census counts, which totaled 58,970. While this shows a total increase of over 38 percent, the average growth rate over the period was calculated at 2.55 percent. This is illustrated in the following figure.

Figure 70: Population History and Growth Rate



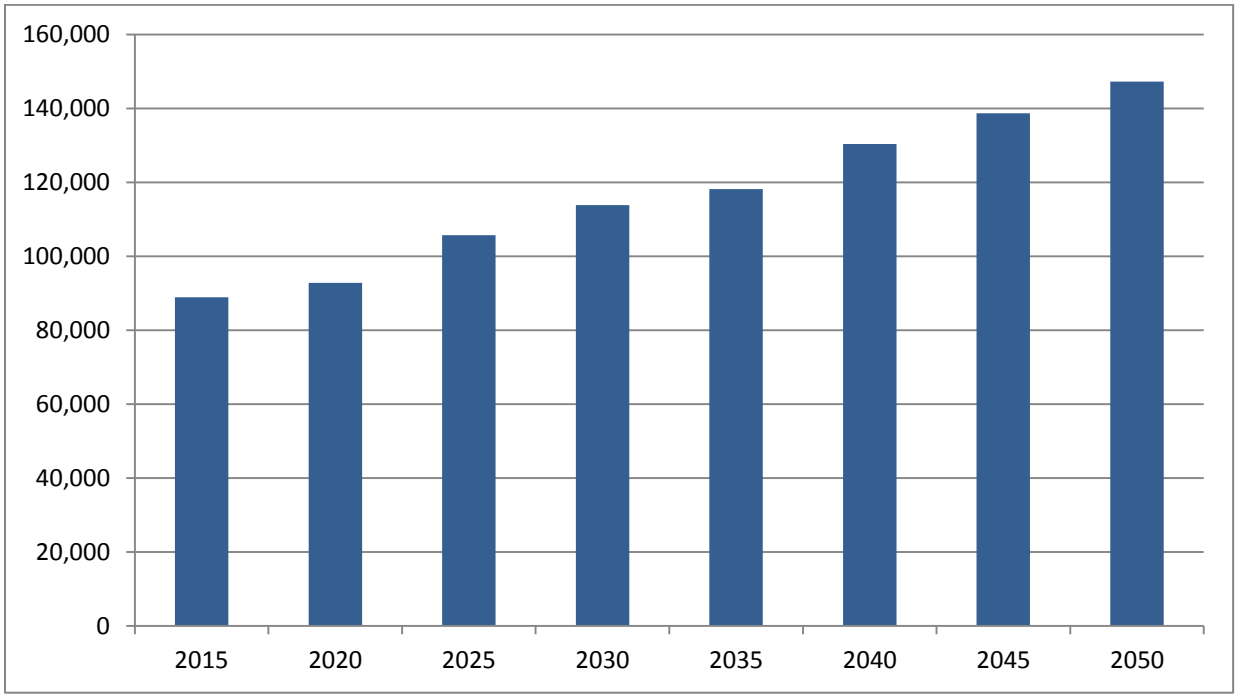
Based on this population history, ESCI combined three different sources of data to determine the most appropriate rate of growth from which to generate future service demand projections. The first is based on local development projections (only 2020 and 2035 were projected); the second is based on a mathematical forecast model; and the third is based on the historical annual growth rate. These three population projection models are provided in the following figure.

Figure 71: Population Growth Projections



From these projections, ESCI developed an average population projection model that indicates a total population in 2050 at 147,192 as shown below.

Figure 72: Population Growth Projection – Average Model

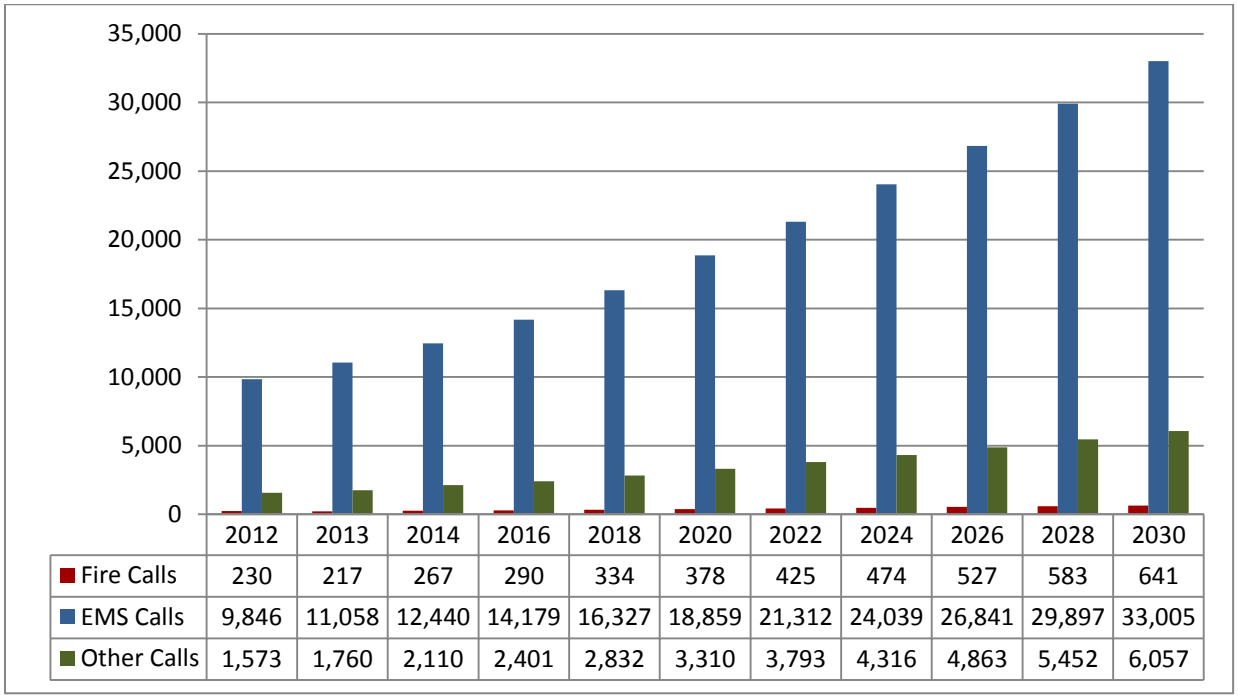


SERVICE DEMAND PROJECTIONS

In evaluating the deployment of facilities, resources, and staffing, it is imperative that consideration be given to potential changes in workload that could directly affect such deployment. Any changes in service demand can require changes and adjustments in the deployment of staff and resources in order to maintain acceptable levels of performance.

For purposes of this study, ESCI utilized population projections obtained through the previously presented methods and multiplied the average model by a forecast incident rate derived from a three-year history of incident per capita rates to identify workload potential through the year 2030. The results of the analysis are shown in the following figure.

Figure 73: Service Demand Projections



	2012	2013	2014	2016	2018	2020	2022	2024	2026	2028	2030
Fire Calls	230	217	267	290	334	378	425	474	527	583	641
EMS Calls	9,846	11,058	12,440	14,179	16,327	18,859	21,312	24,039	26,841	29,897	33,005
Other Calls	1,573	1,760	2,110	2,401	2,832	3,310	3,793	4,316	4,863	5,452	6,057

Based on the projection, service demand across the area will continue to rise over the next 15 years based on a per capita usage rate average of 0.002722 for fires, 0.127666 for EMS incidents, and 0.020844 for all other incident types.

Development of Response Standards & Targets

The previous sections of this report detail a considerable volume of observations and minor recommendations relating to HFD current conditions, as well as projecting future population growth and the impact of service demand on the fire department. The process of developing response targets and understanding, prioritizing, and implementing recommended enhancements can be daunting, simply due to the amount of work that may be involved and the potential cost associated with these changes. The following section addresses these issues.

Critical Tasks, Risk, and Staffing Performance

The ultimate goal of any emergency service delivery system is to provide sufficient resources (personnel, apparatus, and equipment) to the scene of an emergency in time to take effective action to minimize the impacts of the emergency. This need applies to fires, medical emergencies, and any other emergency situation to which the fire department responds. Obtaining and understanding the desires and expectations of community stakeholders is an important first step. HFD is committed to incorporating the needs and expectations of residents and policy makers in the service delivery planning process. Although input from citizens and business interests was sought, the sample size was small. It will become increasingly important to emphasize public process and inter-agency communication as the demand for service increases throughout the community. The input received will help guide HFD vision, planning efforts, policy decisions, and service delivery.

Before discussing the City of Hemet's emergency service goals, it is important to gain an understanding of the dynamics of fire and medical emergencies. This information is provided for civilian readers that may not be familiar with the dynamics of fire suppression and emergency medical treatment.

Dynamics of Fire in Buildings

Most fires within buildings develop in a predictable fashion, unless influenced by highly flammable material. Ignition, or the beginning of a fire, starts the sequence of events. It may take several minutes or even hours from the time of ignition until a flame is visible. This smoldering stage is very dangerous, especially during times when people are sleeping, since large amounts of highly toxic smoke may be generated during this phase.

Once flames do appear, the sequence continues rapidly. Combustible material adjacent to the flame heats and ignites, which in turn heats and ignites other adjacent materials if sufficient oxygen is present. As the objects burn, heated gases accumulate at the ceiling of the room. Some of the gases are flammable and highly toxic.

The spread of the fire from this point continues quickly. Soon the flammable gases at the ceiling reach ignition temperature. At that point, an event termed "flashover" occurs; the gases ignite, which in turn ignites everything in the room. Once flashover occurs, damage caused by the fire is significant and the environment within the room can no longer support human life.

