

Final Report



**ORGANIZATIONAL AND
MANAGEMENT ANALYSIS
AND STRATEGIC PLAN
FOR THE
CITY OF BEVERLY HILLS
FIRE DEPARTMENT
VOLUME 1 OF 3 – MAIN REPORT**

October 29, 2010



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VOLUME 2 of 3 – Statistical Appendix (separately bound)

VOLUME 3 of 3 – Strategic Plan (separately bound)

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EXECUTIVE SUMMARY

The City of Beverly Hills retained Citygate Associates, LLC to conduct a general organizational and management analysis of the City of Beverly Hills Fire Department along with strategic planning assistance to jointly develop with the staff an updated Strategic Plan. Included in the work is an assessment of current emergency response and headquarters services provided by the Department. The analysis identifies gaps—if any—in operations and resources, and where appropriate, develops recommendations to maximize current Fire Department operations and resources. In addition, the analysis was to identify “best practices” that may be appropriate for application in Beverly Hills.

It needs to be stated at the front of this study that Citygate Associates team members who spent time in Beverly Hills found the fire staff at all levels very cooperative, professional and technically competent. They are committed to their City, agency, and mission. Given the struggle to keep up while coping with an ever-tightening economy, there is pride and ongoing effort to deliver the best customer service with the currently available resources. Fires are being attended to and medical calls are being answered with excellent patient care.

The recommendations in this study need to be taken in the context of a “best practices tune-up” for a good agency, not a set of fixes for an agency that is behind the times. We find even with the suggested improvements needed over time that, at present, the City of Beverly Hills Fire Department is an excellent suburban fire department.

This comprehensive study is presented in several sections including: this Executive Summary summarizing the most important findings and recommendations; the fire station/crew deployment analysis supported by maps and response statistics; the assessment of non-deployment headquarters functions and the fiscal costs associated with the proposed recommendations. The final section integrates all of the findings and recommendations presented throughout the report and concludes with suggested priorities.

To gain an understanding of Beverly Hills and its fire service needs the Citygate team:

- ◆ Reviewed agency documents and conducted stakeholder listening interviews within and outside of the Department.
- ◆ Used an incident response time analysis program called *NFIRS 5 Alive*™ to review the statistics of prior incident performance. The results were plotted not only on graphs and charts but “live” using 3D tools over Google Earth images.
- ◆ Assessed stakeholder perceptions and expectations of Fire Services – by issuing SWOT questionnaires to employees (**S**trengths, **W**eaknesses, **O**pportunities & **T**hreats) plus a survey instrument to Departmental stakeholders to listen to what the perceptions of the Department are and how it is or is not meeting needs.

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- ◆ Facilitated multiple Strategic Planning and research sessions. The Fire Chief selected a working group for this effort that was a representative cross section of the Department.
 - ◆ For the headquarters systems review, Citygate used the Commission on Fire Accreditation International self-assessment criteria and National Fire Protection Association Standard 1201, *Standard for Providing Emergency Services to the Public* as performance indicators and other NFPA standards as the basis for evaluating non-response related services, such as fire prevention, training and administration.

The Beverly Hills Fire Department is a well-run, smoothly functioning fire department. Beverly Hills, along with its neighbors, enjoys the luxury of a solid and well-organized automatic aid system. The Beverly Hills Fire Department has an internal culture with a sense of values and principles best described as self-motivated and first class.

There has been an almost complete turnover of chief officers in recent years, the headquarters staff has been reorganized several times as Fire Chiefs and economic times changed, and new firefighters have instilled a new energy into the Department making this an ideal opportunity to assess where it is and where it is going in the future.

This does not mean there are not issues to be addressed. However, the community can take pride in and feel confident about its fire department.

POLICY CHOICES FRAMEWORK

As a starting point, Beverly Hills leadership needs to remember that there are no mandatory federal or state regulations directing the level of fire service staffing, response times and outcomes. Thus, communities have the level of fire services that they *can afford*, which is not always what they would desire. However, the body of regulations on the fire service provides that *if fire services are provided at all, they must be done so with the safety of the firefighters and citizens in mind* (see regulatory discussion on page 18).

OVERALL CITYGATE PERSPECTIVE ON THE STATE OF BEVERLY HILLS' FIRE SERVICES

In brief, Citygate finds that the challenge of providing fire services in Beverly Hills is similar to that found in many California cities. That is, providing an adequate level of fire services within the context of limited fiscal resources, competing needs, growing populations and the uncertainty that surrounds the exact timing and location of future development.

The City has recognized the value of fire prevention and the need to prevent or limit the severity of fires, given the type of housing stock, commercial buildings, younger and elderly residents

and the threat of wildland fires on the City's edges. To meet these challenges, the City has adopted safety codes more strenuous than those mandated by state minimums. Examples include the automatic fire sprinkler ordinance and wildland fuel management programs.

The City of Beverly Hills has adequate fire station coverage, partially because of its automatic aid relationship with its neighboring fire departments. Citygate's deployment study findings do **not** recommend that Beverly Hills requires additional fire stations, or additional on-duty firefighter staffing *in the near term*, but does, to a small extent, need enhanced staffing in headquarters programs. This study does recommend ways the Department can re-deploy existing emergency staffing for better service in the short-term at existing costs, while adopting long-term policies that can guide future decisions on deployment as the economy improves.

Citygate evaluated all aspects of the Fire Department during the preparation of this deployment and fire headquarters systems audit, and several long-term challenges for the City emerged. To address each of these challenges, Citygate makes key findings and, where appropriate, specific action item recommendations that deserve specific and particular consideration. Starting in Section 5 on page 95, all the findings and recommendations are presented together, in order. Overall, there are 21 key findings and 17 specific action item recommendations.

It is important that the reader of this study understands that while there are issues to be planned for and improved upon in the Department, there is not a problematic, "won't do it, can't do it" culture to be overcome. The employees of the Department are eager for a plan that gives direction and *triages the existing resources* to do an even better job for the citizens of Beverly Hills within the current economic constraints.

MAIN CHALLENGES

One can summarize the fire service challenges that face the City in two themes: (1) *reconfiguration of the existing deployment system to improve paramedic rescue ambulance coverage for simultaneous incidents; and (2) the modest need to increase headquarters program staffing to support essential programs such as training.*

Challenge 1: Field Operations Deployment (Fire Stations and Staffing)

Fire department deployment, simply stated, is about the *speed* and *weight* of the attack. Speed calls for first-due, all risk intervention units (engines, ladder trucks and specialty companies) strategically located across a department. These units are tasked with controlling everyday, average emergencies without the incident escalating to second alarm or greater size, which then unnecessarily depletes the department's resources as multiple requests for service occur. Weight is about multiple-unit response for significant emergencies like a "room and contents structure fire," a multiple-patient incident, a vehicle accident with extrication required, or a complex rescue or wildland fire incident. In these situations, departments must assemble enough

firefighters in a reasonable period in order to control the emergency safely without it escalating to greater alarms.

In Section 2 of this study, Standards of Response Cover (Station Deployment and Staffing) Analysis, Citygate's analysis of prior response statistics and use of geographic mapping tools reveals that the City has *a modest staffing issue to rectify with existing staffing*. Additional emergency staffing needs are further out into the future and dependent on emergency call for service volume growth and the fiscal capacity of the City to be able to offer the highest level of service at all times.

While no one city (even a metropolitan one) can stand by itself and handle everything and any possibility without help, a desirable goal is to field enough of a response force to handle a community's day-to-day typical responses for primary single-unit response needs equitably to all neighborhoods, as well as be able to provide an effective initial response force (first alarm) to moderately serious building fires. Events larger than these will require assistance from mutual aid resources.

Thus, Citygate's **key** (not all) findings and recommendations are summarized below. For reference purposes, the findings and recommendation numbers refer to the sequential numbers in the main body of the report. Note that not all findings and recommendations that appear in the full report are listed in this Executive Summary, only those that are the *most significant*.

Finding #1: The City does not have a complete and current best practices designed fire deployment measure adopted by the City Council that includes a beginning time measure starting from the point of dispatch receiving the 911 phone call, and a goal statement tied to risks and outcome expectations. The deployment measure should have a second measurement statement to define multiple-unit response coverage for serious emergencies. Making these deployment goal changes will meet the best practice recommendations of the Center for Public Safety Excellence (formerly the Commission on Fire Accreditation International).

Finding #2: The City has adopted best practices building and fire safety codes to lessen building and wildland fire risks, along with structural code requirements to improve earthquake safety. Considered as a total package, the City is one of, if not the most progressive communities for fire safety regulations that Citygate has observed.

Finding #3: The City's current daily firefighter and command chief unit staffing at 25 provides the City the "weight" of response to handle one serious event or two modest events without being immediately dependent on mutual aid. This level of response capacity is very appropriate to the potential and unique risks found in Beverly Hills, which from only a measure of population or type of actual

emergencies is not comparable to a similarly sized suburban city in terms of risks to protect.

Finding #4: The City is substantially developed enough in terms of population density and building development to desire an urban level of first-due fire unit coverage, which is 4 minutes of travel time for the best possible outcomes.

Finding #6: Given the difficult to serve terrain and the coverage at the 4th minute of travel in the high call volume areas, the current locations and quantity of three fire stations is the most cost effective model.

Finding #7: To increase coverage at the 4th minute of travel in the hills would require a 4th fire station. Given the modest number of calls for service in these lighter population and call for service density residential neighborhoods, Citygate does not find that adding another station would be cost effective. Even if another station were added at the base of the hills, the upper areas would never receive 4-minute travel coverage 90 percent of the time from either Station #2 or a new station.

Finding #8: With a Citywide fire/EMS incident first-due unit performance of 6:20 (minutes/seconds) at 89.5 percent, the overall current station and automatic aid system is delivering a first unit **better than** a Citygate and national recommended best practice goal point of 7 minutes, 90 percent of the time.

Recommendation #1: Deploy a 3rd Paramedic Ambulance: Transfer a paramedic firefighter from the Ladder Truck at Station #1 to Engine #2, thus making Engine #2 a full Advanced Life Support (ALS) unit with two paramedics per LA County EMS Agency requirements. The firefighter from Engine #2 will be transferred to the Ladder Truck. For ambulance calls in Engine #2's District or for a 3rd ambulance request citywide, dispatch BLS Rescue Ambulance #3 from Station #1 using Engine #5's 2-person crew and also send Engine #2 with its paramedics.

With these moves, Engine #2 will have two paramedics per day and can cross-staff the ambulance when a 3rd paramedic ambulance is needed, *within existing staffing and costs.*

Recommendation #3: Adopt Revised Deployment Measures: The City should adopt revised performance measures to direct fire crew planning and to monitor the operation of the Department. The measures should take into account a realistic company turnout time of 2 minutes and be designed to deliver outcomes that will save patients medically

salvageable upon arrival and to keep small but serious fires from becoming greater alarm fires. Citygate recommends these measures be:

- 3.1 Distribution of Fire Stations: To treat medical patients and control small fires, the first-due unit should arrive within 7 minutes, 90 percent of the time from the receipt of the 911 call. This equates to 1-minute dispatch time, 2 minutes company turnout time and 4 minutes drive time in the most populated areas.
- 3.2 Multiple-Unit Effective Response Force for Serious Emergencies: To confine fires near the room of origin, to stop wildland fires to under 3 acres when noticed promptly and to treat up to 5 medical patients at once, a multiple-unit response of at least 19 personnel should arrive within 11 minutes from the time of 911 call receipt, 90 percent of the time. This equates to 1-minute dispatch time, 2 minutes company turnout time and 8 minutes drive time spacing for multiple units in the most populated areas.

Challenge 2: Headquarters Program Functions

A fire department Beverly Hills' size needs to have a management team that is the proper size and adequately trained and supported. There are increasing regulations to be considered in operating fire services, and the proper hiring, training and supervision of line employees requires an equally serious commitment to leadership and general management functions.

The organization chart shows an organization that does not currently meet the needs of a department the size of Beverly Hills. Due to the fiscal pressures on the City, there has been an appropriate and greater emphasis on staffing fire companies to provide emergency response. This resulted in reductions in the headquarters team needed to coordinate and lead the organization. These reductions are not sustainable for very much longer. The recommendations in this study acknowledge economic constraints by re-structuring current staffing to meet critical needs in administration for a finite period of time. Other recommendations are for temporary staffing funds to support high value programs already underway.

Citygate understands the City's fiscal situation and only finds the headquarters functions *critically* insufficient in Training and Office Support Positions. However, the following findings and recommendations provide a road map from which to request additional resources as the City finds the ability to provide them. When all the following recommendations are implemented, the Department's headquarters staff will be the appropriate size for Beverly Hills.

Finding #13: The Department lacks a Safety and Training Officer and centralized focus on training and safety. Since the Department had a robust training program up until a little over a year ago, the personnel probably retain enough residual knowledge, skills and abilities to continue for a while into the future. However, at some point the same knowledge, skills and abilities will begin to degrade and emergency service performance will degrade with it. Without a designated Safety and Training Officer, the training/safety programs will not be able to succeed or meet best practice recommendations, or essential requirements on the fire service by CAL OSHA.

Finding #14: While a Fire Department Performance Audit is not set-up to do a detailed desk and workload audit of office support needs, in Citygate's experience, we have found the office support capacity out of sync with what we have seen in other fire departments of Beverly Hills' size. Moreover, the current business processes are not even fully automated or tied to City systems.

Even a modest increase in support staff hours will significantly increase headquarters staff output and citizen responsiveness. Most likely, an increase of .5 FTE for administration support is needed as soon as funding allows.

Finding #15: The Fire Department is not staffed to adequately use, maintain or implement office and emergency service electronic data systems. What little gets done will slow or completely stall the timely implementation of fire inspection permit revenue systems and the transition to a new dispatch system.

Finding #16: Budget reductions have reduced public education programs almost to the point of extinction. This cannot continue for very much longer and have Beverly Hills capable of sharing the burden of self-help and having a fire safe community.

Recommendation #5: Training Officer: On an interim basis, assign the Training Officer (up to 2 years, given the fiscal climate) *management* function to one of the shift battalion chiefs. Then, assign the Engine #5 Captain during the workday to provide coordination, some delivery and verification reporting of training to each duty platoon. The battalion chief's duties would be to lead the program, determine departmental training needs, set overall schedules with the captains and attend regional training officer meetings.

Each platoon's Training Officer (E5 Captain) will ensure that each shift is as fully engaged in training as possible and fulfills the integrated Department-wide plan. This includes providing shift leadership to ensure that training and drills are scheduled, completed

and recorded, and that assistance with the training is provided as much as his or her skills permit. Currently, the E5 Captain is assigned to coordinate daily shift scheduling. This would be transferred to the duty Battalion Chief's Aid/Scene Safety Officer.

5.1 While using E5 Captains is an interim solution, a permanent training officer solution is needed as soon as possible to provide coordination and leadership across all three shifts. By FY12/13, fund a 40-hour battalion chief (or similar position) as the Training Officer for the training program to meet the regulatory and safety needs of the Department. The Training Officer position could also be a rotation assignment every 3 years to/from another position for career development. The second Deputy Chief position will *not be restored*.

Recommendation #7: Office Support Positions: The City should undertake an analysis of the administrative support needs of the Fire Prevention, Fire Administration and Fire Operations support functions as soon as possible. This should include adding back minimum support hours to technology and fire prevention permits.

There should be initial support immediately to two critical needs – entering fire inspection records into the existing database and for the replacement Fire Department dispatch/records systems project. One way to do this at a modest expense would be to hire temporary clerical help to fast track the inspection records project, say 8-16 hours per week, and to fund on overtime 8 hours per week for an experienced Fire Captain to work on supporting internal technology projects.

Recommendation #8: Technology Plan: The Fire Department needs a technology plan to:

- Automate end-to-end the inspection, permitting and revenue programs to City systems;
- Be sure the next generation dispatch and fire records systems meet the need for and provide management information and metrics with which to manage the Department's programs;
- Maintain and keep technology replacement programs current for radios and field service technologies.
- Appropriately staff the agency's needs.