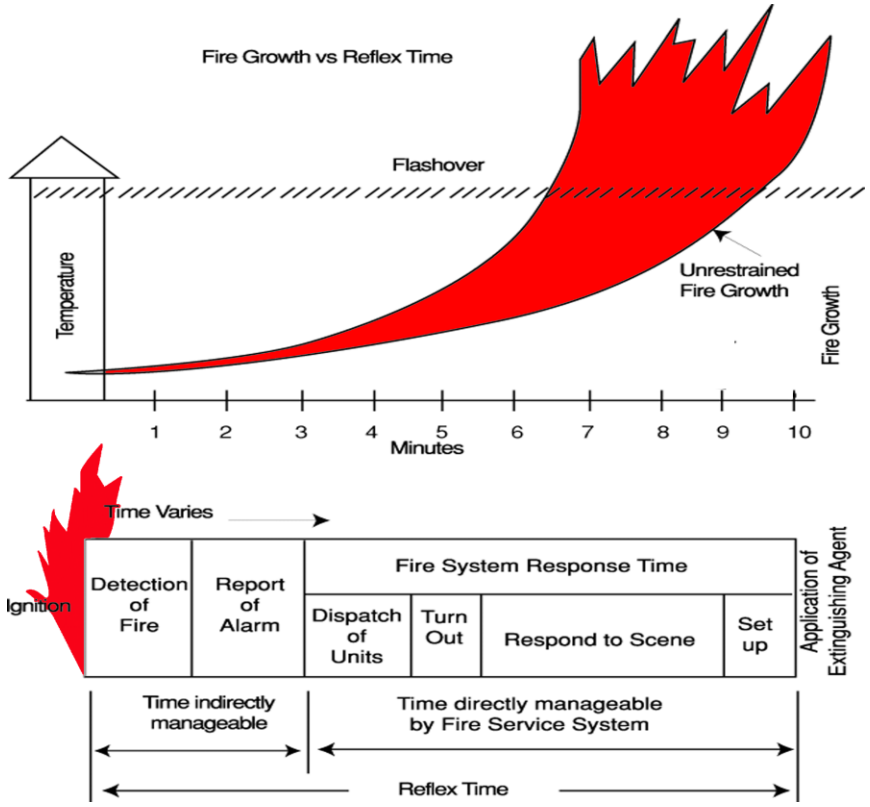
Flashover usually occurs about six to nine minutes from the appearance of flame in typically furnished and ventilated buildings. Since flashover has such a dramatic influence on the outcome of a fire event, the goal of any fire agency is to apply water to a fire before flashover occurs.

Perhaps as important as preventing flashover is the need to control a fire before it does damage to the structural framing of a building. Materials used to construct buildings today are often less fire resistive than the heavy structural skeletons of older frame buildings. Roof trusses and floor joists are commonly made with lighter materials that are more easily weakened by the effects of fire. "Light weight" roof trusses fail after five to seven minutes of direct flame impingement. Plywood I-beam joists can fail after as little as three minutes of flame contact. This creates a very dangerous environment for firefighters.

In addition, the contents of buildings today have a much greater potential for heat production than in the past. The widespread use of plastics in furnishings and other building contents rapidly accelerate fire spread and increase the amount of water needed to effectively control a fire. All of these factors make the need for early application of water essential to a successful fire outcome.

A number of events must take place quickly to make it possible to achieve fire suppression prior to flashover. The following figure illustrates the sequence of events.

Figure 74: Fire Growth vs. Reflex Time



The reflex time continuum consists of six steps, beginning with ignition and concluding with the application of (usually) water. The time required for each of the six components varies. The policies and practices of the fire department directly influence four of the steps, but two are only indirectly manageable. The six parts of the continuum are:

1. **Detection**: The detection of a fire may occur immediately if someone happens to be present or if an automatic system is functioning. Otherwise, detection may be delayed, sometimes for a considerable period.
2. **Report**: Today most fires are reported by telephone to a 9-1-1 center. Call takers must quickly elicit accurate information about the nature and location of the fire from persons who are apt to be excited. A citizen well trained in how to report emergencies can reduce the time required for this phase.

3. **Dispatch**: The dispatcher must identify the correct emergency units, subsequently dispatch them to the emergency, and continue to update information about the emergency while the units respond. This step offers a number of technological opportunities to speed the process, including computer aided dispatch and global positioning systems.
4. **Turnout**: Firefighters must don personal protective equipment, assemble on the response vehicle, and begin travel to the emergency. Good training and proper fire station design can minimize the time required for this step.
5. **Response**: This is potentially the longest phase of the continuum. The distance between the fire station and the location of the emergency influences reflex time the most. The quality and connectivity of streets, traffic, driver training, geography, and environmental conditions are also a factor.
6. **Set up**: Last, once firefighters arrive on the scene of a fire emergency, fire apparatus are positioned, hose lines are placed, additional equipment is assembled, and certain preliminary tasks are performed (such as rescue) before entry is made to the structure and water is applied to the fire.

As is apparent by this description of the sequence of events, application of water in time to prevent flashover is a serious challenge for any fire department. It is critical, though, as studies of historical fire loss data can demonstrate.

The National Fire Protection Association found that fires contained to the room of origin (typically extinguished prior to or immediately following flashover) had significantly lower rates of death, injury, and property loss when compared to fires that had an opportunity to spread beyond the room of origin (typically extinguished post-flashover). Incidents in which a fire spreads beyond the room where it originates are likely to experience six times the amount of property loss and have almost nine times greater chance of resulting in a fatality.

Emergency Medical Event Sequence

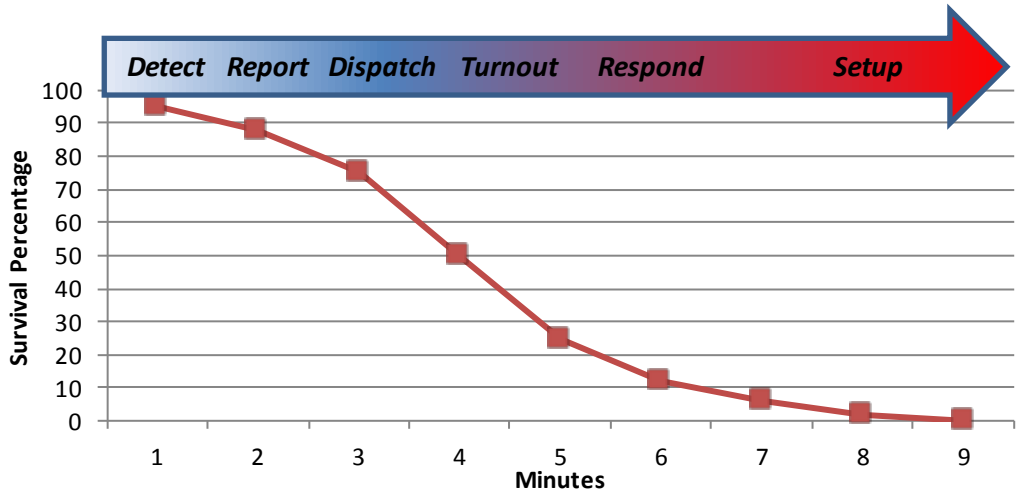
Cardiac arrest is the most significant life-threatening medical event in emergency medicine today. A victim of cardiac arrest has mere minutes in which to receive lifesaving care if there is to be any hope for resuscitation.

The American Heart Association (AHA) issued a set of cardiopulmonary resuscitation guidelines designed to streamline emergency procedures for heart attack victims, and to increase the likelihood of survival. The AHA guidelines include goals for the application of cardiac defibrillation to cardiac arrest victims.

Cardiac arrest survival chances fall by seven to 10 percent for every minute between collapse and defibrillation. Consequently, the AHA recommends cardiac defibrillation within five minutes of cardiac arrest.

As with fires, the sequence of events that lead to emergency cardiac care can be graphically illustrated, as in the following figure.

Figure 75: Cardiac Arrest Event Sequence



The percentage of opportunity for recovery from cardiac arrest drops quickly as time progresses. The stages of medical response are very similar to the components described for a fire response. Recent research stresses the importance of rapid cardiac defibrillation and administration of certain medications as a means of improving the opportunity for successful resuscitation and survival.

People, Tools, and Time

Time matters a great deal in the achievement of an effective outcome to an emergency event. Time, however, is not the only factor. Delivering sufficient numbers of properly trained, appropriately equipped personnel within the critical time period completes the equation.

For medical emergencies this can vary based on the nature of the emergency. Many medical emergencies are not time critical. However, for serious trauma, cardiac arrest, or conditions that may lead to cardiac arrest, a rapid response is essential.

Equally critical is delivering enough personnel to the scene to perform all of the concurrent tasks required to deliver quality emergency care. For a cardiac arrest, this can be up to six personnel; two to perform CPR, two to set up and operate advanced medical equipment, one to record the actions taken by emergency care workers, and one to direct patient care.

Thus, for a medical emergency, the real test of performance is the time it takes to provide the personnel and equipment needed to deal effectively with the patient's condition, not just the time it takes for the first person to arrive.

Fire emergencies are even more resource critical. Again, the true test of performance is the time it takes to deliver sufficient personnel to initiate application of water to a fire. This is the only practical method to reverse the continuing internal temperature increases and ultimately prevent flashover.

The fire service assesses the relative risk of properties and occurrences based on a number of factors. Properties with high fire risk often require greater numbers of personnel and apparatus to effectively mitigate the fire emergency. Staffing and deployment decisions should be made with consideration of the level of risk involved.

Many communities across the nation contain varying levels of population density that allow agencies to specify response performance objectives based on risk. Those population densities are typically identified as:

- Metropolitan – geography with populations of over 200,000 people in total and/or a population density of over 3,000 people per square mile. These areas are distinguished by mid-rise and high-rise buildings, often interspersed with smaller structures.
- Urban – geography with a population of over 30,000 people and/or a population density of over 2,000 people per square mile.
- Suburban – geography with a population of 10,000 to 29,999 and/or a population density of between 1,000 and 2,000 people per square mile.
- Rural – geography with a total population of less than 10,000 people or with a population density of less than 1,000 people per square mile.
- Wilderness/Frontier/Undeveloped – geography that is both rural and not readily accessible by a publicly or privately maintained road.

The City of Hemet is predominantly a densely populated urban environment with areas of lower population density on the outskirts of the city. Based on this fact, the service delivery performance objectives discussed throughout the remainder of this report will be measured against tiered standards that will apply to urban, suburban, and rural settings. Urban settings present a number of challenges that are not present in suburban and rural communities. With this, the fire department must determine what the expectations of the community are as well as what the "acceptable" level of risk is. Acceptable risk is defined as, "…the potential fire loss a community is willing to accept rather than provide resources to reduce such losses."[8]

Based on information obtained from the fire department personnel and Hemet elected and appointed officials, combined with a small sampling of citizens and business interests, the residents of Hemet generally expect to receive:

- Trained and capable personnel
- Reliable and appropriate equipment and tools
- Quick responses from the fire department for fire and medical emergencies

[8] Firewise communities. 2007.

It is presumed by ESCI that communication and interaction between the HFD and the community is also an important factor. These expectations should be taken into consideration as departmental objectives and goals are developed, implemented, and measured.

Within the urban environment, and more specifically within the City of Hemet, a number of risks exist, as was discussed within the Community Risk section of this document. To generalize these risks enables the fire department to evaluate current resourcing and make changes as necessary to reduce the potential for loss based on the level of risk. The specific risk categories contained with the HFD response area vary dependent upon the type of incident. In other words, each type of incident may fall into one of four risk categories: Fire, Medical, Rescue, and Hazardous Materials. Within each risk category, there are varying levels of risk including low, moderate, high, and maximum.

As the actual or potential risk increases for each of the risk categorizations, the necessity for higher numbers of personnel and apparatus also increases. With each type of incident and corresponding risk, specific critical tasks need to be accomplished. The next section of this document considers the aforementioned risk categories and illustrates the number of personnel that are necessary to accomplish the critical tasks.

Tasks that must be performed at a fire can be broken down into two key components: life safety and fire flow. Life safety tasks are based on the number of building occupants, and their location, status, and ability to take self-preservation action. Life safety related tasks involve the search, rescue, and evacuation of victims. The fire flow component involves delivering sufficient water to extinguish the fire and create an environment within the building that allows entry by firefighters.

The number and types of tasks needing simultaneous action will dictate the minimum number of firefighters required to combat different types of fires. In the absence of adequate personnel to perform concurrent action, the command officer must prioritize the tasks and complete some in chronological order, rather than concurrently. These tasks include:

- Command
- Scene safety
- Search and rescue
- Fire attack
- Water supply
- Pump operation
- Ventilation
- Backup/rapid intervention

Critical tasks must be conducted in a timely manner in order to control a fire or to treat a patient. Three scenarios routinely encountered are commonly utilized by fire departments when conducting field validation and critical tasking. They are a medium risk structure fire, a traffic collision with a trapped victim, and a cardiac arrest. Each scenario is conducted using standard operating procedures and realistic response times based on actual system performance. Each scenario is normally run multiple times with a variety of fire companies to validate and verify observations and times.

To further validate the analysis process, results are compared with records from actual working fires and similar incidents from previous years. Overall results are reviewed to determine if the actions taken within the early minutes of an incident resulted in a stop loss or not, and if additional resources were

required. The critical task analysis process demonstrates the rate at which the current deployment plan results in stopping loss a high percentage of time within initial critical time goals.

The critical task analysis may demonstrate important differences based on apparatus configuration and staffing in the ability to enter a building on a working structure fire when it comes to executing the *two in, two out* rule and fire ground operations.

Again, critical tasks are those activities that must be conducted in a timely manner by firefighters at emergency incidents in order to control the situation, stop loss, and to perform necessary tasks required for a medical emergency. HFD is responsible for assuring that responding companies are capable of performing all of the described tasks in a prompt, efficient, and safe manner. A total of 15 personnel represents the department's maximum staffing level.

Critical tasking for fire operations is the minimum number of personnel to perform the tasks required to effectively control an incident in the listed risk category. Major fires beyond first alarm will require additional personnel and apparatus from outside HFD. Critical tasking for emergency medical incidents is the minimum number of personnel necessary to perform the tasks required to support an identified strategy based on the department's adopted medical protocol.

The CPSE has a *sample* critical tasking analysis for the number of personnel required on scene for various levels of risk. This information is illustrated in the following figure as an example of critical tasking only and is not intended to conclusively define the actual personnel necessary based on risk.[9]

[9] Note: Based on examples provided in the publication Commission on Fire Accreditation International, Inc. (now Center for Public Safety Excellence), *Creating and Evaluating Standards of Response Coverage for Fire Departments*, 4th edition.

Figure 76: Sample of Critical Task Staffing by Risk

Sample Critical Task Analysis Firefighter Personnel Needed Based On Level of Risk				
	Structural Maximum Risk	**Structure Significant Risk**	**Structure Moderate Risk**	**Non-Structure Low Risk**
Attack line	4	4	2	2
Back-up line	4	2	2	(2)
Support for hose lines	4	3	2	
Search and rescue	4	4	2	
Ventilation	4	2	2	
Rapid intervention team	4	4	2	
Pump Operator	2	1	1	1
2nd apparatus/ladder operator	1	1	(1)	
Command	2	1	1	1#
Safety	2	1	1#	
Salvage	4			
Rehabilitation	2			
Division/group supervisors	(2)			
Total	**37-39**	**23**	**14-16**	**3-6**

() Indicates tasks may not be required at all such incidents.

 # Indicates task may, at times, be completed concurrently with other position.

The first 15 minutes is the most crucial period in the suppression of a fire. How effectively and efficiently firefighters perform during this period has a significant impact on the overall outcome of the event. This general concept is applicable to fire, rescue, and medical situations.

All Risk Critical Resource Tasking

Fire departments respond to many incidents other than structure fires, including hazardous materials (dangerous goods) releases, motor vehicle collisions, basic and advanced life support medical emergencies, technical (complex) rescues and non-structural fires. Personnel responding to these types of incidents should be assigned tasks similar to structure fires.

The following figures are provided as an example for these types of incidents, although ESCI recommends HFD conduct field validation exercises with its crews to verify the critical task analyses provided. After field validation is complete, the department may find that the critical tasking can be adjusted appropriately upward or downward for each incident type.

Figure 77: Non-Structure Fire Critical Tasks

Task	Personnel
Command	1
Pump Operator	1
Primary Attack Line	2
Total	**4**

Figure 78: Hazardous Materials Incident Critical Tasks

Task	Personnel
Command	1
Pump Operator	1
Primary Attack Line	2
Back-Up Line	2
Support Personnel	7
Total	**13**

Figure 79: Motor Vehicle Collision with Entrapment Critical Tasks

Task	Personnel
Command	1
Pump Operator	1
Primary Attack Line	2
Extrication	3
Patient Care	2
Total	**9**

Figure 80: Emergency Medical Incident Critical Tasks

Task	Personnel
Ambulance Transport	2
First Responder	4
Total	**6**

The aforementioned minimum staffing criteria should be used in setting specific service level objectives for each of the incident types, with specific numbers determined by field validation.

RECOMMENDATIONS:

- Conduct field validation exercises with its crews to verify or modify the critical task analyses for the sample Critical Task Lists for each major incident type.

Call-Handling Performance Criterion

In many areas of the country, call-handling or call-processing are not functions under direct control of the fire department, as is the case in Hemet. However, the fire department should be able to at least influence performance within the communications center since they are a customer of that organization.

Based on NFPA 1221 standards, call processing time—the time between when the call is answered and when the call is dispatched to responding units—should be less than 60 seconds 90 percent of the time. The fire department should work with the communications center to establish the following call processing performance objective.

> ***For 90 percent of all calls for service received, the communications center will notify and dispatch the appropriate units in less than 60 seconds. Call intake and dispatch personnel will continue to receive and relay vital information until all instructions have been issued or the initial unit arrives on scene.***

Turnout Time Performance Criterion

Turnout time is one area that the fire department has total control over and is not affected by outside influences. Turnout time, or the time between when the call is received by the response units (dispatched) and when the unit is actually en route to the scene (responding), can have dramatic effects on overall response times. Reducing this single response time component reduces total response time.

The current version of NFPA 1710 recommends a turnout time performance objective of 60 seconds or less for medical incidents and 80 seconds or less for suppression and special operations incidents. Given that turnout time is one area in which field personnel can dramatically improve overall response time, an aggressive objective is recommended. With this in mind, HFD should establish the following Turnout Time Performance Objective.

> ***For 90 percent of all emergency dispatches received, HFD will be en route to the incident in 80 seconds or less for fire and special operations incidents, and 60 seconds or less for emergency medical incidents.***

Distribution Performance Criterion

A fire department's *distribution* is essentially the location of resources to assure an initial intervention within the specific time frame identified in the community's performance goals. Measure EE in Hemet

has established a performance standard as follows: "A response time of five (5) minutes or less for 80 percent of fire and emergency medical calls will be provided on both a citywide and response area basis." This measure can have an adverse impact on community growth and development of the city if this performance standard is not achieved. This standard should be clarified to ensure that it does not consider non-emergent responses in the calculation. Non-emergent call types are not time sensitive. Treating them as such greatly increases risk and liability for the city.

If HFD met the very aggressive national consensus standard (NFPA 1710) for each segment of time which, when added together makes up the total response time, it would not achieve a five minute response time to 80 percent of its calls as currently deployed. NFPA 1710 establishes that call processing should take no more than 60 seconds 90 percent of the time; turnout time should take no more than 60 seconds for medical emergencies and 80 seconds for fire responses 90 percent of the time; and travel time should take no more than four minutes 90 percent of the time, for a total response time of six minutes for medical emergencies and six minutes 20 seconds for fire emergencies, 90 percent of the time.

It is ESCI's opinion that the current standard included in Measure EE for Hemet is not attainable as currently resourced or deployed. Establishing additional stations to deploy more resources may come close to achieving Hemet's performance standard, but would be an impractical and unrealistic expenditure of funds. Fire stations and equipment would have to be deployed in such a manner as to provide a travel time of less than three minutes to 80 percent of the service area.

A less aggressive but more realistic performance standard which meets the national consensus standard for total response time is as follows:

> ***For 90 percent of all emergency incidents, the first due unit shall arrive within six minutes total response time for medical emergencies and six minutes, twenty seconds for fire emergencies. The first due unit shall be capable of advancing the first line for fire control or providing basic life support for medical incidents.***

Concentration Performance Criterion

A fire department's *concentration* is the spacing of multiple resources close enough together so that an initial "Effective Response Force" (ERF) for a given risk can be assembled on the scene of an emergency within the specific time frame identified in the community's performance goals for that risk type. An initial effective response force is defined as that which will most likely be sufficient to stop the escalation of the emergency. The ERF for structural fire risks in Hemet is identified as a collective response of 15 personnel on three engines, one squad unit, and one ladder truck, including the shift commander. This ERF represents the entire on duty work force for the HFD. This does not necessarily represent the entire alarm assignment for higher risk incidents, as additional units may be assigned from mutual aid agencies based on long-term incident needs and risks. For instance, an additional engine,

ladder, or rescue companies may be assigned to higher risk responses in order to accomplish additional critical tasks that are necessary beyond the initial attack and containment. HFD should establish the following Concentration Performance Objective.

> ***For a moderate risk incident, HFD shall assemble an Effective Response Force (ERF) within 10 minutes 30 seconds, 90 percent of the time. This ERF shall be able to establish command and fire attack for fire incidents; or be able to handle a multiple casualty emergency medical incident.***

SERVICE DELIVERY STRATEGIES

The following discussion identifies and defines a number of considerations as well as cutting edge and non-traditional approaches to service delivery which ESCI believes are important factors in providing sustainable service delivery to the community.