Recommendation #9: Technology Position: As funding permits, create a civilian position – *Technology Officer*. This position is to plan, direct and provide Quality Assurance for all computer systems, e-records, fire radios, and station alerting systems. The Technology Officer will coordinate regional technologies on radios and mutual aid. Class/comp for the position is equivalent to 2nd tier IT support staff.

9.1 Immediately fund on overtime at a Fire Captain rate, 8 hours per week for technology support and new dispatch system work.

Recommendation #10: Public Education: The City, as funds permit, needs to redesign and fund the delivery of fire prevention education. This program does not have to be done by Fire Department sworn officer position. The public education programs deserve emphasis as a key Fire Department service to the community, to include the requisite staffing hours and media material resources for public outreach.

FIRE PLAN PHASING AND COSTS

Some of the recommendations in this planning effort requiring minimal additional resources can be implemented in parallel. Others will take several fiscal years, both in time and funding. Given these two realities, Citygate recommends the following short- and long-term priorities:

Priority One

- ◆ Absorb the policy recommendations of this fire services study and adopt revised Fire Department performance measures to drive the deployment of firefighting and emergency medical resources.
- ◆ Re-configure as recommended the staffing to provide a 3rd paramedic rescue ambulance, by combining as needed, Engine #2 and #5's crews. Implementation requires a paramedic transferred from the Ladder Truck to Engine #2.
- ◆ Provide temporary staffing support funds to the fire prevention inspection records and billing start-up project and to fire technology support, especially the replacement dispatch system project.

Priority Two

- ◆ Restore a 1.0 Training Officer position at the level of Battalion Chief (or an equivalent position).
- ◆ Increase office support staff (clerical) by a minimum of .5 positions.

Priority Three

- ◆ Restore the technology support the Department had prior to the headquarters staffing cutbacks.
- ◆ Restore a Public Education position with a 1.0 non-sworn position.
- ◆ Begin a capital design, funding and construction project for a modest fire training facility inside the city limits.

The following costs are estimated in current dollars to show the order of magnitude of what is ahead for City fire services in the near- to mid-term.

If the City decides to begin adding staff as recommended by Citygate, the table below provides an *illustration* or sample of how this might be phased in over several years and the associated annual estimated cost in FY 10-11 dollars:

Sample Phasing and Additional Cost Plan

Phase	Item	Ongoing Operating Cost	One Time
One	Detailed review of audit and strategic plan	Staff Time	
	Reconfigure Staffing to Enable Paramedic Rescue Ambulance #3	No Cost	
	Add 16 hrs/week for fire prevention clerical support <i>(Does not continue in Phase II)</i>		\$19,200
	Add 8 hrs/week Fire Captain technology support		\$30,000
	Near term totals:	0	\$49, 200
Two	Add one Battalion Chief – Training Officer	\$250,045	0
	Increase office support staff (clerical) by a minimum of .5 positions	\$39,000	0
Three	Add one Technology Support position	\$101,450	
	Add one Public Education position	\$81,640	
	Outer Year Totals:	<u>\$472,135</u>	0
<i>Long Term</i>	Design and locate a modest training facility	\$75,000	<i>Unknown</i>

SECTION 1—INTRODUCTION AND BACKGROUND

1.1 REPORT ORGANIZATION

This report and the Strategic Plan documents are structured into the following sections that group appropriate information together for the reader.

This Volume (**Volume 1**) includes:

- Section 1 Introduction and Background: Background facts about Beverly Hills' current Fire Services.
- Section 2 Standards of Response Cover (Staffing/Station) Analysis: An in-depth examination of the Fire Department's deployment ability to meet the community's risks, expectations and emergency needs.
- Section 3 Fire Department Review of Headquarters Program Functions: A review of the Fire Department's non-emergency operations and headquarters programs.
- Section 4 Fiscal Analysis: An outline of the costs to implement this plan's recommendations.
- Section 5 Recommended Solutions and Phasing Strategies: An integrated recommendations and conclusions section.

Separately attached:

Volume 2 In-depth Response Statistics Appendix

Volume 3 Strategic Plan

1.1.1 Goals of Report

As each of the sections mentioned above imparts information, this report will cite findings and make recommendations, if appropriate, that relate to each finding. There is a sequential numbering of all of the findings and recommendations throughout the first three sections of this report. To provide a comprehensive summary, a complete listing of all these same findings and recommendations, in order, is found in Section 5. Finally, the report brings attention to the highest priority needs and possible timing.

This document provides technical information about how fire services are provided, legally regulated, and how Beverly Hills Fire Department currently operates. This information is presented in the form of recommendations and policy choices for the Beverly Hills leadership and community to discuss.

The result is a solid technical foundation upon which to understand the advantages and disadvantages of the choices facing the Beverly Hills leadership and community on how best to provide fire services, and more specifically, at what level of desired outcome and expense.

1.1.2 Limitations of Report

In the United States, there are no federal or state regulations on what a minimum level of fire services has to be. Each community, through the public policy process, is expected to understand the local fire risks, their ability to pay, and then to choose their level of fire services. **If** fire services are provided at all, the federal and state regulations specify how to do it safely for the personnel providing the service and the public.

While this report and technical explanation can provide a framework for the discussion of fire services for Beverly Hills, neither this report nor the Citygate consulting team can make the final decisions or cost out in detail every possible alternative. Once final strategic choices are given policy approval, City staff can conduct any final costing and fiscal analysis as normally done in the operating and capital budget preparation cycle.

1.2 BACKGROUND

This project involved the development of a Fire Services Deployment and Administrative Services Review and Strategic Plan. This effort involved the study of the fire services risk within the City of Beverly Hills. In this report, the term “Department” will be used when referring to the fire agency itself, and the term “City” will be used when referring to the City of Beverly Hills.

The City of Beverly Hills is world renowned; even its zip code has certain notoriety due to a television series by the same name. This uniqueness places some unusual burdens on the Fire Department that are normally associated with large cities like New York and San Francisco. Few other cities of 35,000 population deal with Presidential visits on a fairly regular basis.

Located in the western part of Los Angeles County, along with the City of West Hollywood, it is surrounded by the City of Los Angeles. In 2007, Coldwell Banker listed Beverly Hills as the most expensive real estate market in the nation.



Several exclusive shopping retailers for which Beverly Hills is noted

Unlike most of the Los Angeles area, Beverly Hills has no freeways. The major east-west thoroughfares are Wilshire Boulevard, Santa Monica Boulevard and Sunset Boulevard; Coldwater Canyon Drive is the access to the north into the San Fernando Valley; Beverly Drive and Robertson Boulevard provide access to the south into Los Angeles. Most of the streets in the flatter part of the City are on a grid pattern; in conjunction with the main arterials, this permits rapid access and short emergency response times. In

the northern hilly areas of the City, the streets are in a more dendrite pattern and this hampers efficient fire station spacing for emergency access.

Demographically, according to the 2000 census, Beverly Hills is about 85 percent white, 7 percent Asian, 4.6 percent Latino or Hispanic and the remainder other races. It is also the home to a large Persian community. Just over half the households are married couples. The average household is 2.24 people.



Beverly Hills' Italian Renaissance style City Hall built in 1931

The City is a general law city governed by a five member City Council; yearly one member of the Council is chosen by the Council to serve as mayor.

Underneath Beverly Hills is a large and active oil reserve. Oil is currently being pumped from the reserve at a little over $\frac{3}{4}$ of a million barrels a year from four drilling centers in the City. The State Department of Conservation estimates that about 11 million barrels remain in reserve.

Beverly Hills is also home to the

consulates of Armenia, Brazil, Colombia and Ecuador.

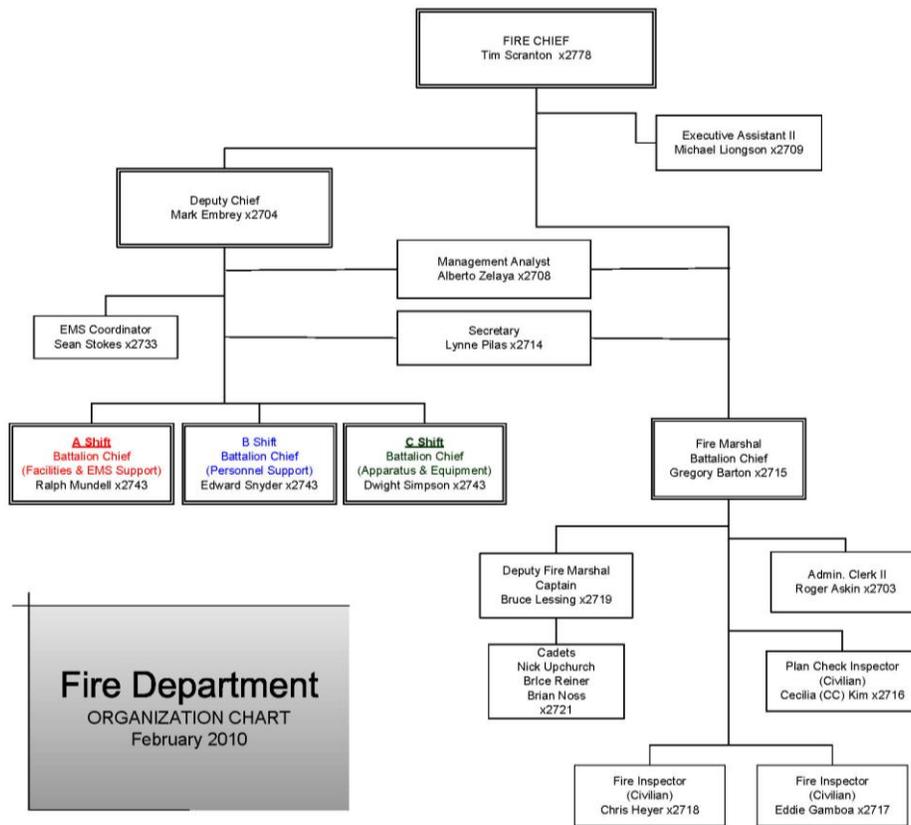
Beverly Hills has the same Mediterranean climate as the rest of Southern California. In the foothill area of the north part of the City this can be a problem in late summer and early fall when the Santana winds blow, bringing in hot dry air and high winds from the desert.

1.3 GENERAL DESCRIPTION OF THE FIRE DEPARTMENT

Beverly Hills Fire Department (BHFD) operates out of three strategically located fire stations. The Department has a daily constant (minimum/maximum) staffing of 25 firefighters on duty operating three fire engines (4 firefighters each), one ladder truck (five firefighters), two paramedic rescue-ambulances (each with 2 firefighter/paramedics), one engine staffed with a Captain and Engineer, whom are jointly dispatched with the closest available Paramedic Rescue Ambulance, and a command team (Battalion Chief and Accountability Officer). Headquarters staffing consists of the Fire Chief, Deputy Chief, Fire Marshal, and their staffs as shown below.

The current headquarters configuration came about as a result of the fiscal year 2009/2010-budget cycle. For a department of this size with the unique challenges that it faces on a regular basis, this is a very modest staff. It presents some unique challenges and will be discussed in greater detail in the section on non-deployment issues.

Beverly Hills Fire Department Current Organization Chart



The Department enjoys an Insurance Services Office (ISO) Class 1. This is the top classification on the ISO grading schedule, and represents superior property fire protection from the threat of conflagration. The ISO grading schedule ranges down from Class 10, which indicates that the community's fire-suppression program does not meet ISO's minimum criteria. The ISO Classification is one of the parameters some insurance companies use to establish the fire insurance rates for properties. The ISO Evaluation has several metrics to it.

To determine a community's Public Protection Classification, ISO conducts a field survey. Expert ISO staff visits the community to observe and evaluate features of the fire-protection systems. Using a manual called the Fire Suppression Rating Schedule, ISO objectively evaluates three major areas:

- ◆ **Fire alarm and communications systems** – A review of the fire alarm system accounts for 10 percent of the total classification. The review focuses on the community's facilities and support for handling and dispatching fire alarms.
- ◆ **Fire department** – A review of the fire department accounts for 50 percent of the total classification. ISO focuses on a fire department's first-alarm response and initial attack to minimize potential loss. Here, ISO reviews such items as engine

companies, ladder or service companies, distribution of fire stations and fire companies, equipment carried on apparatus, pumping capacity, reserve apparatus, department personnel, and training.

- ◆ **Water supply** – A review of the water-supply system accounts for 40 percent of the total classification. ISO reviews the water supply a community uses to determine the adequacy for fire-suppression purposes. ISO considers hydrant size, type, and installation, as well as the inspection frequency and condition of fire hydrants.

The goal of the ISO Classification is to indicate to insurance underwriters how well the community's overall firefighting system protects it from major, catastrophic fires. To this end, the ISO measures both first-due and follow-up resources in their ability to keep small fires, small. Being a Class 1 Department does not mean that moderate building fires will not occur. It does mean that the water system, fire engines, aerial ladders, staffing, training and response times exist to give the community *superior resistance* to small fires devastating buildings, or worse, spreading to adjoining properties starting conflagrations.

The ISO does not underwrite (sell) insurance; it sells data to companies that do the underwriting. Given that insurance underwriting is a competitive, private sector business, there is no data or correlation available to local government or the public that ties total premiums paid in a community to the ISO fire department classification. Based on each building's unique risk, underwriters can write policies that are divergent from the fire classification.

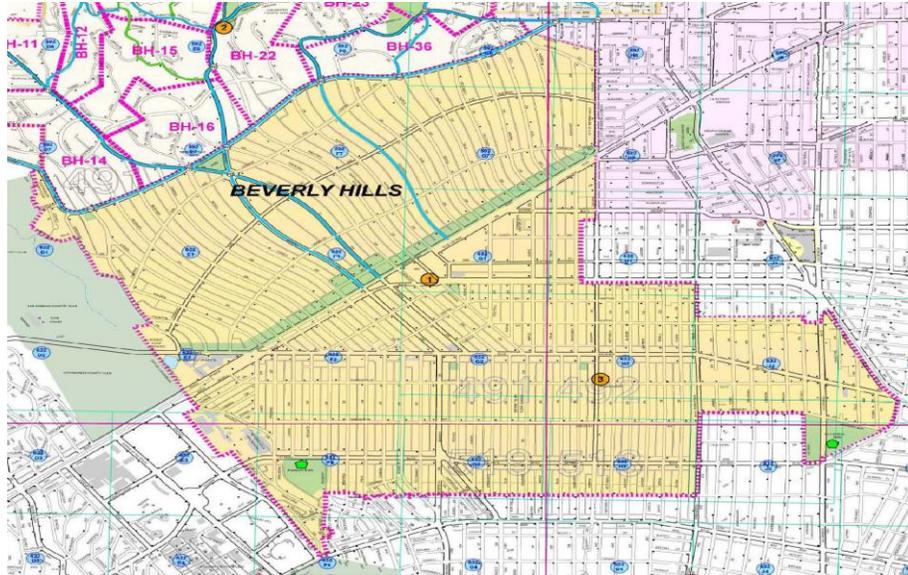
Also, depending on the usage of the building, the fire portion of the premium may be less than 25 percent of the total policy cost. Insurance companies pay out losses for a wide variety of hazards. As the portion of the policy cost due to fire loss has fallen over the decades due to better building codes and prevention practices, even if an agency increased or lowered its ISO fire department classification, the aggregate impact on premiums may be modest, if in that community the percent of the premium attributable to fire was already low to begin with.

For these reasons, Citygate does not benchmark a fire agency to only the ISO Public Protection Classification system. There are other best practice benchmarks from the National Fire Protection Association (NFPA), the Commission on Fire Accreditation and the Emergency Medical Care community to allow an agency to assess its risks, desired outcomes, ability to fund and then design a firefighting and emergency medical deployment system to balance these variables. Given the divergence of communities in the United States and these multiple factors being present in different amounts per community, it is impossible to prescript a one size fits all formula for fire service deployment levels.

As can be seen in the map on the next page, the Beverly Hills stations are oriented along a north south axis with Station #1, the headquarters in the middle, Station #2 to the north in the foothills and Station #3 to the southern area. From this map, it is easy to see why Stations #1 and #3 can

get everywhere in the City quickly while the geography and street layout is challenging in Station #2's area. This will all be discussed in detail in the section of the study on deployment.