Exploration of Regional Cooperation Opportunities

ESCI understands that the context of this study follows shortly after a failed attempt to turn fire service provision over to CAL FIRE. Regional cooperation, in the context used by ESCI, is not elimination of the fire department in exchange for a new provider, but cooperation between regional partners for greater efficiency, potentially better cost containment, and leveraged service capability and capacity. It is broadly recognized that jurisdictional boundaries seldom create efficient and effective service delivery parameters. Citizens often recognize and appreciate regional approaches to service delivery as an excellent example of governmental cooperation and efficiency. In addition to those already mentioned in this report, examples of cooperative services include:

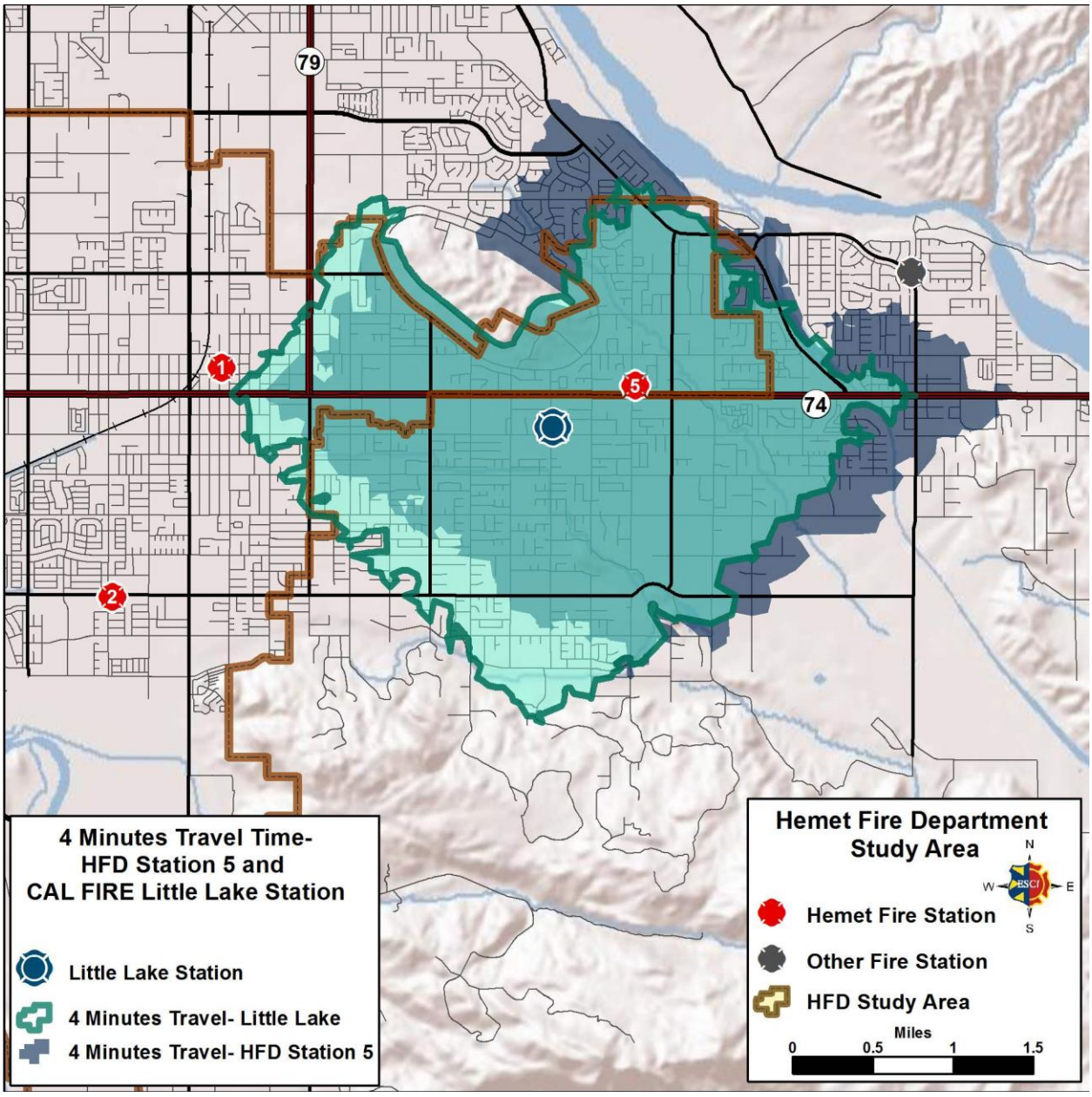
- **Regional Communication Center** – A shared dispatch center with county and city emergency services agencies
- **Pulse Point** – A program whereby information about a cardiac arrest is texted to CPR trained citizens who may be in the area to provide rapid intervention throughout the county
- **Response Cooperation** –
    - Auto-aid for Technical and Swift Water Rescue with neighboring agencies
    - Type 3 Incident Management Team with other regional partners
- Jointly staffed truck company with neighboring agencies
- Joint purchasing agreement between county fire agencies
- Functional consolidation with allied fire agencies in the following areas:
    - Logistics Center (central supplies)
    - Apparatus Maintenance Facility & Mobile Repairs
    - Training Division
    - Fire Investigation Team (FIT)

Joint Staffing of the Little Lake Station

The east edge of Hemet is currently served by a two person squad unit housed at Hemet Station 5; a substandard fire station. The unit is responding predominantly to EMS incidents. Within one mile of the

station is the CAL FIRE Little Lake Station. The two stations represent a unique opportunity for cooperative efforts between the agencies. The following figure illustrates the four minute travel time service area for HFD Station 5 and the CAL FIRE Little Lake station.

Figure 81: Four Minutes Travel Time-HFD Station 5 and CAL FIRE Little Lake Station



At four minutes travel time the two stations displayed above share very similar service areas. There are several options for cooperative efforts between HFD and CAL FIRE in this area. One such option is to jointly staff an engine company with CAL FIRE at the Little Lake station, with each agency sharing equally in the staffing burden, maintenance costs, and apparatus assignment. Responses would be seamless, handling calls to both first due areas (which substantially overlap, as depicted in the preceding figure.

The unit would also support larger incidents in both jurisdictions as part of both jurisdictions' effective response force, as is the case today, but separately.

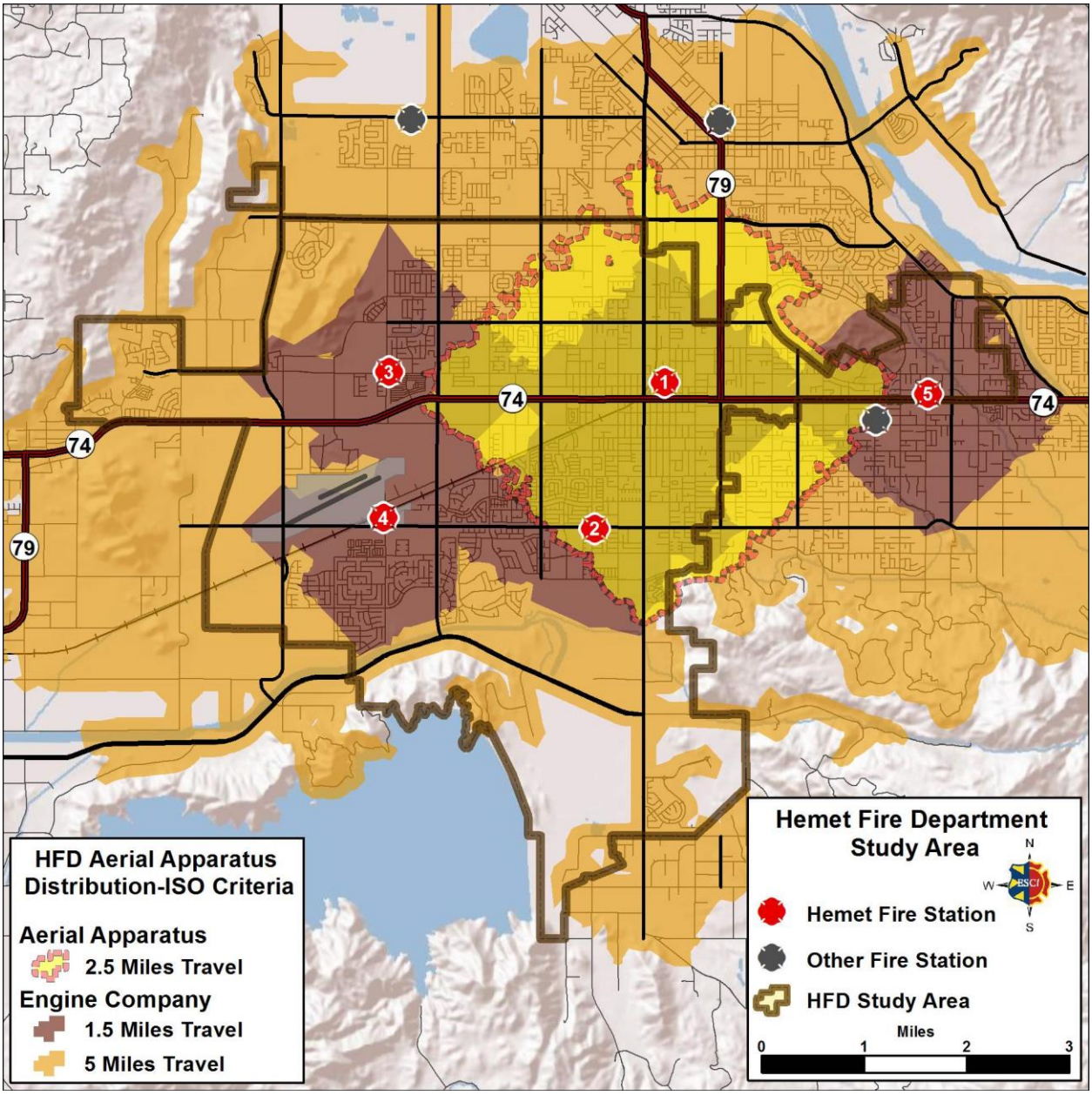
The staffing plan could be a mixture of CAL FIRE and HFD personnel on each shift which makes up a standard engine company crew. Alternatively, the jurisdictions can take turns staffing the station. For example, HFD staffs the station from January to June and CAL FIRE staffs the station from July to December. This way, crew continuity is maintained and some potential labor issues are avoided. Both agencies can plan for their coverage schedule, using the extra capacity when not staffing the station to flexibly redeploy those personnel to other assignments. A local example of this concept is the El Cariso area, where Station 51 is jointly operated by Riverside, CAL FIRE, and the US Forest Service.

When a new station is necessary, the agencies could jointly construct and staff a station that meets the needs of both agencies. ESCI has not reviewed or assessed the Little Lake Station, so it is unclear when such a new station would be required.

Deployment of Truck 1

The HFD aerial apparatus is currently housed at Station 4 and cross staffed by the engine company personnel at this station. Previous to budget cuts during the recession, Truck 1 was stationed at Station 1 and staffed by a three person crew in addition to the three person engine company at this station. Station 1 contains the majority of multi-story buildings and also high risk hazards, such as the hospital (Hemet Valley Medical Center) and older unreinforced brick buildings. As discussed in the Distribution Analysis, the Insurance Services Organization (ISO) criteria for the location of aerial apparatus is based on the number of buildings over 3 stories and structures requiring high fire flow. The following figure demonstrates the 2.5 mile travel distance (ISO criteria) service area for Station 1.

Figure 82: HFD Station 1 Aerial Apparatus Service Area (ISO Criteria)



The preceding figure illustrates that the 2.5 mile service area surrounding Station 1, which covers the core downtown area and much of the commercial development along Florida Avenue (Highway 74). By moving Truck 1 to Station 1, HFD enhances their ability to protect the risks present in the core area of the city. Since the Station 1 area experiences the highest service demand, the current staffing configuration does not lend itself to cross staffing the truck with the engine crew. HFD should strive to significantly reduce demand at Station 1 in order to cross-staff the truck. This could be done in concert with other options listed in this report, such as a Peak Activity Unit and an Alternative Response Unit, discussed later in this section.

Dropped Boundary Response Areas

As discussed in the Concentration Analysis, HFD requires the entire on-duty staff of 15 personnel to assemble an effective response force (ERF) for a moderate risk incident such as a single story residential structure fire. Given the amount of service demand in the Hemet service area, HFD is challenged to assemble an ERF for a moderate risk or more complex higher risk incident. In fact, HFD is unable to assemble sufficient personnel to manage a significant or maximum risk without heavy reliance upon neighboring agencies. This is not an unusual circumstance. Many fire departments across the United States cannot assemble sufficient staff and equipment to manage their significant or maximum risk without outside assistance.

ESCI recommends that HFD include neighboring agency resources through the use of automatic aid agreements as part of the initial first alarm assignment for all confirmed structure fires. This type of automatic aid is referred to as "dropped boundary response areas." Adding resources to the initial response assignment increases the chances that sufficient resources arrive in time to effectively and safely mitigate an emergency. It is important to note, however, that these types of agreements require HFD to respond in kind to neighboring agencies.

48-96 Shift Work

While not a service delivery option per se, the shift work can influence the quality of the services delivered. As stated earlier in this report, the HFD line personnel work a 48-96 constant staffing schedule. This means that all shift personnel work forty-eight consecutive hours on duty, followed by ninety-six hours of time off. The constant staffing portion of the schedule means that there are no pre-scheduled days off intended to reduce the average hours of work. This type of shift has been a growing trend in the fire service, and originated in Southern California, because firefighters were unable to afford local housing and/or faced long commutes. The commutes were reduced in frequency because of this shift.[10]

The crews working this shift must respond to all emergencies during their forty-eight hour shift. They do not have the luxury of "sitting one out" to rest and recover from earlier incidents which may have taxed them physically, mentally, emotionally, or deprived them of sleep. If HFD sanctions the crews sleeping whenever they can during the shift to ensure mental and physical sharpness, the agency cannot guarantee quality sleep or recovery periods. Further, the fire department loses productivity that might otherwise be gained by a shorter shift configuration. These activities may include building and apparatus maintenance, training, fire prevention, code enforcement, building familiarization, or community outreach activities.

The 48-96 work schedule is a controversial topic in the fire service, and there are numerous studies arguing the benefits or drawbacks, depending on the author. It is beyond the scope of this report to address this in a deep and thorough manner. However, combining the long shift work with an

[10] The Effects of Sleep Deprivation on Fire Fighters and EMS Responders. In cooperation with International Association of Fire Chiefs and the United States Fire Administration. Diane L. Elliot, MD, FACP, FACSM and Kerry S. Kuehl, MD, DrPH, Division of Health Promotion & Sports Medicine, Oregon Health & Science University, Portland, Oregon. June 2007.

emergency response demand that far exceeds a normal range (see Figure 11: Comparison of Incidents per 1,000 Population earlier in this report), it is at least a safety and liability consideration which should be raised. Any changes to this schedule may only occur after collectively bargaining those changes with the firefighters union.

Peak Activity Units

Staffing is typically a fire agency's single most expensive resource. Two significant factors that drive cost is the twenty-four hour nature of the demand for fire and EMS service and that firefighters typically travel in teams of three or four. Staffing a unit twenty-four hours per day, 365 days a year with a team of three or four firefighters to maintain a full response capability drives up cost. The rationale for staffing and deploying in this manner is the seemingly unpredictable nature of emergencies. However, data analysis identifies predictable patterns where risk can be managed more efficiently. Once a base emergency response capability is achieved throughout the twenty-four hour cycle, additional capacity can be gained with a more efficient, flexibly staffed and deployed model. This efficient and effective model includes resources which augment the traditional deployment of response resources. This flexible unit follows the observable trends in emergency calls for service (demand) which dictates to a significant degree the distribution of that flexible resource. Implementing this flexible unit reduces response times where demand is high. These flexible resources are referred to as Peak Activity Units (PAUs) and they are deployed in a manner that mirrors the ebb and flow of emergency demand. A PAU has four major configuration variables: the unit itself, the crew make-up/size, the deployment purpose/philosophy, and deployment hours/geography.

PAUs are typically staffed and deployed during the most statistically busy times of the day and week, which make the unit less costly and more flexibly deployed, both by time of day and geographically. These units can be a fire engine that is type I (a structure fire engine) or type 6 (a brush fire engine) configuration, a medical rescue unit, or a multi-purpose squad. Regardless of the type of vehicle it is, what makes it unique is the way it is deployed and staffed. PAUs can be staffed with a medical crew if that is its primary purpose, as a fire suppression crew, or both. It can be deployed during wildland fire season with a wildland fire crew. Regardless of staff capability, the staff can be obtained by hiring new personnel, by using callback crews on overtime, or converting a regularly assigned crew to a PAU. These concepts normally require bargaining the hours and working conditions under which the unit is staffed when a collective bargaining unit is affected.

PAUs are not only assigned as an additional resource based on statistically busy times and locations. They can also be used to manage gaps in coverage for units participating in training and could even be cooperatively staffed with a neighboring agency(s). A PAU could be only occasionally staffed for activities such as a scheduled event or routinely staffed for periods of peak demand. Adding PAUs as an ***adjunct*** to the base staffing patterns adds flexibility to fire department emergency operations. The advantages of these units are that they typically reduce maintenance cost of the units, are less expensive to purchase and to operate, are faster and more maneuverable, cost for staffing is approximately one third the cost of staffing a trandition fire engine for twenty-four hours (depending on

the staffing configuration of the PAU and its intended purpose), and can move from area to area to provide coverage, shedding the limitations of traditional fire station based deployment.

For the purpose of illustration, we assume a PAU is staffed by two personnel to handle peak demand for EMS responses. The unit would be made available for response 10 hours per day, four days per week, although it can be placed into service in any one of numerous work period configurations. We also assume the PAU is staffed with regularly assigned personnel who work a different schedule than the hours worked by shift firefighters.

Other possible configurations for staffing PAUs include but are not limited to:

- Staff a light rescue or type 6 engine (i.e., a brush fire unit) as a PAU with a firefighter/medic and a firefighter available 10 hours per day, seven days a week to focus on EMS responses and minor fires, reducing wear and tear on larger apparatus during busy hours of the week statistically.
- Staff a type I engine (a structure fire engine) as a PAU with a crew of three available 10 hours per day, four days a week. The staffed hours cover the hours for regular companies to rotate through the training center with the PAU moving to cover those companies involved in the training.
- Staff a medical rescue unit (an ambulance style vehicle or utility vehicle) as a PAU with two firefighters 12 hours per day, four days a week. The staffed hours would reflect the time of the day when the greatest number of calls for service typically occurs. The unit shifts by time of day to the geographic areas that reflect statistically high demand for service. The fire station that serves that area becomes the base for the PAU during those hours. The unit shifts when demand shifts.
- Staff a PAU of any type that addresses the PAUs primary mission with the appropriate complement of personnel needed eight hours per day, five days a week.

There are numerous key issues involved when considering the concept of operating a PAU. Discussions involving any changes to work schedules or working conditions for career personnel must be bargained with the appropriate firefighter union(s). The staff assigned to a PAU will also need to be included in on-going training activities. The agency must clearly define roles and responsibilities of the personnel on PAUs, whether regularly assigned to a PAU or rotated onto a PAU as part of a system-wide cycle. ESCI recommends rotating personnel on the PAU to maintain the FLSA 7k exemption for hours of work and to maintain firefighting skills. The roles and responsibilities should be clearly communicated to all personnel and not limited to just those assigned to a PAU. In the event that a PAU is cooperatively staffed (partnership with a neighboring agency), the personnel on the PAUs must be cross-trained to understand the operational structures and expectations of each host agency.

Alternate Response Units

Alternative Response Units (ARUs) are a different model than the Peak Activity Units (PAUs), whose primary mission is responding flexibly to peak demand for emergency services. The Alternative

Response Unit is focused on non-emergency, lower acuity emergency medical calls. Its purpose is to keep the primary fleet of emergency response vehicles and crews in service and available for the higher acuity, true emergency calls. Tualatin Valley Fire & Rescue (TVF&R) in Washington County, Oregon implemented a twelve-month pilot of this program in 2011, and the Spokane Fire Department (SFD) in Washington State implemented a six-month pilot of this program in 2013 and extended it an additional eighteen months. Both agencies have experienced positive results, with TVF&R permanently incorporating the units into its daily operation and SFD poised to adopt it permanently.

The premise behind the unit is to reduce the expensive staffing and vehicle responses to likely non-life-threatening calls for service. The units are sport utility vehicles, staffed by one Firefighter/Paramedic in both SFD's and TVF&R's models. The units are dispatched according to a protocol used by the dispatch centers, which medically triages the calling party. In SFD's case, the communication specialists at the Spokane Combined Communication Center are trained to Emergency Medical Technician/Emergency Medical Dispatch (EMT/EMD) certification. In TVF&R's case, the communication specialists at Washington County Communications Center are not necessarily EMT's, but are trained to the EMD certification.