Map of Beverly Hills



1.4 BEVERLY HILLS PROJECT APPROACH AND RESEARCH METHODS

Citygate used several tools to gather, understand, and model information about the City and Fire Department for this study. We started by making a large document request to the Department to gain background information on costs, current and prior service levels, the history of service level decisions and what other prior studies, if any, had to say. We asked the Department to have each of the members responsible for a program or segment to complete a SWOT questionnaire, and 16 of these were received.¹

In subsequent site visits, Citygate team members followed up on this information by conducting focused interviews of fire management team members and other appropriate City staff. We reviewed demographic information about the City, proposed developments, and managed growth projections. As we collected and understood information about the City and Department, Citygate obtained electronic map and response data from which to model current and projected fire services deployment. The goal was to identify the location(s) of stations and crew quantities required to serve the City as it develops.

Once Citygate gained an understanding of the Department service area with its fire, rescue, and EMS risks, the Citygate team developed a model of fire services that was tested against the

¹ SWOT – acronym for Strengths, Weaknesses, Opportunities, Threats; a commonly used management tool for evaluating organizations, which allows insiders to report on their perspective of an organization.

mapping and prior response data to ensure an appropriate fit. This resulted in Citygate being able to propose an approach to improving fire services in the Department that would also meet reasonable expectations and fiscal abilities in the southern area of the City where future growth is likely to occur.

1.5 BEVERLY HILLS FIRE DEPARTMENT BACKGROUND INFORMATION



Because of Beverly Hills' special business culture, history and geographic setting, the City attracts thousands of tourists year round. The City contains 5.5 square miles including developed areas and open spaces. The January 2010 population, according to the California State Department of Finance E-1 report, was 36,224.

This figure, of course, does not account for the daily influx of employees and visitors, and at certain periods, high volume visitor events such as the Golden Globe Awards. The Net Assessed valuation of the City in 2009 was \$21,635,000,000. Approximately 90 percent of the City is zoned for residential use. In 2000, approximately 62 percent of the total dwelling units were apartments and condominiums, and 37 percent were single-family houses. City records indicate that approximately 82 percent of the multi-family units are apartments and 18 percent are condominiums.

In addition to protecting the above risks, Beverly Hills additionally contains:

- ◆ High value retail sales businesses
- ◆ World class hotels and entertainment venues
- ◆ Open space areas containing vegetation prone to wildfires
- ◆ Many larger than average residential properties, some containing high value and/or rare personal possessions
- ◆ 1,349 business properties that have been evaluated by the Insurance Service Office (ISO) for underwriting purposes.

1.6 REGULATION AFFECTING THE FIRE SERVICE

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

1. 1999 OSHA Staffing Policies – Federal OSHA applied the confined space safety regulations for work inside tanks and underground spaces to America’s firefighters. This requires in atmospheres that are “IDLH” (Immediately Dangerous to Life and Health)

that there be teams of two inside and two outside in constant communication, and with the outside pair equipped and ready to rescue the inside pair. This situation occurs in building fires where the fire and smoke conditions are serious enough to require the wearing of self-contained breathing apparatus (SCBA). This is commonly called the “2-in/2-out” policy. This policy requires that firefighters enter serious building fires in teams of two, while two more firefighters are outside and immediately ready to rescue them should trouble arise.

While under OSHA policy one of the outside “two-out” personnel can also be the incident commander (typically a chief officer) or fire apparatus operator, this person must be fully suited-up in protective clothing, have a breathing apparatus donned except for the face piece, meet all physical requirements to enter IDLH atmospheres and thus be ready to immediately help with the rescue of interior firefighters in trouble. However, given these stipulations and the operating complications they cause, the four-city automatic aid partnership to which Beverly Hills belongs does not recognize the incident commander as one of the “two out” personnel, since to send the incident commander inside to perform a firefighter rescue means the incident totally loses command and control, generating more safety problems.

2. May 2001 National Staffing Guidelines – The National Fire Protection Association (NFPA) Standard on Career Fire Service Deployment was issued seven years ago. While *advisory* to local governments, as it starts to become locally adopted and used, it develops momentum, forcing adoption by neighboring communities. NFPA 1710 calls for four-person fire crew staffing, arriving on one or two apparatus as a “company.” The initial attack crew should arrive at the emergency within four minutes travel time, 90 percent of the time, and the total effective response force (first alarm assignment) shall arrive within eight minutes travel time, 90 percent of the time. These guidelines will be explained and compared to Beverly Hills in the deployment measures section of this document.
3. The on-scene Incident Commanders (Battalion Chiefs) at Hazardous Materials Incidents must have certification compliant with NFPA 472, Standard for Emergency Response to Hazardous Materials Incidents. This is also now an OSHA requirement.
4. CAL OSHA Requirements – Among the elements required is a safety orientation for new employees, a hazard communications system for employees to communicate hazards to supervisors, the CAL-OSHA process for post injury reviews, the required annual report of injuries, and a standard for safety work plans. Employers have many different responsibilities under the Occupational Safety and Health Act of 1970 and the Code of Federal Regulations (CFR). Initially OSHA focused its efforts on the private sector; more recently, it has turned its attention to the public sector and specifically the fire service.

1.7 NEGATIVE PRESSURES ON VOLUNTEER-BASED FIRE SERVICES

While Beverly Hills does not operate a volunteer firefighter system, wholly or in part, a common question is why not solve some of a City's fire staffing problems with volunteers? To pre-address this question, here is a brief overview of the state of depending on volunteer firefighters:

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

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

This change, coupled with all the other factors, means that volunteer firefighter programs dry up due to lack of members. Additional training and additional responses mean a significant time commitment for "true" volunteers, who are serving for love of the community and to give something back. Most departments feel that it takes 100-120 hours of training per year to meet safety minimums, and this time is expended before a volunteer goes on a single incident.

As this report will explain in detail, Beverly Hills fire services are already spread thin for headquarters functions. Even if a small volunteer cadre could be found to assist with non-emergency work, volunteer programs take design, supervision, and some fiscal support. In Citygate's opinion, the needs of the Beverly Hills Fire Department far outweigh what a small volunteer or per diem apprentice firefighter program could solve. More importantly, just creating and operating such a program would drain the already thin headquarters staffing from managing critical day-to-day operations.

SECTION 2—STANDARDS OF RESPONSE COVER (STATION/STAFFING) ANALYSIS

Section Intent: This section serves as an in-depth analysis of the City’s current ability to deploy and meet the emergency risks presented in the City. The response analysis will use prior response statistics and geographic mapping to help the City Council and community visualize what the current response system can and cannot deliver.

2.1 GENERAL FIRE DEPLOYMENT BACKGROUND INFORMATION

The Center for Public Safety Excellence (formerly the Commission on Fire Accreditation International) recommends a systems approach known as “Standards of Response Coverage” to evaluate deployment as part of the self-assessment process of a fire agency. This approach uses risk and community expectations on outcomes to assist elected officials in making informed decisions on fire and EMS deployment levels. Citygate has adopted this methodology as a comprehensive tool to evaluate fire station location. Depending on the needs of the study, the depth of the components can vary.

Such a systems approach to deployment, rather than a one-size-fits-all prescriptive formula, allows for local determination of the level of deployment to meet the risks presented in each community. In this comprehensive approach, each agency can match local need (risks and expectations) with the costs of various levels of service. In an informed public policy debate, a City Council “purchases” the fire, rescue, and EMS service levels (insurance) the community needs and can afford.

While working with multiple components to conduct a deployment analysis is admittedly more work, it yields a much better result than any singular component can. If we only look to travel time, for instance, and do not look at the frequency of multiple and overlapping calls, the analysis could miss over-worked companies. If we do not use risk assessment for deployment, and merely base deployment on travel time, a community could under-deploy to incidents.

The Standard of Response Cover process consists of eight parts:

1. Existing Deployment – each agency has something in place today.
2. Community Outcome Expectations – what does the community expect out of the response agency?
3. Community Risk Assessment – what assets are at risk in the community?
4. Critical Task Time Study – how long does it take firefighters to complete tasks to achieve the expected outcomes?
5. Distribution Study – the locating of first-due resources (typically engines).

-
6. Concentration Study – first alarm assignment or the effective response force.
 7. Reliability and Historical Response Effectiveness Studies – using prior response statistics to determine what percent of compliance the existing system delivers.
 8. Overall Evaluation – proposed standard of cover statements by risk type.

Fire department deployment, simply stated, is about the *speed* and *weight* of the attack. Speed calls for first-due, all risk intervention units (engines and trucks) strategically located across a department. These units are tasked with controlling everyday, average emergencies without the incident escalating to second alarm or greater size, which then unnecessarily depletes the department resources as multiple requests for service occur. Weight is about multiple-unit response for significant emergencies like a room and contents structure fire, a multiple-patient incident, a vehicle accident with extrication required, or a heavy rescue incident. In these situations, departments must assemble enough firefighters in a reasonable period in order to control the emergency safely without it escalating to greater alarms.

Thus, small fires and medical emergencies require a single- or two-unit response (engine and ambulance) with a quick response time. Larger incidents require more companies. In either case, if the companies arrive too late or the total personnel sent to the emergency are too few for the emergency type, they are drawn into a losing and more dangerous battle. The art of fire company deployment is to spread companies out across a community for quick response to keep emergencies small with positive outcomes, without spreading the stations so far apart that they cannot quickly amass enough companies to be effective in major emergencies.

Given the need for companies to be stationed throughout a community for prompt response instead of all companies responding from a central fire station, communities such as Beverly Hills are faced with neighborhood equity of response issues. When one or more areas grow beyond the reasonable travel distance of the nearest fire station, the choices available to the elected officials are limited: add more neighborhood fire stations, or tell certain segments of the community that they have longer response times, even if the type of fire risk found is the same as other areas.

For the purposes of this fire services study, Citygate used all eight components of the Standards of Response Cover process (at varying levels of detail) to understand the risks in the City, how the City is staffed and deployed today, and then modeled those parameters using geographic mapping and response statistical analysis tools. The models were then compared to the proposed growth in the City so that the study can recommend changes, if any, in fire services to the City's service area.

Thus, Citygate tailored the deployment recommendations in this report to the City's unique needs, and did not use one-size-fits-all national recommendations.

The next few subsections in this section will cover the City area factors and make findings about each component of the deployment system. From these findings of fact about the City's fire deployment system, the study is then able to make deployment change recommendations.

2.2 BEVERLY HILLS COMMUNITY OUTCOME EXPECTATIONS – WHAT IS EXPECTED OF THE FIRE DEPARTMENT?

The next step in the Standards of Response Cover process is to review existing fire and emergency medical outcome expectations. This can be restated as follows: for what purpose does the current response system exist? Has the governing body adopted any response time performance measures? If so, the time measures used by the City need to be understood and good data collected.

The community, if asked, would probably expect that fires be confined to the room or nearby area of fire origin, and that medical patients have their injuries stabilized and be transported to the appropriate care location. Thus, the challenge faced by the City is to maintain an equitable level of fire service deployment across the entire City service area without adding significantly more resources as demand for services grows and traffic congestion increases, slowing response times.

The Insurance Services Office (ISO) Fire Department Grading Schedule would like to see first-due fire engines stations spaced 1.5 miles apart and ladder trucks spaced 2.5 miles apart, which, given travel speeds on surface streets, is a 3- to 4-minute travel time for first-due engines and a 7- to 8-minute travel time for first-due ladder trucks. The newer National Fire Protection Association (NFPA) guideline 1710 on fire services deployment suggests a 4-minute travel time for the initial fire apparatus response and 8 minutes travel time maximum for the follow-on units. This recommendation is for departments that are substantially staffed by career firefighters, as the City is.

The ISO grades community fire defenses on a 10-point scale, with Class 1 being the best. Historically, the City has been evaluated as a Class 1 department, meaning the fire engine and ladder truck coverage is the best possible to reduce the risk of serious fire spread – conflagrations in the community. For many reasons, it is not necessary for an agency to deploy only to meet the ISO measures. The ISO criteria are designed to evaluate the fire protection system for underwriting purposes a department's ability to stop a building fire *conflagration*. The ISO system does not address small fires, auto fires, outdoor fires and emergency medical incidents. In addition, underwriters today can issue fire premiums in Grading Schedule "bands" such as 3-5 and give safer buildings a single rating of Class 1 for example.

Thus, if an agency only tries to meet the ISO or NFPA station placement criteria, they do not necessarily deliver better outcomes, given the diversity of risk across American communities. Importantly, within the Standards of Response Coverage process, positive outcomes are the goal,

and from that company size and response time can be calculated to allow efficient fire station spacing. Emergency medical incidents have situations with the most severe time constraints. In a heart attack that stops the heart, a trauma that causes severe blood loss, or in a respiratory emergency, the brain begins to die in 4-6 minutes without oxygen.

Not only heart attacks, but also other emergencies can cause oxygen deprivation to the brain. Heart attacks make up a small percentage; drowning, choking, trauma, constrictions, or other similar events have the same effect on the brain and the same time constraints. In a building fire, a small incipient fire can grow to involve the entire room in a 4- to 5-minute time frame. The point in time where the entire room becomes involved in fire is called “flashover,” when everything is burning, life is no longer possible, and the fire will shortly spread beyond the room of origin.

If fire service response is to achieve positive outcomes in severe EMS situations and incipient fire situations, *all* the companies must arrive, size up the situation and deploy effective measures before brain damage or death occurs or the fire spreads beyond the room of origin.

Given that the emergency started before or as it was noticed and continues to escalate through the steps of calling 911, dispatch notification of the companies, their response, and equipment set-up once on scene, there are three “clocks” that fire and emergency medical companies must work against to achieve successful outcomes:

- ◆ The time it takes an incipient room fire to engulf a room fully is 4 to 5 minutes, thus substantially damaging the building and most probably injuring or killing occupants.
- ◆ When the heart stops in a heart attack, the brain starts to die from lack of oxygen in 4 to 6 minutes and brain damage becomes irreversible at about the 10-minute point.
- ◆ In a trauma patient, severe blood loss and organ damage becomes so great after the first hour that survival is difficult if not impossible. The goal of trauma medicine is to stabilize the patient in the field as soon as possible after the injury, and to transport them to a trauma center where appropriate medical intervention can be initiated within one hour of the injury.

Somewhat coincidentally, in all three situations above, the first responder emergency company must arrive on-scene within 5 to 7 minutes of the 911-phone call to have a chance at a successful resolution. Further, the follow-on (additional) companies for serious emergencies must arrive within the 8- to 11-minute point. These response times need to include the time steps for the dispatcher to process the caller’s information, alert the stations needed, and the companies to then don OSHA mandated safety clothing and drive safely to the emergency. The sum of these three time steps – dispatch, company turnout and drive time – comprises “total reflex,” or total response time. Thus, to get the first firefighters on-scene within only 5 to 7 minutes of the 911

call being answered is very challenging to all parts of the system, as this study will describe later in detail.

The three event timelines above start with the emergency happening. It is important to note the fire or medical emergency continues to deteriorate from the time of inception, not the time the fire engine actually starts to drive the response route. It is hoped that the emergency is noticed immediately and the 911 system is activated. This step of awareness – calling 911 and giving the dispatcher accurate information – takes, in the best of circumstances, 1 minute. Then company notification and travel take additional minutes.

Once arrived, the company must walk to the patient or emergency, size up the problem and deploy their skills and tools. Even in easy to access situations, this step can take 2 or more minutes. It is considerably longer up long driveways, apartment buildings with limited access, multi-storied office buildings or shopping center buildings such as those found in parts of the City.

2.2.1 Beverly Hills Existing Policy

The City’s General Plan Safety element does not contain a response time goal policy. In Section S2 on Fire Department Service it states, “An efficient, well-equipped, and responsive fire department that offers maximum feasible personal safety and protection from loss of life and property caused by wildfires and urban fires.”

While there is not a City adopted specific emergency response time goal, Beverly Hills has been very aggressive in setting building safety standards to lessen risks in the community. In multiple locations, the City’s General Plan, codes and ordinances require best practices building construction, automatic fire sprinklers in new and significantly remodeled structures and wildland vegetation management to control the spread of wildfires. It is understandable that, given the City operated a fire department rated Class 1 by the ISO for decades, there was not the need for a specific response time policy for firefighting. Response time measures for paramedic units fell under the Los Angeles County Emergency Medical Services policies.

Finding #1: The City does not have a complete and current best practices designed fire deployment measure adopted by the City Council that includes a beginning time measure starting from the point of dispatch receiving the 911 phone call, and a goal statement tied to risks and outcome expectations. The deployment measure should have a second measurement statement to define multiple-unit response coverage for serious emergencies. Making these deployment goal changes will meet the best practice recommendations of the Center for Public Safety Excellence (formerly the Commission on Fire Accreditation International).

Finding #2: The City has adopted best practices building and fire safety codes to lessen building and wildland fire risks, along with structural code requirements to improve earthquake safety. Considered as a total package, the City is one of, if not the most progressive communities for fire safety regulations that Citygate has observed.

For response time goals, current best practice nationally is to measure percent completion of a goal (i.e., 90 percent of responses) instead of an average measure, as many fire departments did in the past. Response goal measures should start with the time of fire dispatch receiving the 911 call to the arrival of the first unit at the emergency, and the measure should state what is delivered and what the expected outcome is desired to be.

Percent of completed goal measures are better than the measure of average, because average just identifies the central or middle point of response time performance for all calls for service in the data set. From an average statement, it is impossible to know how many incidents had response times that were considerably over the average or just over. For example, if a department had an average response time of 5 minutes for 5,000 calls for service, it cannot be determined how many calls past the average point of 5 minutes were answered slightly past the 5th minute, in the 6th minute or way beyond at 10 minutes. This is a significant issue if hundreds or thousands of calls are answered much beyond the average point.

When considering response time measures over the years, it was thought to take 1 minute for the communications center to process the call and alert the fire company and 1-minute to get the fire apparatus moving. However, as will be discussed later, even 1 minute for company turnout is unrealistic, given the need to don mandated protective safety clothing and to be seated and belted in before the apparatus begins to move. Some best practice recommendations for travel time in urban areas suggest a 4-minute driving time.

Thus, from the time of 911 *receiving the call*, an effective deployment system is ***beginning*** to manage the problem within 6-7 minutes total reflex time. This is right at the point that brain

death is becoming irreversible and the fire has grown to the point to leave the room of origin and become very serious. Yes, sometimes the emergency is too severe even before the Fire Department is called in for the responding company to reverse the outcome; however, given an appropriate response time policy and if the system is well designed, then only issues like bad weather, poor traffic conditions or a significant number of multiple emergencies will slow the response system. Consequently, a properly designed system will give the citizens hope of a positive outcome for their tax dollar expenditure.

2.3 BEVERLY HILLS FIRE RISK ASSESSMENT

Both newcomers to the community, as well as long-term residents, may not realize the community assets that are at risk today in such a vibrant and diverse community. The Beverly Hills Fire Department is charged with responding to a variety of emergencies, from fires to medical calls to special hazards and cargo transportation emergencies on the streets.

As already mentioned, the City mostly contains a mix of single- and multi-family dwellings, small and larger businesses, and entertainment and hospitality businesses. In addition, there are the streets, utility lines and open space areas to protect. As for people, the resident population count in no way reflects the tourists, daytime employment count, hotel guests and a “mobile” population in cars on the streets. At peak times of the day, it is not inconceivable that the population is six to seven times the resident count.

The significance of the above information is that the Beverly Hills Fire Department must be staffed, equipped and trained to deal with (at least through the first alarm level prior to automatic or mutual aid) most any type of emergency faced by a United States fire department. True, the City does not have an international airport, an oil refinery, or a port, but that is about all the Fire Department does not experience in its calls for service.

Then because it is Beverly Hills, the Fire Department has special events from Presidential visits to national and/or international media events that have to have life safety protection, special inspections and highly trained and equipped crews on stand-by.

In order to understand the importance of response time in achieving satisfactory outcomes, the deployment of resources must be based upon assessment of the values at risk. There are actually many different *types* of values at risk depending upon the nature of the emergency. At a very basic level, a fire in a structure is among the most frequent events with a measurable outcome. A *single* patient medical emergency is a different event, and while it is the most frequent, it is normally not as threatening to life and property as the structure fire since the structure fire can spread from building to building and eventually become a conflagration.

The fire incident reporting system indicates a wide variety of events that can result in a call for service, but it is a reported fire in a building that is the essence of a fire department’s deployment plan.

2.3.1 Building Fire Risk

In addition to the building and community demographics cited above, in a Standards of Response Coverage study, building fire risk can also be understood by looking at larger classes of buildings as well as the wildfire potential that surrounds the City.

The Insurance Service Office (ISO) sends underwriters into commercial buildings to evaluate and collect demographic data for fire insurance underwriting purposes. This study obtained the current ISO data set for Beverly Hills, and it contains approximately 1,000 businesses and institutions (such as churches) that range in size from a few hundred square feet up to 200,000 square feet under one roof.

One of the measures the ISO collects is called fire flow, or the amount of water that would need to be applied if the building were seriously involved in fire. The measure of fire flow is expressed in gallons per minute (gpm). In the City, the ISO has data on 1025 commercial buildings. Of these, 375 buildings have required fire flows of 2,000 gpm or higher. There are a total of 47 buildings with fire flows in excess of 4,000 gpm. Of these 47 larger buildings, there are 15 with required fire flows in excess of 6,000 gpm. Having 375 buildings with larger fire flows in a suburban city is somewhat unusual and typifies how Beverly Hills has become diverse in types of buildings and much more than just a residential suburb. It is becoming a full city with substantial commercial building properties.

Fire flows above 2,500 gpm are a significant amount of firefighting water to deploy, and a major fire at any one of these buildings would outstrip the on-duty City fire staffing. Using the generally accepted figure of fifty gallons per minute per firefighter on large building fires, a fire in a building requiring 2,500 gallons per minute would require 50 firefighters, or *twice* the on-duty staffing of twenty-five (25) firefighters in the City.

An effective response force is the deployment of multiple units (pumpers, ladder trucks and incident commander) so they can arrive close enough together to combat serious fires and keep them to less than greater alarm size. This refers back to the earlier points in this report on speed and weight of attack. The massing of units in a timely manner (weight) must be such that serious fires do not typically become larger. Since City zoning has placed these buildings throughout the City, this places additional pressure to have a multiple-unit effective response force of pumpers, and importantly, ladder trucks throughout the more built-up areas of the City.

2.3.2 Special Hazard Risks

The City has dozens of businesses that use or resell hazardous materials. Examples are gasoline stations and dry cleaners. According to the County of Los Angeles Fire Department Health Hazardous Materials Division, there are 68 facilities in Beverly Hills that are regulated under theirs and the City's Fire Code hazardous materials programs. These businesses are highly regulated by the building, fire and environmental codes. These are businesses that use larger

quantities of hazardous materials and consequently receive a higher level of inspection activities. Moreover, the responding firefighters have plans for their business and technical inventories. The City participates in a countywide shared, regional fire department Hazardous Materials Response Team for serious incidents. Locally, Beverly Hills firefighters are trained to the level of “first responder” for hazardous materials emergencies.

Then there are special hazards, such as larger apartment/condo buildings, hotels and large entertainment venues. These sites have “pre-plans” prepared for them so that the fire crews immediately have a pre-built tactical plan matching each site’s unique set of risks. In Beverly Hills, there are 155 of these sites. Again, this is a large quantity for an otherwise “suburban” feeling community.

Then there are special risks unique to only a Beverly Hills international type of community – special civic, film and entertainment industry and political events. Most all of these require a combination of stand-by fire prevention, or firefighter and paramedic personnel. The Fire Department, in the most recent 12-months, handled a low to high range of 15-33 such events per month, averaging 222 hours per month or 1.7 full-time equivalent 40-hour positions. These “at event” hours do not include planning and permitting meetings for the Fire Marshal and Deputy Chief of Operations. These events must be protected in addition to everyday medical and fire emergencies.

2.3.3 Wildland Fire Risk

The wildfire threat in Beverly Hills is significant, as many of the City’s edge neighborhoods are exposed to wildland fuels and upslope terrain, all of which combine to pose a real danger. To combat this risk, the City works closely with its mutual aid partner fire departments while training and equipping its firefighters for wildland firefighting in the local conditions. In 2009, the City also adopted a new prevention strategy to inspect and require best practices fuel reduction measures for parcels with or next to significant wildfire hazards.

2.3.4 Desired Outcomes

A response system can be designed with staffing and station locations to accomplish desired outcomes. An outcome example is, “confine a residential fire to the room of origin.” That outcome requires a more aggressive response time and staffing plan than “confine the fire to the building of origin, to keep it from spreading to adjoining structures.” As such, fire deployment planning takes direction from policy makers as to the outcomes desired by the community.

Given the City’s lack of a response time goal but its Class 1 fire insurance classification rating, the City has, in effect, adopted a structure fire goal of deploying a significant force to building fires to contain the fire to or very near the room, or compartment, of origin, if the fire is small to

modest when first reported. By delivering paramedics via the rescue ambulances, the City has committed to a higher level of emergency medical care.

2.4 STAFFING – WHAT MUST BE DONE OVER WHAT TIMEFRAME TO ACHIEVE THE STATED OUTCOME EXPECTATION?

The next step in the Standards of Response Cover process is to take the risk information above and review what the firefighting staffing is, and what it is capable of, over what timeframe.

Fires and complex medical emergencies require a timely, coordinated effort in order to stop the escalation of the emergency. Once the tasks and the time required to accomplish them in order to deliver a desired outcome are set, travel time, and thus station spacing, can be calculated to deliver the requisite number of firefighters over an appropriate timeframe.

2.4.1 Offensive vs. Defensive Strategies in Structure Fires Based on Risk Presented

Most fire departments use a strategy that places emphasis upon the distinction between offensive or defensive methods. These strategies can be summarized:

It is important to have an understanding of the duties and tasks required at a structural fire to meet the strategic goals and tactical objectives of the Fire Department response. Firefighting operations fall in one of two strategies – **offensive or defensive**.

Offensive strategy is characterized primarily by firefighters working **inside** the structure on fire. This strategy is riskier to firefighters but much more effective for performing rescues and attacking the fire at its seat.

Defensive strategy is characterized by firefighters working **outside** the structure on fire. This strategy is generally safer for firefighters; however, it also means no rescues can be performed and the building on fire is a total loss.

We will take great risk to protect savable lives.

We will take calculated risks to protect savable property.

We will not risk lives to save what is already lost.

Considering the level of risk, the Incident Commander will choose the proper strategy to be used at the fire scene. The Incident Commander must take into consideration the available resources (including firefighters) when determining the appropriate strategy to address any incident. The strategy can also change with conditions or because certain benchmarks are achieved or not achieved. For

example, an important benchmark is “all clear,” which means that all persons who can be saved have been removed from danger or placed in a safe refuge area.

Once it has been determined that the structure is safe to enter, an **offensive** fire attack is centered on life safety of the occupants. When it is safe to do so, departments will initiate offensive operations at the scene of a structure fire. Initial attack efforts will be directed at supporting a primary search – the first attack line will go between the victims and the fire to protect avenues of rescue and escape.

The decision to operate in a **defensive** strategy indicates that the offensive attack strategy, or the potential for one, has been abandoned for reasons of personnel safety, and the involved structure has been conceded as lost (the Incident Commander makes a conscious decision to write the structure off). The announcement of a change to a defensive strategy means all personnel will withdraw from the structure and maintain a safe distance from the building. Officers will account for their crews. Interior lines will be withdrawn and repositioned. Exposed properties will be identified and protected.

For safety, Federal and State Occupational Health and Safety Regulations (OSHA) mandate that firefighters cannot enter a burning structure past the incipient or small fire stage without doing so in teams of 2, one team inside and one team outside, ready to rescue them. This totals a minimum of 4 firefighters on the fireground to initiate an interior attack. The only exception is when there is a known life inside to be rescued. This reason, along with the fact that a four-person company can perform more tasks simultaneously than a three-person company, is why NFPA Deployment Standard 1710 for career fire departments recommends four-person company staffing on engines (pumpers) as well as on ladder trucks.

Many fire department deployment studies using the Standards of Response Coverage process, as well as NFPA guidelines, arrive at the same fact – that an average (typically defined by the NFPA as a modest single-family dwelling) risk structure fire needs a minimum of 15 firefighters, *plus* one on-scene incident commander. The NFPA 1710 recommendation is that the first unit should arrive on-scene within 6 minutes of call receipt (1-minute dispatch, 1-minute company turnout, and 4-minute travel), 90 percent of the time. The balance of the units should arrive within 10 minutes of call receipt (8-minute travel), 90 percent of the time, if they hope to keep the fire from substantially destroying the building. (The NFPA recommendation of 1-minute dispatch time is generally attainable; the 1-minute company turnout time is generally unattainable considering the time it takes firefighters to don the required full personal protective equipment.)

For an extreme example, to confine a fire to one room in a multi-story building requires many more firefighters than in a single-story family home in a suburban zone. The amount of staffing needed at such an incident can be derived from the desired outcome and risk class. If the

community desires to confine a one-room fire in a residence to the room or area of origin, that effort will require a minimum of 15 personnel plus incident commander. This number of firefighters is the minimum needed to safely conduct the *simultaneous* operational tasks of rescue, fire attack, and ventilation plus providing for firefighter accountability and incident command *in a modest, one fire hose line house fire*. A significant fire in a two-story residential building or a one-story commercial or multi-story building would require, at a minimum, an additional two to three engines and an additional truck and chief officer, for upwards of 12 plus additional personnel.

Beverly Hills also does not contain only “average” single-family homes. It contains a substantial quantity of large to ultra large homes in excess of 5,000 square feet. In terms of firefighting, these are no different than small commercial buildings. Containing fires in them will require more personnel to advance the hose lines and conduct a search for victims over a much larger area.

As the required fire flow water gallonage increases, concurrently the required number of firefighters increases. Simultaneously, the travel distance for additional personnel increases creating an exponential impact on the fire problem. A typical auto accident requiring multiple-patient extrication or other specialty rescue incidents will require a minimum of 10 firefighters plus the incident commander for accountability and control.

2.4.2 Daily Unit Staffing in the City

Below is the typical minimum daily unit staffing assignment in the City currently:

Units and Daily Staffing Plan

<u>Minimum Per Unit</u>	<u>Extended</u>
3 Engines @ 4 Firefighters/day	12
1 Ladder Truck @ 5 Firefighters/day	5
Engine/Ambulance/Heavy Rescue units 2 Captain/Engineer	2
2 Paramedic Rescue Ambulances @ 2 Firefighter/paramedics	4
1 Battalion Chief w/aid 2 Per day for command	2
<i>Total 24/hr Personnel:</i>	
<u>25</u>	

In addition to the City daily staffing listed above, Beverly Hills and the surrounding fire departments operate under an automatic aid and boundary drop “closest unit” agreements. This policy means that many Beverly Hills building fires receive a mix of City and automatic aid

partner agencies, which are Los Angeles City and County Fire Departments. For modest fires in either end of the City, this system not only helps by providing the units in the least time without regard to jurisdiction, but also leaves other City units available for back-to-back or simultaneous calls for service.

2.4.3 Staffing Discussion

If the City provides fire services at all, safety of the public and firefighters must be the first consideration. Additionally, the chief officers, as on-scene incident commanders, must be well trained and competent, since they are liable for mistakes that violate the law. An under-staffed, poorly led, token force will not only be unable to stop a fire, it also opens the City up for real liability should the Fire Department fail.

As stated earlier in this section, national norms indicate that 15 or so firefighters, including an incident commander, are needed at significant building fires if the expected outcome is to contain the fire to the room of origin and to be able to simultaneously and safely perform all the critical tasks needed. The reason for this is that the clock is still running on the problem after arrival, and too few firefighters on-scene will mean the fire can still grow faster than the efforts to contain it. Chief officers also need to arrive at the scene in a timely manner in order to intervene and provide the necessary incident command leadership and critical decision making to the organization.