In both cases, the dispatcher triages and categorizes a patient over the phone using a series of questions following an EMD algorithm. The calls are placed into one of typically five categories; Alpha, Bravo, Charlie, Delta, and Echo responses. Alpha is lowest on the severity/acuity scale and is not a life-threatening call type. Echo is the highest severity/acuity and the most urgent, immediate life-threatening call type. ARUs respond to Alpha and Bravo calls routinely, but may also respond to higher acuity calls if the unit happens to be closer than emergency response units to improve response time. It is important to note that both agencies recognize that a single paramedic in an ARU cannot effectively deal with a higher acuity call type alone, thus they focus on lower acuity call types. It is also important to note that since these calls are lower acuity, the response time is de-emphasized since the call is not a true emergency.

In TVF&R, the ARUs also respond to minor non-medical calls such as lockouts, smoke detector problems, fire alarms, and burning complaint investigations. The four TVF&R ARUs are deployed Tuesdays through Fridays 7 a.m. to 5:00 p.m. based on analysis of system demand of low acuity calls. They responded to 2,134 incidents in twelve months, which represents 7.2% of the agency's total call volume for that year.

Spokane's ARU pilot included three units deployed strategically within the SFD service area. Initially, they were deployed Tuesdays through Fridays from 8:00 a.m. to 6:00 p.m. using peak activity to drive deployment times. The deployment model was later modified to provide increased employee flexibility. In the six month pilot, the units handled 1,193 incidents that would have been handled by an engine company, medic unit or ladder truck.

A unique feature of the SFD ARUs is that assignment/recruitment of staff on these units emphasized paramedic assertiveness as a desirable trait, since the unit lends itself to "jumping" calls to provide a fast response, assessment, and potential cancellation of more traditional response units where the ARU is closer and available. In fact, each unit's call load was made up of at least 40% of calls that were

"jumped" versus dispatched initially. In over 72% of the incidents responded to, the incident was handled alone by a single ARU. This compares favorably to the TVF&R experience of 70%. For Spokane, over 29% of the calls where other units also responded, those additional units were cancelled, keeping them available for higher acuity calls which might occur simultaneously. In 204 incidents, the ARU requested additional units either while responding or once on scene. During an initial response by an ARU, a second simultaneous response was requested in the same area 370 times, improving those units' response time reliability.

The call types which were removed from traditional responses to the ARU for TVF&R include:

- Abdominal Pain
- Allergic Reaction
- Bleeding Problem
- Burn complaint
- Confirm death on scene
- Diabetic
- Fall (less than 10 feet)
- Commercial Fire Alarm
- Residential Fire Alarm
- Headache
- Landing Zone
- Lockout
- Medical Alarm
- Mental/Emotional/Psychological
- Miscellaneous
- Odor investigation
- Sick Person
- Smoke Detector Problem
- Smoke Investigation
- Traffic Accident Unknown Injury
- Trauma – minor
- Wires down

ESCI notes that the ARUs do not provide recognized credit through the Insurance Services Organization (ISO). Emergency Medical Services response capability is not evaluated by ISO since they are focused on property conservation and property risk. However, response time and unit reliability are improved by the use of ARUs, and SFD states that, "…the public perception of the program has been overwhelmingly supportive and accepted throughout the community as simply, 'smart government.'"

If HFD deployed ARUs, the units would likely have a positive effect on station/unit reliability, reduce wear and tear on heavy apparatus, reduce incremental unit cost, and contribute to a positive public perception similar to what both SFD and TVF&R have experienced. If TVF&R's experience were applied

to HFD, Hemet could reasonably expect an enhancement to the system with employee costs of only 33% of a current engine company configuration, fuel efficiency improvement from approximately four miles per gallon to 14 miles per gallon, and maintenance costs significantly lower. Of course, the initial outlay for a sport utility vehicle is a cost increase.

Frequent System Users

Most fire service agencies have known patients and facilities who routinely call multiple times for a response from the local fire department. While some of these patients are undoubtedly having acute medical challenges that require a response and assessment, many others have chronic illnesses that have become reliant upon first responders as their primary care provider. Still others are living alone but struggling to live independently, relying instead on first responders to address their routine challenges. A smaller subset may be relying upon first responders for social needs or may have mental health challenges that cause them to call inappropriately for first responders.

In many cases, fire agencies also have significant call volume at single facilities, such as nursing homes and assisted living and mobility-impaired resident facilities. Many calls for service are legitimate medical emergencies for a variety of residents/patients, while some are lift-assists where a mobility-impaired residents fall from bed and need assistance getting back into bed. First responders in these cases perform a quick assessment of the latter group and place them back into bed. While this may seem to be an appropriate service to provide to the residents of such facilities, in many cases it is a liability shift and/or a staffing shift from a fee-for-service facility to the taxpayer-provided emergency responders. Further, it misuses critical emergency response resources to address decidedly non-emergent problems.

There are different approaches available to fire departments that experience the high frequency individual and the high frequency facility. These approaches are explained more fully in the tw following subsections.

Responses to High Frequency Patients

A growing concept nationally is what has been referred to as the Community Assistance Response (CARES) Program. The concept of this approach is to address the high frequency individual. CARES is intended to decrease 9-1-1 over-users or abusers, decrease on-scene time for engine companies for social service calls, decrease the level of frustration with front line crews, and at the same time provide a higher level of service to customers.

A CARES program is made up of student interns from local universities majoring in social work degree programs working together with the fire department. These students meet their academic practicum requirements by serving the CARES Team as student Interns. The combined team addresses the needs of vulnerable populations who have received a response from fire personnel and are identified as needing social service or other support system assistance. Generally the citizen needs help that is available through existing social services programs, but the individual is either unaware of how or not able to access them through traditional means. In most cases, responders find these individuals feeling isolated or are in some type of crisis and do not know where to turn for help. Often, these citizens generate many 9-1-1 calls for assistance.

CARES Team members normally serve an entire school year (September through June), but may work through the summer as well. They undergo orientation and training that helps them to become knowledgeable about local community agencies, diversity issues, and mental health issues. Team members are also trained in crisis intervention and experience ride along time with fire department response units to experience firsthand the circumstances faced in the field.

CARES Team members work in collaboration with the fire department to assist vulnerable populations who face barriers in identifying and utilizing appropriate community resources. The CARES Team visits individuals in their home, works with them to identify their needs, advocates with them, and connects them to appropriate resources.

CARES Team responsibilities include:

- In-home visits
- Client assessments
- Contacting and brokering with other social service agencies
- Advocating, brokering and empowering on behalf of the client
- Program development
- Internal and external marketing of the program
- Participate in local coalitions
- Grant writing

Without a CARES style program, a minimum of one fire engine with three firefighters and one ambulance, with two paramedics arrive on scene. With a CARES program implemented, emergency demand is reduced and service is increased. Agencies which have successfully implemented a CARES type program include Mesa, Arizona, who developed the concept, Spokane, Washington, and Bellevue, Washington. In the latter case, Bellevue has reduced its frequent user of 9-1-1 calls by 50% since starting the program in 2012.

Responses to High Frequency Facilities

The first step in identifying whether a problem exists in responses to high frequency facilities is to define high frequency. As an agency, HFD must determine a reasonable number of separate responses in a given period of time that places a facility into the high frequency category. Such definitions can vary from a set number (e.g., greater than six responses in a given thirty day period) to benchmarking the frequency of responses to an HFD facility against comparable facilities in other jurisdictions (preferably with different ownership).

Once a “high frequency facility” is defined, the agency must then determine whether the problem is several individual facilities or all facilities in an entire industry (e.g., all nursing homes). If the problem is with individual facilities, there may not be a need to develop a system. Instead, direct assessment and intervention with those facilities may be all that is necessary. If the problem is an entire industry, a system must be developed.

If the industry is problematic, the next step is to develop an alternative to the current manner in which these mostly non-emergent calls are handled. Partnering with a private ambulance provider to handle these call types is one way to shift that demand to an agency that provides non-emergent services for a fee. Another approach is to develop a consortium consisting of all of the facilities in that industry. The purpose of the consortium is to acknowledge that the current system use is overly burdensome to the fire department and reduces its availability to respond to true life-threatening emergencies and that it is the responsibility of the industry to self-regulate. The consortium could agree to fund and staff an ARU to offset the negative impact to first response units in the system.

Community Risk Reduction

An emerging trend in the fire service nationally is a concept called Integrated Community Risk Reduction (CRR). CRR is an integrated approach to risk management that marries emergency operations and prevention strategies into a more cohesive approach to reducing risks in any community. It includes the fire department partnering with the community, non-profit organizations, and any private sector agencies with a nexus to an identified community risk.

The concept starts with the fire department mining data to quantify community risk. Once the community risks have been identified, they are prioritized based on frequency of emergency service demand or consequence (to the victim, to the community, to the local economy). Upon prioritizing the risks, strategies are developed to mitigate the risks. These strategies are incorporated into a CRR plan, which integrates resources across the fire department, partner agencies, and the community to implement the various strategies in a cohesive manner. After plan implementation, the results are reviewed to determine the impact on the risks. Adjustments are made, as necessary, based on the results and the process is refined and continuously re-implemented.

The risks are not limited to structure fires. They can include falls, drowning, interface exposure, disasters, or any risk requiring fire department response. Risk can also be localized by station area. Station captains, in collaboration with fire prevention staff and community groups, can develop and manage a station area-specific CRR plan as a subset of the fire department's plan. CRR lends itself well to a volunteer supported effort, led by competent professional leadership. CRR also includes public education for risk reduction. A prepared and informed community is a safer community.

In this case, Hemet Fire Department can combine the fire prevention program with emergency management, leveraging the skills of each staff member for fire prevention, emergency management, and community risk reduction strategies. The personnel perfoming these two separate tasks currently are either part-time temporary, or contracted. Combining these functions and acquiring permanent staff to fully perform these combined functions generate a more disaster resilient community. Emphasis is on training and equipping the populace in education for prevention, preparedness, and self-help strategies. If the community is better prepared, they will need to rely less on local government.

Personnel Leave Management

While this area is beyond the scope of work for this study, leave management does impact the availability of resources, which directly affects the level of service delivery HFD can provide to its

citizens. The discussion here will be brief. As has been discussed earlier in this report, HFD has had an unusually high and frequent turnover rate for the fire chief position. The lack of stable leadership has had numerous consequences. One of the consequences include a lack of focus on employee leave management internally. Personnel are the most expensive resource in the department and it is in Hemet's best interest to keep as many scheduled employees working as possible.