The current Department response plan for a building fire is initially to send 3 engines, 1 ladder truck, 1 Paramedic Rescue Ambulance and the Battalion Chief/Safety Officer to a serious building fire. Thus, the City sends 19 firefighters or 76 percent of its on-duty force. This leaves one engine and one 2-person Paramedic Rescue Ambulance in reserve for other emergencies. To augment the initial building fire staffing above 19, the Department has to send its remaining units or use additional units via automatic aid. The closest mutual aid unit is Los Angeles County Engine #7 with 4 firefighters. Given the occurrence of building fires in the City at approximately 12 per year, or about one per month, the City can typically field enough firefighters at a modest building fire. Remaining Beverly Hills units and/or automatic aid units would cover any such simultaneous calls. While sending 19 firefighters to a building fire is more than a normal suburban department might at 12-15 firefighters, with so many high value commercial properties and homes, a more urban level of response is appropriate in Beverly Hills.

2.4.4 Company Critical Task Time Measures

In order to understand the time it takes to complete all the needed tasks on a moderate residential fire and a modest emergency medical rescue, the Department staff provided information using their standard operating procedures *on an actual house fire* to demonstrate how much time the entire operations take. The following tables start with the time of fire dispatch notification and finish with the outcome achieved. There are several important themes contained in these tables:

-
- ◆ These results were obtained under actual conditions. The structure fire pre-arrival response times are from actual events, showing how units arrive at staggered intervals.
 - ◆ It is noticeable how much time it takes after arrival or after the event is ordered by command to actually accomplish key tasks to arrive at the actual outcome. This is because it requires firefighters to carry out the ordered tasks. The fewer the firefighters, the longer some task completion times will be. Critical steps are highlighted in grey in the table.
 - ◆ The time for task completion is usually a function of how many personnel are *simultaneously* available so that firefighters can complete some tasks simultaneously.
 - ◆ Some tasks have to be assigned to a minimum of two firefighters to comply with safety regulations. An example is that two firefighters would be required for searching a smoke filled room for a victim.

The following tables of unit and individual duties *occurred* at a first alarm fire scene at a typical (for Beverly Hills) single-family dwelling fire (8,000 square feet), two-story, single-family residential building. Three rooms, of approximately 2,000 square feet on the first floor are involved with fire. Smoke and fire visible are visible on the rear side of structure, with one exposed building nearby.

This set of duties is taken from Department operational procedures. This set of needed duties is entirely consistent with the usual and customary findings of other agencies using the Standards of Response Cover process and that found in NFPA 1710 or in CAL-OSHA regulations on firefighter safety. No conditions existed to override the OSHA 2-in/2-out safety policy.

The response force is five engines, two ladder trucks, one paramedic rescue ambulance and one Battalion Chief/safety aid responding for a total of 33 personnel, some of which arrived from LA County Fire via mutual aid.

Critical Tasks – Structure Fires

Structure Fire Incident Tasks	Time From Arrival 1 st Engine	Total Reflex Time
Pre-arrival time of dispatch, turnout and travel for the 1 st due unit to the structure fire call		03:07
Battalion 1 on scene, report on conditions, assume command	00:09	
E1 on scene, assigned interior fire attack	00:18	
E5, R1 on scene, assigned water supply	00:29	
E2 on scene, assigned back side exposure protection	01:22	
Charged hose line at front entrance, 2 firefighter (FF)	02:37	5:44
B. Hills Truck 4 on scene, assigned ventilation	03:04	
E3 on scene, assigned rapid intervention crew	03:32	
Water supply from E5 to E1	03:58	
LA County Truck 8 on scene, assigned search & evacuation	04:14	
LA County Engine 8 on-scene – assigned back-up fire attack	04:14	
E1 advance line to seat of fire	07:46	10:53
Paramedic Rescue Ambulance 2 on scene – assigned medical group	08:17	
LA County Ladder Truck 8, “All Clear” on search, no victims	10:03	13:10
Fire knockdown declared	17:20	20:27
Salvage and overhaul commences	17:53	
Fire out / Incident under control	21:55	25:02

The above duties grouped together to form an *effective response force or first alarm assignment*. Remember that the above discrete tasks must be performed simultaneously and effectively to achieve the desired outcome. Just arriving on-scene does not stop the escalation of the emergency. Firefighters accomplishing the above tasks do, but as they are being performed, the clock is still running, as it has been since the emergency first started.

Fire spread in a structure can double in size during its free burn period. Many studies have shown that a small fire can spread to engulf the entire room in less than 4 to 5 minutes after open burning has started. Once the room is completely superheated and involved in fire (known as flashover), the fire will spread quickly throughout the structure and into the attic and walls. For this reason, it is imperative that fire attack and search commence before the flashover point occurs, if the outcome goal is to keep the fire damage in or near the room of origin. In addition, flashover presents a serious danger to both firefighters and any occupants of the building.

For comparison purposes, the critical task table below reviews the tasks needed on a typical auto accident rescue. The situation modeled was a two-car collision with two patients. One driver required moderate extrication with power tools and the vehicles were upright with no fuel hazards. One engine, one paramedic rescue ambulance, one ladder truck and one Battalion Chief/Safety Aid responded for a total of thirteen (13) personnel.

Critical Tasks – Auto Incident – 2 Vehicle, 2 Patients

Vehicle Extrication Critical Tasks	Time From Arrival 1st Engine	Total Reflex Time
Pre-arrival time of dispatch, turnout and travel for the 1 st due unit		06:20
Engine #3, Paramedic Rescue Amb R2 on-scene, report on conditions	00:00	
BC on scene, assume command	00:39	
Patient contact, R2 medic, E3 FF	00:47	7:07
Neck Stabilization – Cervical collar applied	01:23	
Truck 4 on-scene, assigned extrication	01:30	
Protective hose line in place (Eng. 3)	01:47	
The following completed by T4 crew:		
Vehicle stabilized	03:09	9:29
Extrication tool lines connected, power unit running	03:15	
2 personnel ready to force driver door	03:22	
Door removal	06:07	
Patient removed, in Full C-Spine	09:27	15:47
Less injured patient treated & placed in R2	09:45	
Both patients en route to the hospital	13:45	20:05

The table above shows excellent task times for good patient care outcomes. These patient care times and steps are consistent with Los Angeles County patient care protocols and would provide positive outcomes where medically possible.

2.4.5 Critical Task Measures Evaluation

What does a deployment study derive from a response time and company task time analysis? The total completion times above to stop the escalation of the emergency have to be compared to outcomes. We know from nationally published fire service “time vs. temperature” tables that

after about 4 to 5 minutes of free burning a room fire will grow to the point of flashover where the entire room is engulfed, the structure becomes threatened and human survival near or in the fire room becomes impossible. We know that brain death begins to occur within 4 to 6 minutes of the heart having stopped. Thus, the effective response force must arrive in time to stop these catastrophic events from occurring.

The response and task completion times discussed above show that the residents of Beverly Hills are able to expect positive outcomes and have a better chance than not of survival in a *moderately severe* fire or medical emergency, when the first responding units are available in 7 minutes or less total response time.

The point of the tables above is that mitigating an emergency event is a team effort once the units have arrived. This refers back to the “weight” of response analogy. If too few personnel arrive too slowly, then the emergency will get worse, not better. Control of the structure fire incident still took 17:20 minutes/sec after the time of the first unit’s arrival, or 25:02 minutes/sec from fire dispatch notification, with 33 total personnel, eight (8) *more than* the City’s on-duty staffing, due to a mutual aid response. The outcome times, of course, will be longer, with less desirable results, if the arriving force is later or smaller.

The quantity of staffing and the time frame it arrives in can be critical in a serious fire. As the risk assessment portion of this study identified, the City’s building stock is diverse and includes large homes and multi-story buildings, any of which can slow the firefighting times as personnel and tools have to be walked to upper floors. Fires in these buildings could well require the initial firefighters needing to rescue trapped, or immobile (the very young or elderly) occupants. If a lightly staffed force arrives, they cannot simultaneously conduct rescue and firefighting operations.

In EMS trauma incidents, the patient is initially being assessed within 7:07 minutes total reflex time and is able to be transported within 20:05 minutes. These times are good for trauma patients, when the 1st due unit can arrive by minute 7, which is not always possible at the outer perimeter areas of the City, or when multiple calls for service occur.

The auto accident, while only being moderate in size, required 13 personnel. If a building fire occurred at the same time as one or two medical incidents, then over than 100 percent of the entire on-duty force would be committed to two incidents and immediate mutual aid is required from LA City or County. Response needs greater than this always will require automatic/mutual aid assistance from adjoining departments.

Fires and complex medical incidents require that the other needed units arrive in time to complete an effective intervention. Time is one factor that comes from *proper station placement*. Good performance also comes from *adequate staffing*. On the fire and rescue time measures above, the City does do a good job, in terms of time, on one moderate building fire and one or two routine medical calls at once. This is typical of departments that staff fewer

companies for average, routine emergencies. However, major fires and medical emergencies where the closest unit is not available to respond will challenge the City response system to deliver good outcomes, so the City is co-dependent for severe emergency coverage with its neighbors. This factor **must** be taken into account when we look at fire station locations. Operating as a “single” regional system is a great, cost-effective idea, as long as all of the partners maintain their levels of service.

Previous critical task studies conducted by Citygate, the Standard of Response Cover documents reviewed from accredited fire departments, and NFPA recommendations all arrive at the need for 15+ firefighters plus a Command Chief arriving within 11 minutes (from the time of call) at a room and contents structure fire to be able to *simultaneously and effectively* perform the tasks of rescue, fire attack and ventilation.

At its existing staffing of 4-firefighters per engine and 5-firefighters on the ladder truck, Beverly Hills could deliver a force of 15 firefighters from 2-Engines, 1-Ladder and 1-Battalion Chief team of units. This leaves a force of 10 personnel still available for a 2nd or 3rd simultaneous call. Or, the City can send an incident force of 25 firefighters for an immediate, in City response to a serious emergency. That weight of attack without dependence on mutual aid is similar to what urban metropolitan departments send to higher risk properties, which Beverly Hills also contains. If for the sake of discussion, the staffing per unit were reduced to 3 personnel, as smaller suburban cities without Beverly Hills’ risks do, then to deliver 15 firefighters minimum to a serious, emerging incident would require all of the City’s units, except for one BLS rescue ambulance.

If fewer firefighters arrive, what from the list of tasks mentioned would not be done? Most likely, the search team will be delayed, as will ventilation. The attack lines only have two firefighters, which does not allow for rapid movement above the first floor deployment. Rescue is done with only two-person teams; thus, when rescue is essential, other tasks are not done in a simultaneous, timely manner. Remember what this report stated in the beginning: effective deployment is about the **speed** (*travel time*) and the **weight** (*firefighters*) of the attack.

Yes, 15 or so initial firefighters (3 engines, 1 ladder truck and 1 Battalion Chief/Safety Aid *could* handle a moderately severe risk house fire — on the first floor. An effective response force of only 15 will be seriously slowed if the fire is above the first floor in a low-rise apartment building or in a very large home or commercial / industrial building.

When the on-duty staffing is stretched thin, the City can bring in automatic or mutual aid equipment, but from a distance and under the assumption that the aiding department is not already busy.

Finding #3: The City’s current daily firefighter and command chief unit staffing at 25 provides the City the “weight” of response to handle one serious event or two modest events without being immediately dependent on mutual aid. This level of response capacity is very appropriate to the potential and unique risks found in Beverly Hills, which from only a measure of population or type of actual emergencies is not comparable to a similarly sized suburban city in terms of risks to protect.

2.5 CURRENT STATION LOCATION CONFIGURATIONS

The City is served today by three fire stations. As part of this fire services study, it is appropriate to understand what the existing stations do and do not cover, if there are any coverage gaps needing one or more stations, and what, if anything, to do about them as the City continues to evolve. In brief, there are two geographic perspectives to fire station deployment:

- ◆ Distribution – the spreading out or spacing of first-due fire units to stop routine emergencies.
- ◆ Concentration – the clustering of fire stations close enough together so that building fires can receive enough resources from multiple fire stations quickly enough. This is known as the Effective Response Force or commonly the “first alarm assignment” – the collection of a sufficient number of firefighters on-scene, delivered within the concentration time goal to stop the escalation of the problem.

To analyze first-due and first alarm fire unit travel time coverage for this study, Citygate used a response statistics mapping tool called *NFIRS 5 Alive* that can model prior response time performance over a map of the City in Google Earth. Citygate ran several deployment map studies and measured their impact on various parts of the community. The actual response time and type of incident measures will be in the following Section 2.7.

The mapping model is very complex and allows the user to see in 3D where and how much workload occurs through the City. The model can be tilted and rotated to better see both the location of the workload, and by using bar height, the volume of incidents in an area. The images used below are just a summary view. The complete model was delivered to the Fire Department staff for on-going, interactive use as part of this study’s deliverables.

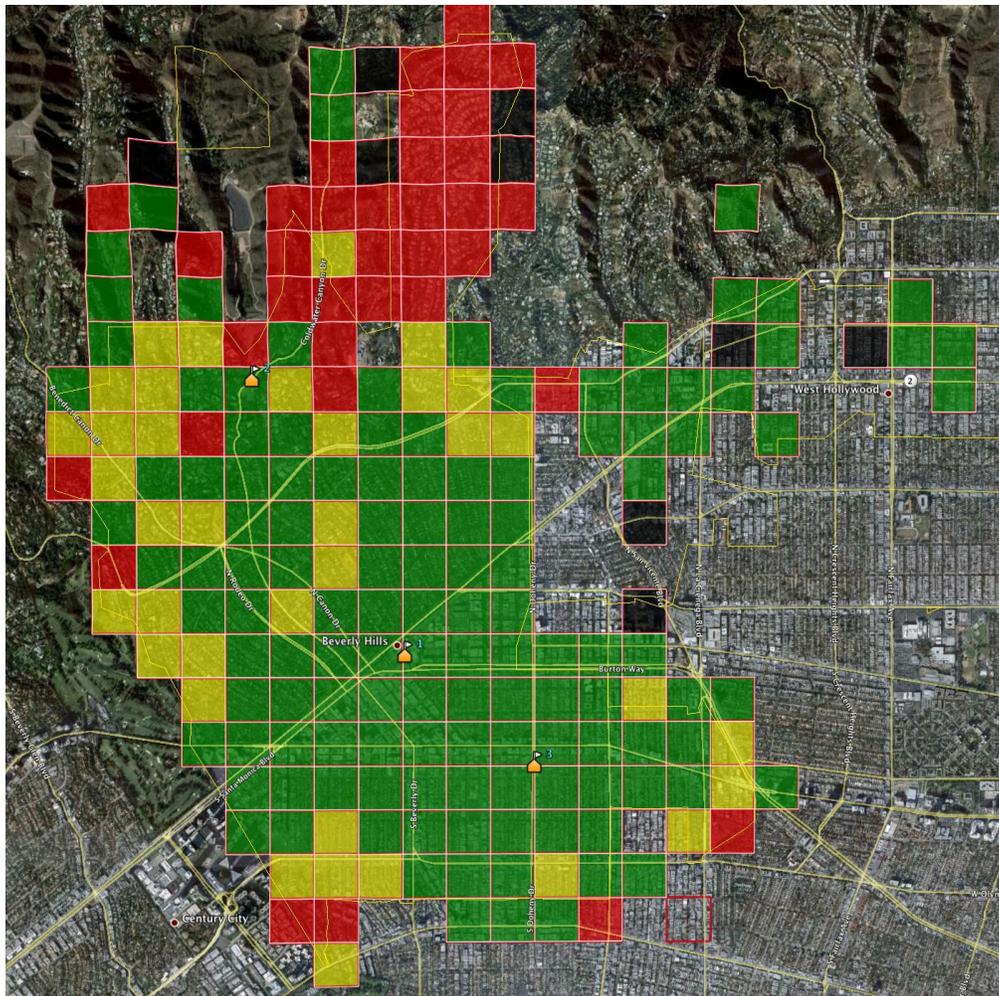
The mapping analysis can display travel time using prior City incident data. Since the City does not currently have a City Council-adopted travel time measure, the initial map measures in this study are 4 minutes travel time for first-due units for good suburban outcomes as suggested by NFPA 1710. For a first alarm, multiple-unit coverage, the “concentration” of units measure in this mapping study is based on an 8-minute travel time as suggested in NFPA 1710. When one

minute is added for dispatch reflex time and two minutes for company notification times, the maps then effectively show the area covered within 7 minutes for first-due units and 11 minutes for a first alarm assignment from the time the 911 call is made.

The map images below show only Beverly Hills units, not mutual aid units, so the distribution of City stations can be measured. The first goal is to determine if the City can substantially cover itself with its fire stations in appropriate response times. If so, then the automatic aid coverage is useful to fill in edge area gaps and be able to provide back-up unit response when City units are on other incidents.

Map #1 – Total Response Time Performance

This map shows in grids, where the 1st unit arrived at the scene of an emergency in less than 7 minutes total response time (From 911), 90 percent of the time. The travel time in this image is 4 minutes, consistent with NFPA and ISO goals. Green indicates 90 percent or better compliance with a 7-minute goal, yellow is 80-89 percent, red is 79 percent or less and black is a dispatch that was cancelled in route:

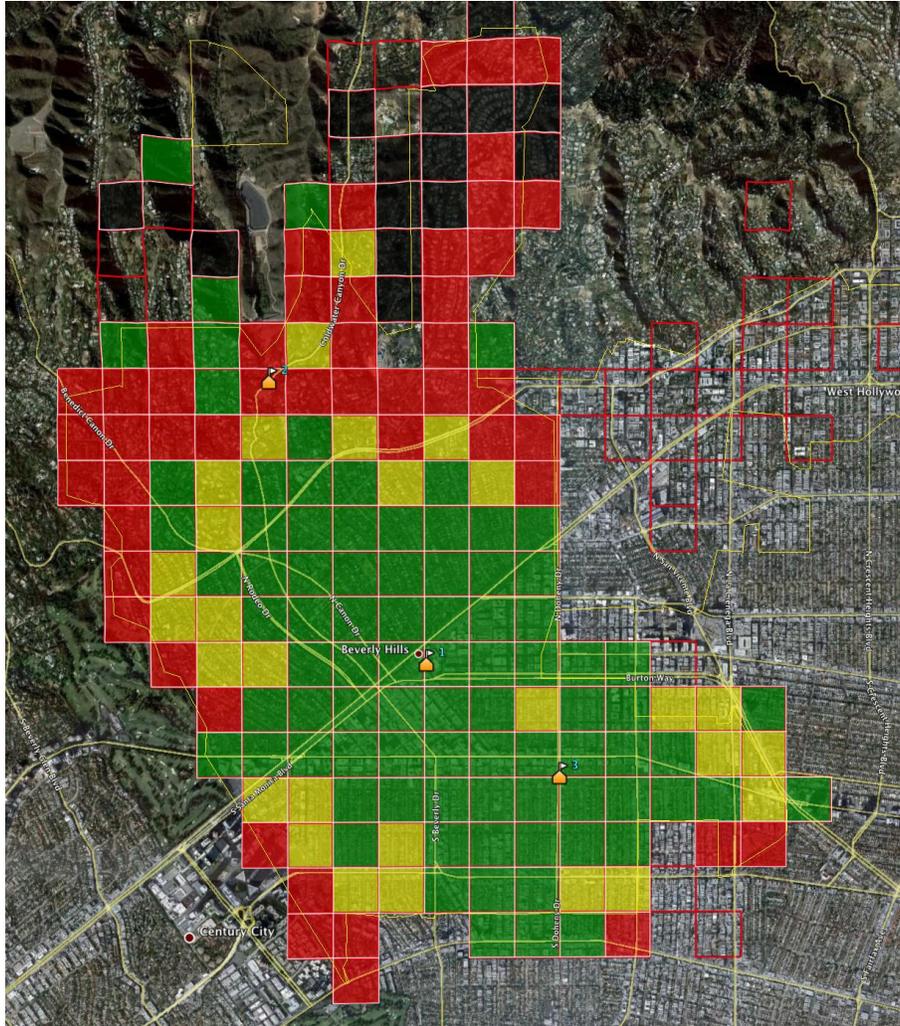


A goal for a city as developed as Beverly Hills could be to cover 90 percent of the geography containing the highest population densities with a first-due unit coverage plan based on a goal measure statement to deliver acceptable outcomes. This would leave only the very hard-to-serve outer edge areas with longer coverage times, and depending on the emergency, with less effective outcomes. There should be some overlap between station areas so that a second-due unit can have a chance of an adequate response time when it covers a call for another station. The outer perimeter areas are hard to serve, and in many cases, cost-prohibitive to serve for a small number of calls for service.

As can be seen in the above map measure, the shape of the City is very hard to serve, even with a grid type road network in the core, non-hilly areas. The existing three stations are all appropriately located in higher development density areas. However, due to very challenging topography and the resultant non-grid street network in the hills areas, Station #2 has only partial coverage at 4 minutes of travel. The message to be taken from this map is that it would be very challenging for the City to improve travel time coverage without adding fire stations. To cover the entire hills area within 4 minutes travel, given the road network, would require two stations, each on the two primary uphill routes. Given the low call volumes in this area, such coverage would not be cost effective.

Map #2 Travel Time Compliance for Engines Only

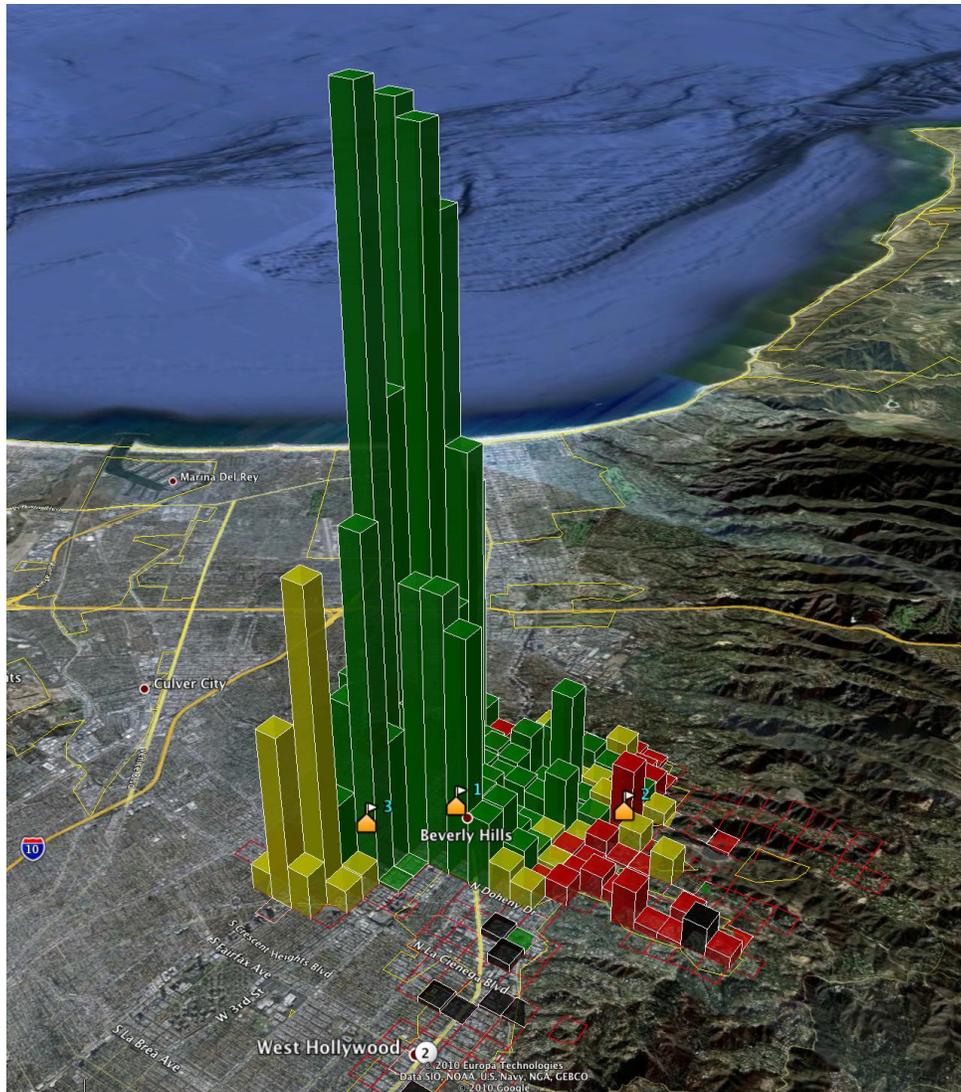
The following image again shows response time compliance, but this time only for travel time and only for engines. The first map showed when any unit arrived first, be it engine, ambulance, ladder truck or chief officer. This image reflects at 4-minute travel how the fire engines handle the road network challenges and traffic flows:



Green indicates 90 percent or better compliance with a 7-minute goal, yellow is 80-89 percent, red is 79 percent or less and black is a dispatch that was cancelled in route. The measurements in this image are similar to the first image and demonstrate that in the edge and hillside areas, the topography works against a best practices 4-minute travel coverage to 90 percent of the City.

Map #3 Volume of Incident Locations

Given the challenging hillside areas to cover, the question is how many incidents are located in these areas? The following image is again the travel time compliance percentage for 4 minutes travel time (90 percent is green). However the model is rotated to show by height of square mile grid, the volume of incidents per year in an area. As can be seen, the more populated and busy core areas of the City account for the vast majority of the calls for service. In these areas, all three maps show that the stations are well located and that 90 percent of the calls for service receive 4-minute travel time compliance coverage.



2.6 MAPPING MEASURES EVALUATION

Based on the above mapping evaluation, Citygate offers the following findings:

- Finding #4:** The City is substantially developed enough in terms of population density and building development to desire an urban level of first-due fire unit coverage, which is 4 minutes of travel time for the best possible outcomes.
- Finding #5:** The City is very difficult to cover efficiently with a cost-effective number of fire stations due to the non-grid street network and very difficult hillside topography in some areas.

Finding #6: Given the difficult to serve terrain and the coverage at the 4th minute of travel in the high call volume areas, the current locations and quantity of three fire stations is the most cost effective model.

Finding #7: To increase coverage at the 4th minute of travel in the hills would require a 4th fire station. Given the modest number of calls for service in these lighter population and call for service density residential neighborhoods, Citygate does not find that adding another station would be cost effective. Even if another station were added at the base of the hills, the upper areas would never receive 4-minute travel coverage 90 percent of the time from either Station #2 or a new station.

After the historical response statistics are analyzed in the next section of this report, then an integrated set of deployment recommendations will be made.

2.7 CURRENT WORKLOAD STATISTICS SUMMARY

In this section of the Standards of Response Cover process, prior response statistics are used to determine what percent of compliance the existing system delivers. A detailed analysis of in-depth statistics is provided in Volume 2 of this report. What follows is a summary of those comprehensive measures and findings.

In the real world, traffic, weather, and units being out of quarters on other business, such as training or fire prevention duties, affect response times. Further, if a station area has simultaneous calls for service, referred to as “call-stacking,” the cover engine must travel much farther. Thus, a complete Standards of Response Coverage study looks at the actual response time performance of the system from incident records. As a review of actual performance occurs, there are two perspectives to keep in mind. First, the recommendations of NFPA 1710 only require that a *department-wide* performance measure of 90 percent of the historical incidents (not geography) be maintained. This allows the possibility that a few stations with great response time performance can “mask” the performance of stations with poorer travel times.

In the Accreditation philosophy for the Standards of Response Coverage approach, it is recommended that the performance of each *station area* also be determined to ensure **equity** of coverage. However, even this approach is not perfect – a station area may well have less than 90 percent performance, but it may also serve lower-risk open space areas with limited buildings thereby not having an economic justification for better performance. In addition, the study must discuss just what is measured within the under-performing statistic. For example, a station area

with a first-due performance of 88 percent with only 50 calls in the 88th to 90th percentile is far different from an area with 500 calls for service in that 88th to 90th percentile.

All measures, then, must be understood in the complete context of geography, risk, and actual numbers of calls for service that exceed the community's performance measure. The Department's response time performance must be compared to outcomes such as fire loss or medical cases and be contrasted to the community's outcome expectations. A community could be well deployed and have poor outcomes, or the reverse. A balanced system will avoid such extremes and strive for equity of service within each category of risk.

Fire departments are required to report response statistics in a format published by the U.S. Fire Administration called the National Fire Incident Reporting System (NFIRS). The private sector develops software to do this reporting according to state and federal specifications.

Data sets for this section of the study were extracted from the Beverly Hills Communications Center that provides dispatching and NFIRS records from the Beverly Hills Fire Department.

Total response time in this study is measured from the time of receiving the call at the Police Communications Center to the unit being on-scene. For suburban and urban population density areas, NFPA 1710 recommends a 4-minute fire unit travel time, which when a more realistic 2 minutes is added for turnout time and 1 minute for dispatch processing, aggregates to a 7-minute total reflex (customer) measure. For multiple-unit calls, the outer NFPA 1710 recommended measurement is 8 travel minutes, plus two for turnout and 1 minute for dispatch, which is an 11-minute total reflex measure. These measures are also consistent with good outcomes for urban/suburban risks as identified in the Standards of Response Cover Process.

Data sets were "cleaned" to eliminate records without enough time stamps or records with impossible times, such as a 23-hour response. The data sets were modeled in the NFIRS 5 Alive fire service analysis tool for fire service deployment statistics.

For this statistics review, we are modeling the Department's prior performance and comparing the data results to the "ideal" per NFPA 1710 for fire service deployment, since the City has not adopted specific measures. Later, this study will integrate all the SOC study elements to propose refined deployment measures that best meet the risk and expectations found in the City.

This study received and processed a dataset that covers 1/1/2007 – 12/31/2009. In this 3-year time period there were 17,961 incidents and 35,075 apparatus operation records.

2.7.1 Incident Types and Demand Trends

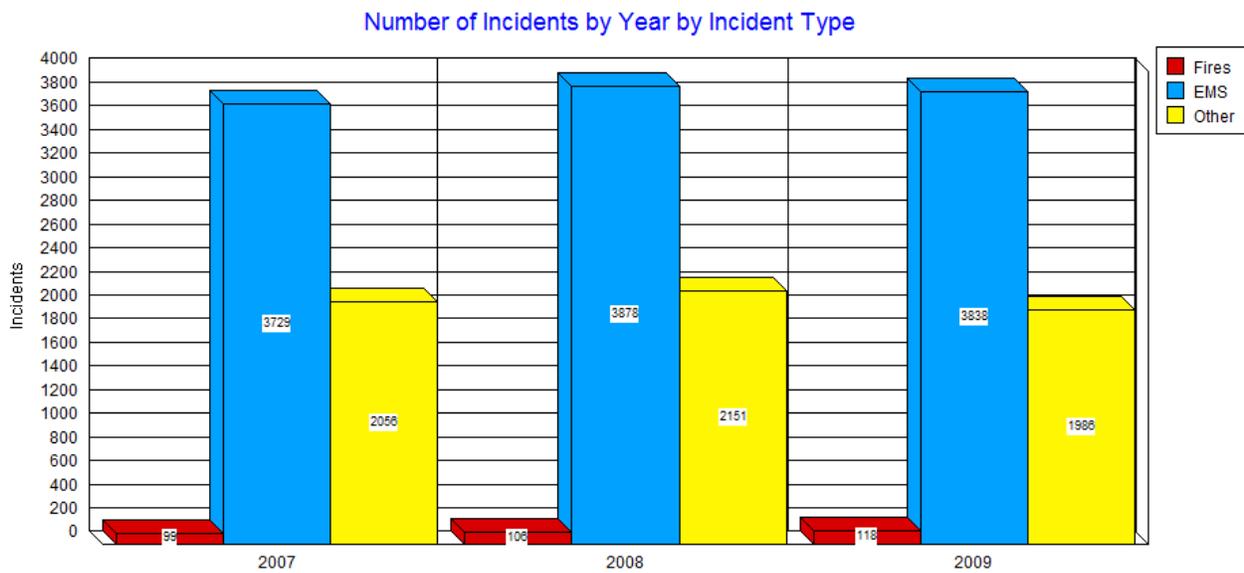
Below is a list of the more serious Beverly Hills "Nature of Call" counts for the 3-year period. These counts are based on first apparatus arrivals so they represent incidents as opposed to apparatus responses.