In an attempt to determine an approximate overtime savings for one of the strategies offered in this report, it was clear that overtime cause is undiscoverable due to the numerous reasons for leave and the vacancies which have been left open. This is an apparent carry-over directive given by the former city manager to the fire chief. It is ESCI's understanding that the fire chief has been approved to begin the process of filling the vacancies. This will eventually help clarify the causes for overtime. It is critical that leave management be assertively and actively managed to keep the on shift force as strong as possible.

One way to manage employee leave is to address vacation bidding. The employer must of course provide opportunity for all employees to take their earned leave (vacations). That can be done while also minimizing community exposure to reduced staffing. The HFD must determine the maximum number of personnel allowed to be prescheduled off based on distributing the leave debt (leave accrual for each position). If senior personnel with significant accrual of discretionary leave are congregated on one shift, there should be transfers to balance the leave exposure across all three shifts. Further, HFD could require paid leave to be bid by seniority and prescheduled at the beginning of each year for the coming year. This ensures the scheduled leave exposure is spread out across the entire year. This serves to keep the on duty shift strength higher throughout the year than might otherwise be experienced by accommodating leave requests without regard to shift strength.

Personnel leave management can be a time-consuming, contiunuous process. By providing the fire chief with administrative help (see *Current Conditions Recommendation #10* under the *Recommendations* section of this report), this task can be managed routinely.

Emergency Medical Dispatch

For many of the strategies for efficient delivery of services listed in this report to work, it requires that 9-1-1 callers be screened to determine the priority of the call. There is no need to perform this task if no change is made to the dispatching of resources. If resources are changed to match the severity of the call, then Emergency Medical Dispatch (EMD) or other medical screening and prioritization protocol must be implemented. This can be implemented within the existing HPD dispatch center with the addition of software, training and certification, and a call-taker position. Alternatively, dispatch services can be contracted with Riverside County, who already uses EMD protocols. It is imperative, however, that differential dispatching of resources be performed to actually capture the efficiencies available with the various strategies offered in this report.

This is consistent with the countywide effort to address the growing demand for services cost effectively and efficiently. The Riverside Emergency Medical Services Agency (REMSA) Strategic Plan calls for expansion of EMD to send the right resources. "…[the standard dispatch system] is not consistent with

treatment by urgency as categorized by nationally recognized Medical Priority Dispatch System (MPDS) protocols. There is significant opportunity to reconfigure the two-tiered response system in a way that will optimize resource utilization, meet medical priority response needs, improve response times to the most acutely ill patients and provide for a more cost-effective system."[11]

Hemet Police Department Partnerships

While the scope of this study does not include an evaluation of Hemet Police Department (HPD), ESCI presumes that HPD distributes its shift and patrol officers in regions or "beats" such that there is geographical coverage throughout Hemet. Operating on this assumption, HPD may be uniquely positioned to provide a quick response to the most life-threatening calls requiring automatic external defilbrillators (AEDs). An officer arriving first can set up an AED and alow the machine to determine whether the patient needs to be defibrillated or not and if so, can deliver the shock automatically. No special medical certification is required. A 15 minute orientation of the AED is all that is prudently necessary for these officers to become a critical part of the EMS system in Hemet without detracting from their regular duties. Field defibrillation makes a cardiac arrest patient much more viable once trained medical responders arrive, improving patient outcomes. AEDs are inexpensive and can be obtained via numerous available grants.

Also, ESCI understands that HPD has a data analyst on staff who evaluates crime statistics for patterns, the analysis of which lends itself to developing strategies to address these crime patterns. Likewise, HFD is in need of similar support. It may be appropriate for the two departments to share the position, relying on data to make sound management decisions, whether from a law enforcement or a fire service perspective. If there is insufficient capacity to share a position, HFD should obtain the services of a data analyst to enable the department to make those sound management decisions.

Expand Paramedic Service & Partner with AMR

American Medical Response (AMR) is the contract ambulance agency for Riverside County. They are required to meet certain response time performance requirements as a condition of the contract. The contract also allows and encourages AMR to partner with other community resources to create system efficiencies. The City of Riverside Fire Department provides paramedic service from every fire station in their city. They typically arrive prior to AMR. Since these assets are staffed by personnel with the same certifications and skills as AMR, it essentially allows the ambulance company to subcontract with Riverside to use RFD's arrival time as AMRs arrival time. The agreement requires RFD to "stop the clock" with their arrival time. This allows AMR to distribute their units differently than they might otherwise have to, which saves the system money. By saving AMR (and therefore the county system) quantifiable unit hours, the cost savings are shared with RFD.

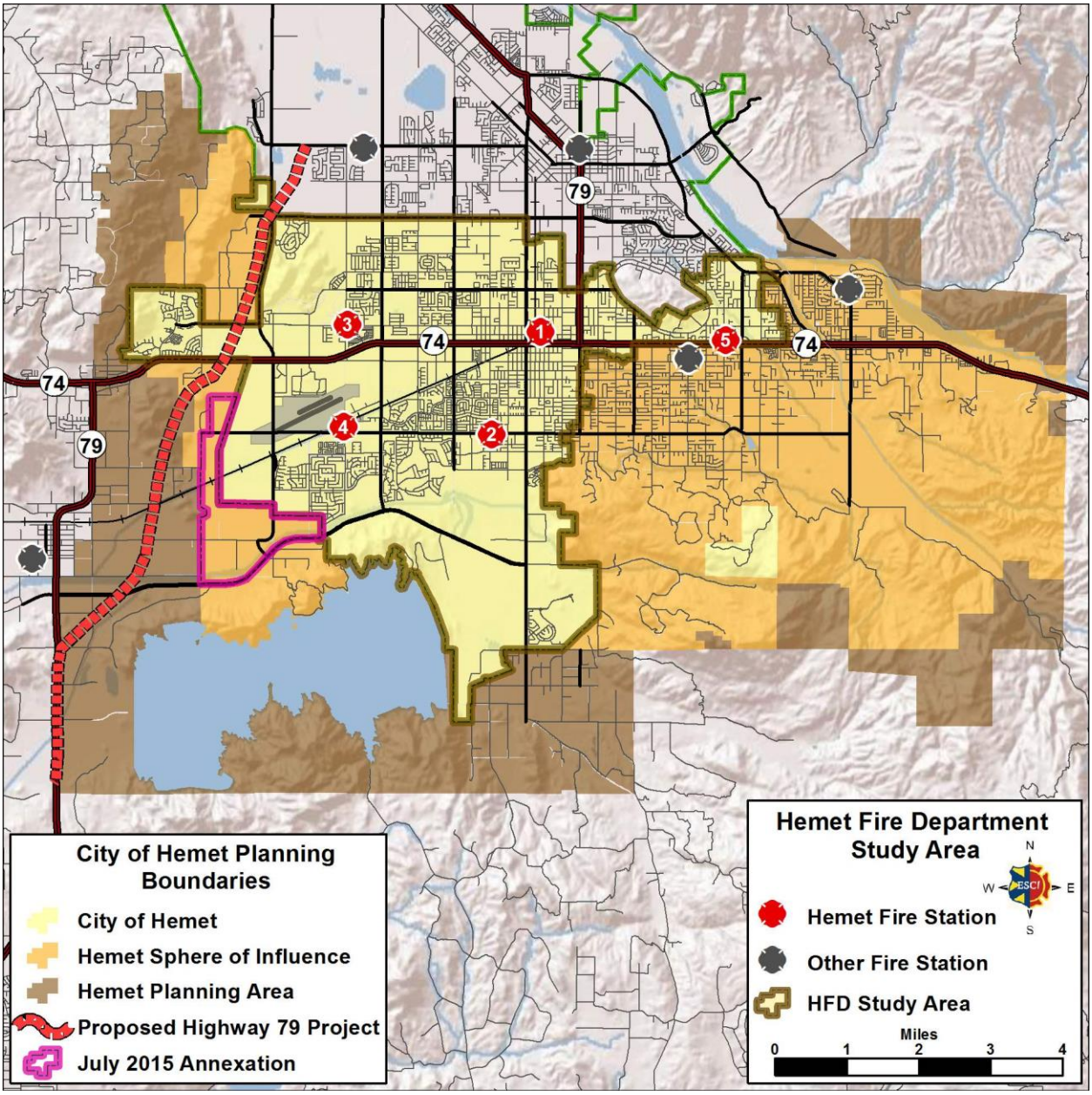
The same agreement could be reached with Hemet if 100% of the HFD units were paramedic staffed. Since HFD is responding to these calls anyway, the only additional cost is the certification of firefighter EMTs to firefighter/paramedics. Significant revenue could be generated from an arrangement with AMR similar to the agreement they have with the City of Riverside.

[11] Riverside County EMS System Strategic Plan 2014 – 2019 – ver. 9-4-14, page 8.

Future Fire Station Considerations

As discussed in the Service Delivery Analysis, the current HFD fire stations are generally well located to serve the current service demand within the Hemet response area. Over 90 percent of 2014 service demand is within 4 minutes travel time of a HFD station. However, development in and around Hemet, annexations, and population growth are sure to change the amount and nature of service demand within the HFD service area. The following figure illustrates the planning boundaries from the City of Hemet Comprehensive Plan.