Year	2007	2008	2009	Totals
Incident Type	Count			
321 EMS call, excluding vehicle accident with injury	2,506	2,656	2,724	7,886
300 Rescue, emergency medical call (EMS) call, other	618	563	499	1,680
322 Vehicle accident with injuries	200	182	140	522
353 Removal of victim(s) from stalled elevator	112	184	145	441
311 Medical assist, assist EMS crew	101	99	99	299
323 Motor vehicle/pedestrian accident (MV Ped)	37	46	49	132
522 Water or steam leak	39	24	26	89
520 Water problem, other	31	25	22	78
412 Gas leak (natural gas or LPG)	24	25	26	75
131 Passenger vehicle fire	17	10	18	45
445 Arcing, shorted electrical equipment	21	11	12	44
444 Power line down	15	14	11	40
111 Building fire	8	14	12	34
521 Water evacuation	9	14	9	32
100 Fire, other	7	13	11	31
151 Outside rubbish, trash or waste fire	9	10	10	29

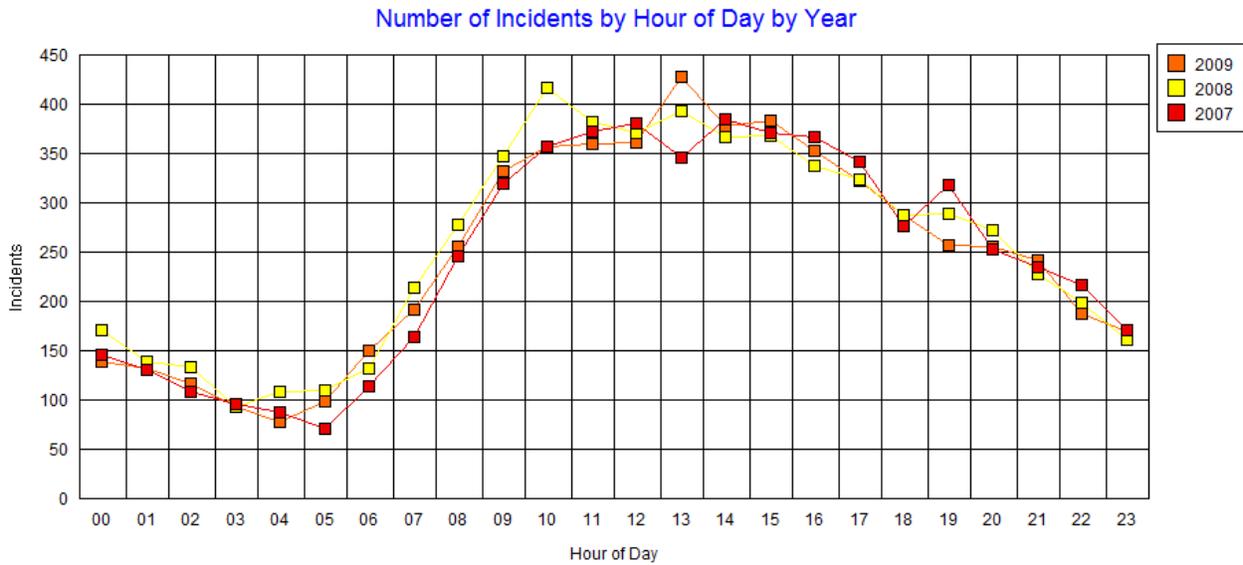
This chart shows the top types of property receiving services from the Beverly Hills Fire Department during the 3-year data set. Property types with fewer than 20 responses were eliminated from the list.

Year	2007	2008	2009	Totals
Property Use	Count			
419 1 or 2 family dwelling	1,310	1,458	1,415	4,183
429 Multifamily dwellings	1,178	1,235	1,255	3,668
963 Street or road in commercial area	417	386	374	1,177
599 Business office	443	296	275	1,014
962 Residential street, road or residential driveway	265	246	268	779
500 Mercantile, business, other	94	239	252	585
960 Street, other	163	216	173	552
342 Doctor, dentist or oral surgeon's office	184	183	170	537
449 Hotel/motel, commercial	155	205	164	524
340 Clinics, Doctors offices, hemodialysis centers	98	137	143	378
161 Restaurant or cafeteria	104	121	95	320
459 Residential board and care	61	122	72	255
UUU Undetermined	19	101	64	184
882 Parking garage, general vehicle	37	82	56	175
311 24-hour care Nursing homes, 4 or more persons	80	26	40	146

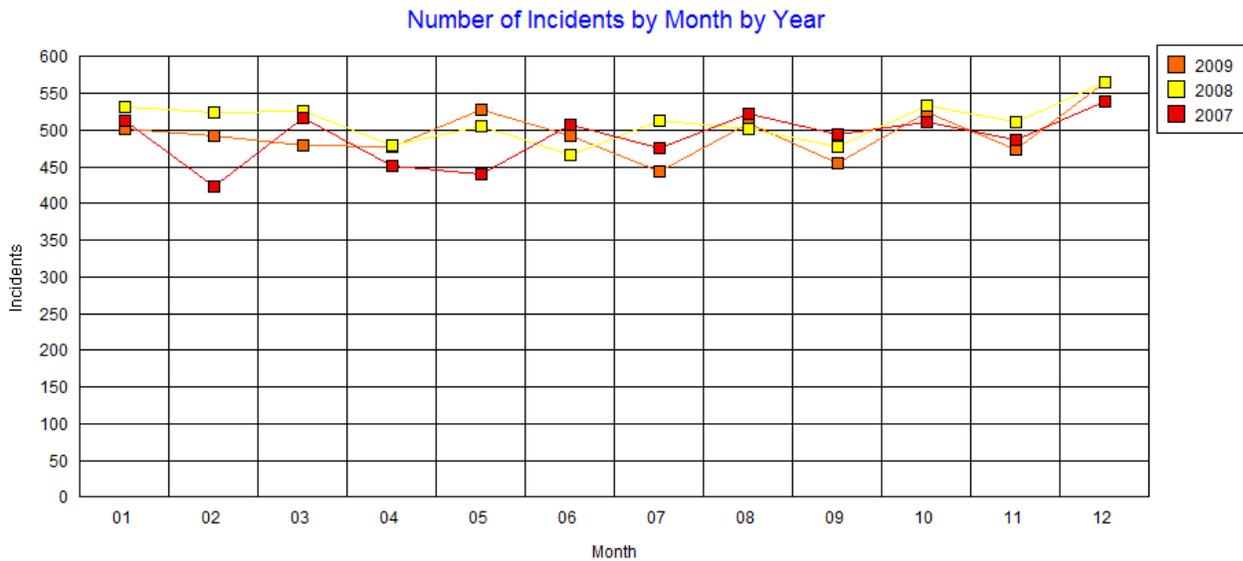
Next is the breakdown by incident type. Notice the number of fires rises from 99 in 2007 to 106 in 2008 and finally to 118 in 2009. The EMS and Other incident type categories peaked in 2008 declining only slightly in 2009.



This graph compares incident activity by hour of day by year. Notice peak activity hours are from 10:00 – 17:00.



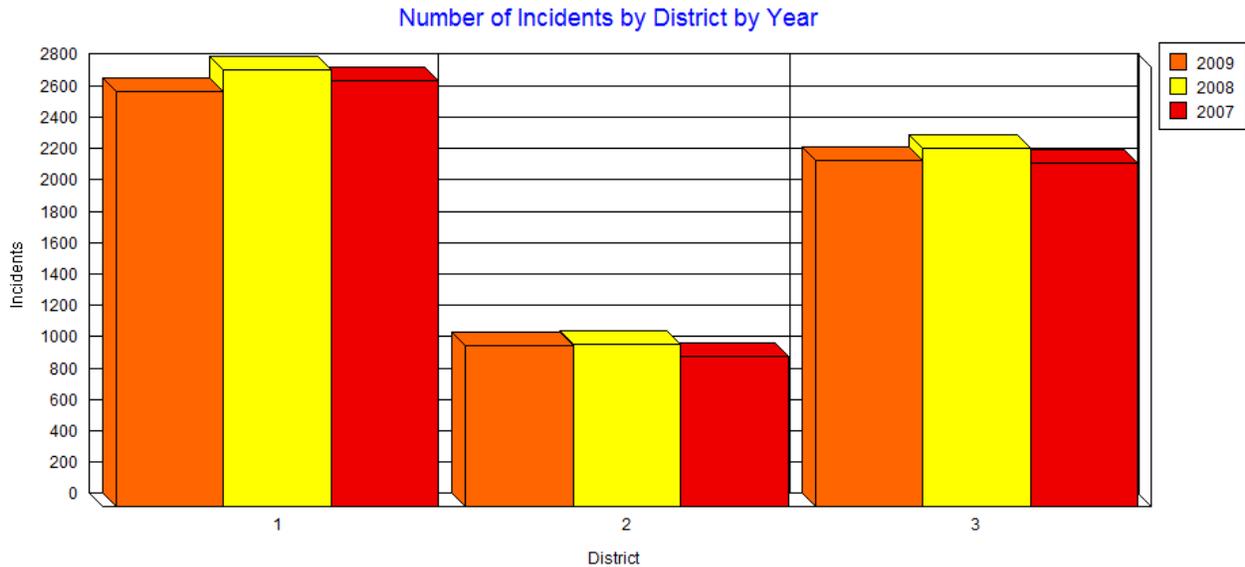
The graph below illustrates the number of incidents by month in the last three calendar years.



Across the months, the workload does not show a great variation. Per hour or by month, the demand for service is constant.

2.7.2 Demand by Station Area

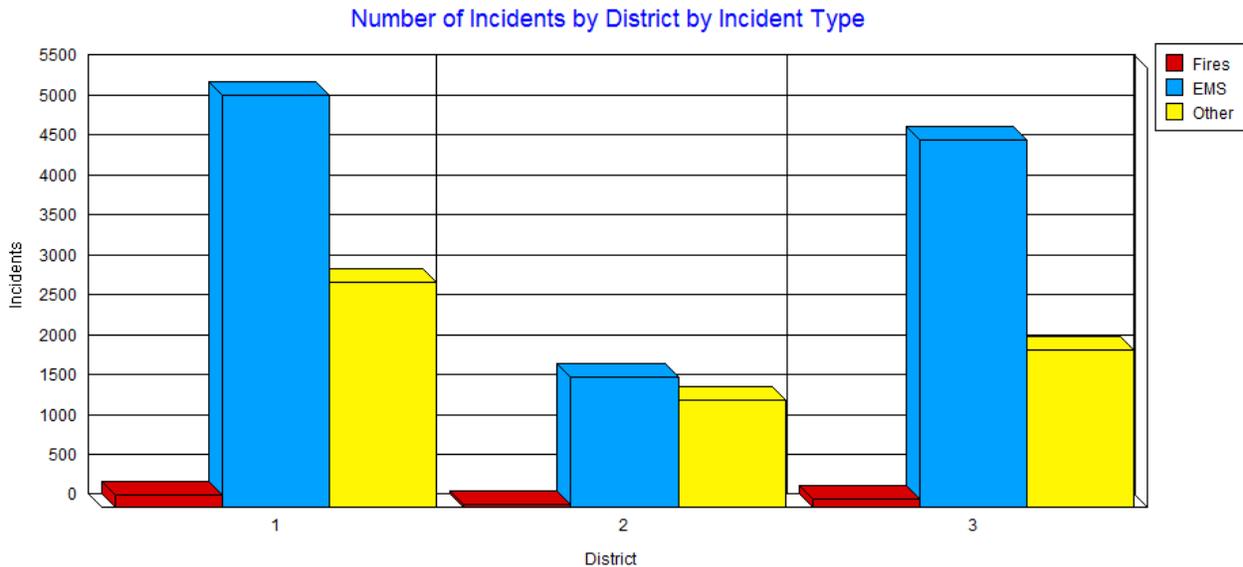
Across the months, the workload does not show a great variation. Per hour or by month, the demand for service is constant. Here is an incident count by district by year. District 1 has the greatest activity followed by District 3. Volume remains fairly steady by year.



Next are the response counts per fire apparatus per year:

Year	2007	2008	2009	Totals
Vehicle ID	Count			
E1	2,606	2,474	2,515	7,595
E2	1,013	1,070	1,063	3,146
E3	2,074	2,030	2,010	6,114
E5	395	337	304	1,036
E6	78	131	59	268
E7	12	168	93	273
E8	16	52	29	97
LACOFD	93	111	148	352
R1	3,163	3,245	2,764	9,172
R2	771	818	1,479	3,068
R3	90	130	136	356
T4	853	866	782	2,501
T9		4		4
USAR1	5	1	7	13
Totals	11,169	11,437	11,389	33,995

Here is the breakdown by district by incident type:



2.7.3 Beverly Hills Total Response Times From 911 to 1st Unit Arrival

While many fire departments track *average* response time, it is not highly regarded as a performance measurement. One of the most commonly used criteria to measure response effectiveness is fractile analysis of response time. A fractile analysis splits responses into time segments and provides a count and percentage for each progressive time segment.

Here is a fractile breakdown for Beverly Hills Fire Station responses. Mutual/auto aid incidents outside of the City were not included in this calculation. Incidents exceeding 20 minutes response time were also eliminated. Following the percent measure in parenthesis is the incident count accumulation by that percentage point:

Incidents: Call to 1st Arrival Analysis - by Year

	2007	2008	2009
Call to 1st Arrival at ** 4 minutes **	35.9% (2,028)	39.1% (2,289)	42.0% (2,356)
Call to 1st Arrival at ** 5 minutes **	64.7% (3,654)	67.2% (3,933)	69.5% (3,903)
Call to 1st Arrival at ** 6 minutes **	84.8% (4,786)	85.6% (5,012)	86.3% (4,847)
Call to 1st Arrival at 0370 secs	86.6% (4,886)	87.4% (5,116)	88.0% (4,942)
Call to 1st Arrival at 0380 secs	88.3% (4,983)	89.0% (5,212)	89.5% (5,024)
Call to 1st Arrival at 0390 secs	89.6% (5,056)	90.3% (5,288)	90.7% (5,093)
Call to 1st Arrival at 0400 secs	90.8% (5,124)	91.2% (5,342)	91.4% (5,133)
Call to 1st Arrival at 0410 secs	92.0% (5,191)	92.1% (5,392)	92.1% (5,175)
Call to 1st Arrival at ** 7 minutes **	92.8% (5,238)	92.8% (5,436)	92.8% (5,211)

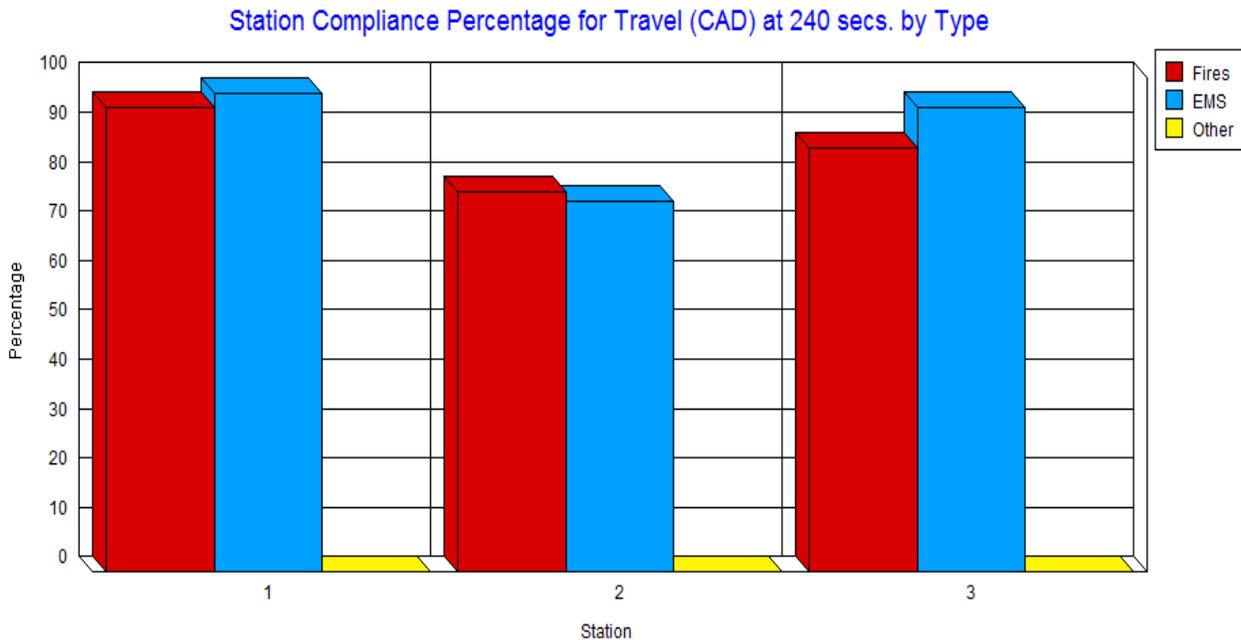
Discussion: Call to Arrival times exceed a Citygate best practices recommendation of 7 minutes from answering 911, 90 percent of the time, when averaged Citywide.