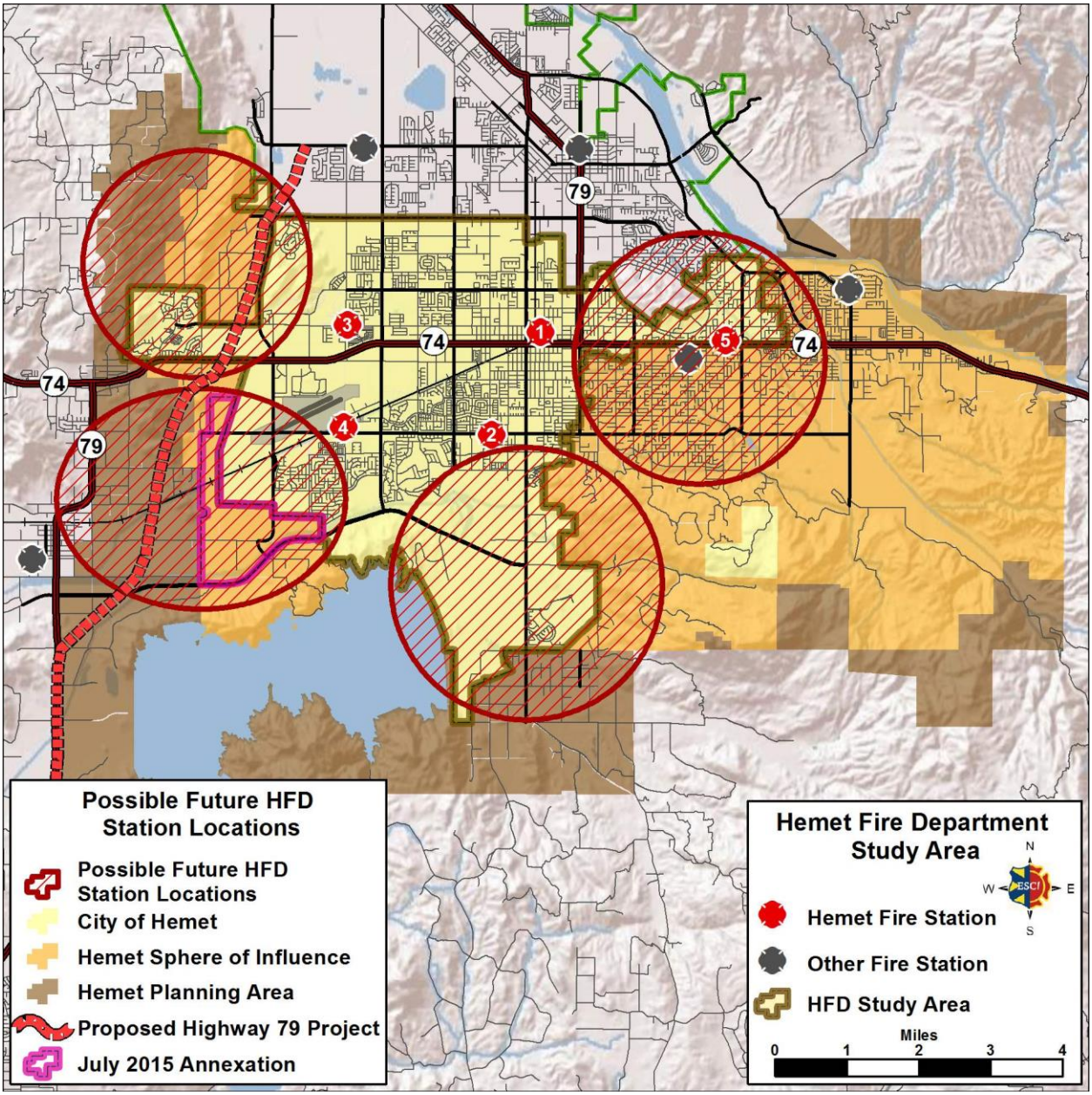
Figure 83: City of Hemet Planning Boundaries



The Hemet planning area is composed of three components: the incorporated City of Hemet, the Hemet Sphere of Influence, and the unincorporated area around the Sphere of Influence. The Hemet Sphere of

Influence is established by state law and represents the probable future boundary of the City. Land in the Sphere of Influence and planning area is unincorporated and not under City of Hemet jurisdiction. However, future development and growth in all three elements displayed above are considered in the Hemet Comprehensive Plan; and may become part of Hemet in the future. Note that ESCI has included two other features in the previous figure: the proposed realignment of Highway 79 along the western edge of Hemet and an annexation of land into Hemet that becomes effective in July 2015. The information displayed in the previous figure is included in the current Hemet Comprehensive Plan and in the Plan for Services in the pending annexation provided to ESCI by the Hemet Planning Department. The following figure illustrates general locations for possible future HFD fire stations.

Figure 84: Possible Future HFD Station Locations



The broad areas for future fire stations identified in the preceding figure, account for growth within the current City of Hemet boundary and also in the unincorporated area around Hemet. These general locations are identified in the Public Safety Component of the Hemet Comprehensive Plan. The timing of constructing a fire station and the specific location of a station should be determined by new development (and/or annexation) in the areas identified, as well as HFD's ability to provide timely service to the increase in service demand that will result.

The proposed realignment of Highway 79 will affect the final location of fire stations on the west side of Hemet. The project will turn Highway 79 into a limited access highway with interchanges where it passes through the Hemet area. ESCI encourages HFD leaders to work with regional planners to determine where interchanges will be located and place fire stations in locations that facilitate access onto and across this new transportation route through the HFD service area.

The area identified for a fire station south of the current HFD Station 2 is inside the City of Hemet boundaries. This area is currently zoned for agricultural and rural residential land use. Changes in land use and development will drive increased service demand and eventually trigger the need for a fire station in this area.

The future station area in the eastern portion of Hemet is currently comprised of incorporated portions of Hemet and unincorporated areas south of Florida Avenue (Highway 74). As discussed earlier, this area is in the City of Hemet Sphere of Influence and will most likely be incorporated into the City of Hemet through the annexation process.

Recommendations

There are recommendations made throughout this report intended to identify needed adjustments to the current conditions of the Hemet Fire Department in this report. They are compiled here again for easy reference.

Current Conditions Recommendations:

1. Establish three shift battalion chiefs to manage the three shifts of the HFD, returning the staff captains to the line.
2. Work with Insurance Services Organization (ISO) to determine if current ladder truck deployment at Station 4 is optimal for ISO rating (ISO re-rating currently in progress).
3. Consider adding additional staffing and/or apparatus during periods of peak service demand.
4. Monitor Unit Hour Utilization (UHU) for first out apparatus, especially in the Station 1 area.
5. Develop a methodology to monitor all components of the total response time continuum. Consider adding a part time data analyst to coordinate data gathering and analysis.
6. Establish performance goals for turnout time performance and work with on duty crews to improve turnout time performance.
7. Monitor total response time performance by incident category, station response area, and for the overall HFD service area.

8. Establish response performance goals for each of the parameters in the previous recommendation (incident category, station response area, overall HFD service area).
9. Clarify the definition of "response time" as it pertains to Measure EE.
10. Conduct field validation exercises with its crews to verify or modify the critical task analyses for the sample Critical Task Lists for each major incident type.
11. Add a deputy chief (exempt) position to manage the operational workload for the HFD.
12. Combine emergency management and fire prevention into a CRR strategy and increase staffing to this program.
13. Bargain a shorter hourly shift schedule to reduce risk, increase firefighter safety, and improve productivity.
14. Implement, adopt, and fund apparatus equipment replacement schedule.
15. Update, adopt, implement, and fund support equipment schedule.
16. Conduct a master facility plan to determine upgrades, replacement options, funding mechanisms, and timing. Implement and fund a station replacement schedule based on the findings of the master facility plan.
17. Utilize GIS to map service demand within the HFD service area and identify areas with high demand.
18. Work with city planners to stay apprised of planned new development and annexations that may affect the distribution of stations or apparatus.
19. Develop a master plan for the next ten to twenty years.
20. Develop a current strategic plan to guide the HFD for the next three to five years.
21. Conduct an annual inventory of all attractive assets.
22. Establish a bar code asset tag system to facilitate annual inventory of attractive assets.
23. Establish a Code of Ethics or a Code of Conduct.
24. Retain policies that have been rescinded or revised in archives to use for any potential future litigation defense.
25. Remove mission, vision, and values posted throughout the fire department until they are validated or replaced.

The following strategies are recommended by ESCI to maximize HFD's services as efficiently as possible. ESCI has operated on the premise established by Mayor Krupa at the beginning of this study: "***Status Quo is a No Go***." Thus the following recommendatons are "out of the box" solutions that individually may not be viewed as radical, but together represent an enormous shift in the way business is done in the fire service. Indeed, they represent a business approach to service delivery.

Strategies for Demand Reduction:

- Implement CARES program to address 9-1-1 system overusers (see *Responses to High Frequency Patients* strategy).
    - Partner with UC-Riverside's Sociology graduate program for interns.
- Address high frequency facilities individually or as a class of facilities (see *Responses to High Frequency Facilities* strategy).
- Implement Integrated Community Risk Reduction program (see *Community Risk Reduction* strategy).
    - Merge Emergency Management and Fire Prevention.

Strategies for Gained Capacity:

- Move Truck 1 to Station 1 for better response to target hazards. Implement clear policies and procedures related to personnel leave (see *Personnel Leave Management* strategy).
- Re-evaluate 48-96 work schedule.

Strategies for Partnerships:

- Negotiate a joint staffing agreement with CAL FIRE's Little Lake Station (see *Joint Staffing of the Little Lake Station* strategy).
- Implement or contract for Emergency Medical Dispatch services (see *Emergency Medical Dispatch* strategy).
- Partner with HPD for AED use and data analyst (see *HPD Partnerships* strategy).
- Partner with REMSA to "stop the clock," which supports implementation of their strategic plan (see *Expand Paramedic Service & Partner with AMR* strategy).
    - Implement improvements that maximizes efficiency of an integrated two tiered response system – Goal 2.
    - Commence an EMS innovations delivery program – Goal 3.
        - Objective 3.3. The alternate delivery steering groups should collect data and develop a formal business plan for each alternative delivery model it wishes to consider for limited term pilot studies.
        - Objective 3.4. The EMS system should collect data and field test potentially viable models through limited-term pilot studies.
        - Objective 3.5. Develop viable and sustainable long-term funding models for the accepted alternate delivery models.
        - Objective 3.6. Submit draft plans and models for EMS stakeholder input.
        - Objective 3.7. Formally integrate desired alternative delivery models into the Riverside County EMS System.
    - Adopt system enhancements for Advanced Life Support (ALS) and Emergency Ambulance Contracts – Goal 10.
    - Partner with public safety organizations to align and enhance public education and prevention efforts – Goal 11.
- Shut down Station 5 and move staff to jointly staff the Little Lake Station with CAL FIRE.

Strategies for Operational Enhancements:

- Hire three credentialed battalion chiefs, returning staff captains to shift.
    - Assign program management responsibilities to each shift B/C as follows:
        - Training
        - Community Risk Reduction
        - Emergency Medical Services
- Hire a deputy chief to manage all operational aspects of the department, allowing the fire chief to administer the department.
- Implement Automatic Vehicle Locator (AVL) technology to dispatch the closest physical unit.
- Implement a PAU and staff it with the gained capacity created by the return of the staff captains (see *Peak Activity Unit* strategy).
    - Assign two of the three line positions to a PAU on a 4-10 schedule.
    - Use data to determine where and what hours the PAU will be assigned.
    - Its mission should be focused on EMS responses.
    - Use the PAU to offset overtime exposure when necessary.
- Implement an ARU and staff it with the gained capacity created by the return of staff captains (see *Alternate Response Unit* strategy).
    - Assign the third gained line position to an ARU on a 4-10 schedule.
    - Coordinate with implementation of CARES program.
    - Use the ARU to offset overtime exposure when necessary.

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