2.7.4 Travel Time – En Route to Arrival

	2007	2008	2009
Travel (CAD) at ** 1 minute **	7.5% (324)	8.5% (375)	10.4% (448)
Travel (CAD) at ** 2 minutes **	37.6% (1,617)	40.6% (1,785)	45.5% (1,954)
Travel (CAD) at ** 3 minutes **	71.5% (3,073)	75.3% (3,313)	77.1% (3,312)
Travel (CAD) at 0230 secs	88.5% (3,799)	89.0% (3,916)	89.5% (3,844)
Travel (CAD) at ** 4 minutes **	90.2% (3,875)	90.5% (3,984)	90.7% (3,897)

Discussion: As the map visuals displayed, the citywide travel times to 90 percent of the calls for service are less than 4 minutes. This is due to the majority of the calls being in Station #1 and #3’s area, in the grid type street network on level ground allowing very good travel times.

Travel Time compliance is very high in Stations #1 and #3. Compliance in Station #2 is lower, but *greater than 70 percent* for fire and EMS incidents by the 4th minute:

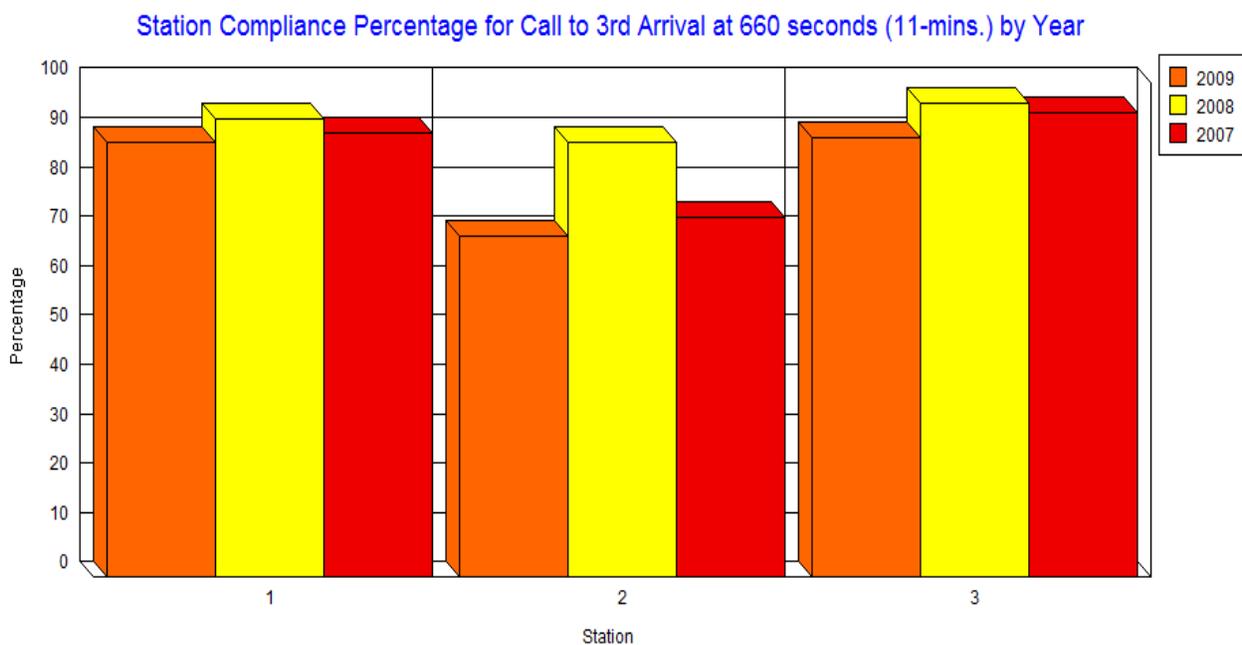


2.7.5 First Alarm Fractile Compliance

Measuring the time it takes the first apparatus to arrive on the scene is very important. Equally important is the amount of time it takes a full first alarm assignment to reach the scene of

structure requiring an organized multi-company response. In order to be consistent with best outcome goals for the risks present in Beverly Hills, Citygate would recommend the primary First Alarm units all arrive by the 11th minute, 90 percent of the time from the 911 call is answered.

In 3 years, Beverly Hills responded to 25 building fires with a dollar loss. Mutual/auto given building fires are not included in this count. Here apparatus responses from 2007 - 2009 were filtered to Engine and Ladder responses only. Next, those responses were isolated to only the 3rd arriving Engine or Ladder Company. The graph below was constructed for these 3rd apparatus arrivals showing percentage of compliance for the 3rd Engine / Ladder arrival at 11 minutes by station.



Stations 1 and 3 receive a 3rd Engine or Ladder arrival with 11 minutes with 90 percent compliance. Although Station #2 approached 90 percent compliance in 2008, it held near 70 percent in 2007 and 2009.

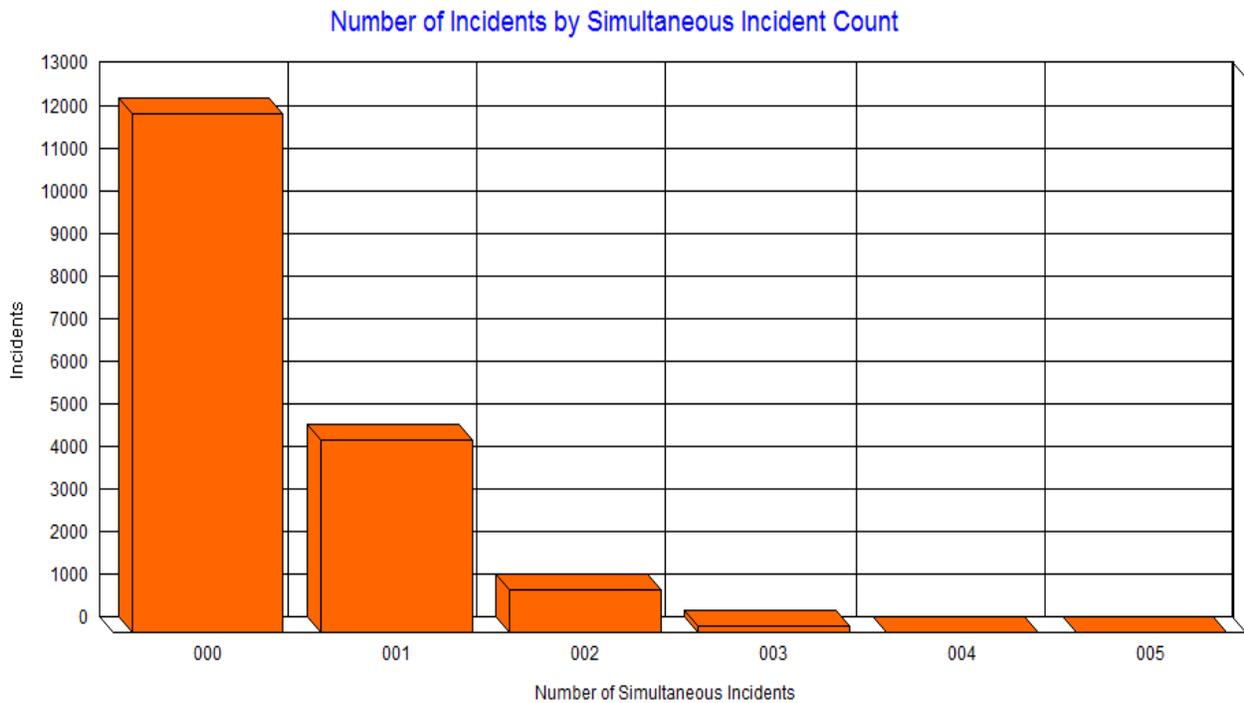
2.7.6 Simultaneous Incident Activity

A simultaneous alarm occurs when an incident originates before a prior incident has terminated. This section quantifies simultaneous or overlapping incidents.

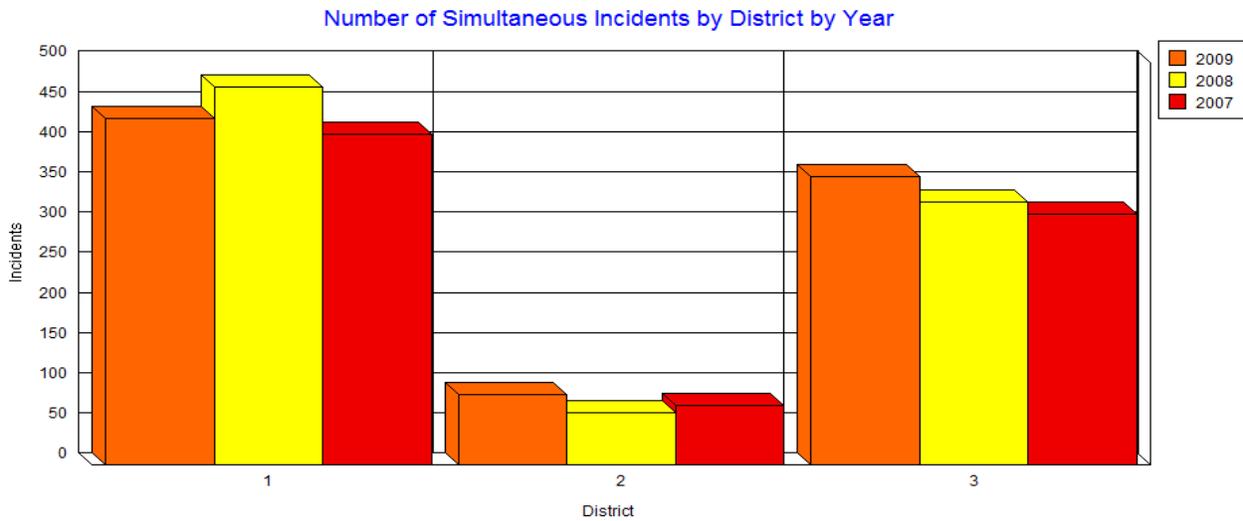
When overlapping incidents occur, fire department resources are taxed. Examining incident data for the 3-year dataset shows 32.18 percent of incidents occurred when Beverly Hills was already engaged in other response activity.

At least 2 incidents occurring at the same time	32.18 percent
At least 3 incidents occurring at the same time	6.91 percent
At least 4 incidents occurring at the same time	1.34 percent
At least 5 incidents occurring at the same time	.37 percent

This graph below illustrates the number of simultaneous incidents. “000”, “001”, “002”, etc. indicate the number of incidents underway when a new the incident originated.



Another way to measure simultaneous responses is when simultaneous incidents occur within the same station area. Beverly Hills experiences same-station simultaneous incidents 14.1 percent of the time:



2.7.7 Interdepartmental Aid

Interdepartmental aid quantifies the number of incidents in which the Fire Department received tactical assistance for other fire departments or provided assistance to other fire departments.

Only a small percentage of Beverly Hills' incidents involve aid:

Incidents: Count - Aid Type by Year

There are 17,961 Incident records being analyzed.

		2007	2008	2009	Totals
Aid Type		Count			
1	Received	13	11	12	36
2	Auto Aid Received	23	52	60	135
3	Given	35	25	46	106
4	Automatic Aid Given	176	197	232	605
5	Other Aid Given	15	7	13	35
N	None	5,622	5,843	5,579	17,044
Totals		5,884	6,135	5,942	17,961

Beverly Hills is far more likely to give automatic aid than to receive it. Auto aid incidents have increased significantly each year.

2.7.8 Engine 5 and BLS Rescue Ambulance 3

Operating from Station #1 is a two-person crew that operates one of three units, based on needs. The staffing is one Captain and one Engineer/operator, with Emergency Medical Technician (EMT) medical training; these positions are not paramedic certified.

Engine #5 – Which can be sent to building fires to increase pumping capacity and provide a four-person team when combined with a Paramedic Rescue Ambulance crew at the incident for different assignments. Having a “4th” engine staffed to respond as a two-piece company with a Paramedic Rescue Ambulance, also helps the ISO Class One rating for pumping capacity.

Rescue Ambulance #3 – Operating as a Basic Life Support (BLS) ambulance, during periods of peak call volumes, this ambulance can “marry up” with a 2-person LA County Fire Paramedic squad and enable a City-based, third ambulance. LA County EMS regulations require that two paramedics attend a patient when advanced skills are required.

Technical Rescue USAR Unit – This large “tool box” on wheels that carries the entire technical rescue equipment for the department. The correct fire service label for these types of units is “Urban Search and Rescue or USAR). Examples of the tools carried for special operations are high angle rescue (stuck window washer or above grade construction worker), confined space rescue (utility worker in an underground vault), soils collapse (construction worker trapped by trench cave-in), building collapse, explosions and hazardous materials incidents. The unit also has a breathing air compressor and at an emergency can refill the breathing air bottles used on building fires, confined space or hazardous materials incidents. The apparatus was purchased and outfitted via a federal grant and provides a host of tools meeting the high-risk, but low-probability events that the diversity of buildings and institutions present in the City. To not have this equipment would mean a delayed response from regional units staffed by LA City or County, which may, or may not, always be immediately available. Given how Homeland Security Grants are processed both locally in the region and then Washington, the grants are not a gift and the City did demonstrate the need for the equipment and the inability of a single ladder truck to carry all of the specialized equipment.

Staffing Discussion – None of these three units are needed on a daily basis. When they are, they need to be dispatched to the scene and then the two-person crew is combined with other crews based on the needs of the incident. The current staffing is appropriate with a Captain to supervise the technical use of the pumper or USAR equipment, and an Engineer to operate the pumper and rescue tools on the USAR apparatus. A two-person crew is much safer to operate large heavy units with red lights and siren in traffic. The second person provides navigation and a second set of eyes to avoid collisions with other drivers who do not yield the right of way.

Therefore, it is appropriate that these seldom-used units are only staffed with a two-person crew. The question becomes how much are they used and are there even more ways to make the two-person crew into a multi-mission team?

The following calculations involve Apparatus responses by Engine #5 and Rescue #3 for the 3-year data study:

Apparatus: Count - District by Vehicle

District	1	2	3	Totals
Vehicle	Count			
E5	670	67	286	1,023
R3	158	52	145	355
Totals	828	119	431	1,378

Here is the breakdown by year.

Apparatus: Count - Year by Vehicle

Year	2007	2008	2009	Totals
Vehicle	Count			
E5	388	336	299	1,023
R3	89	130	136	355
Totals	477	466	435	1,378

Most of the responses are into Station Districts #1 and #3, which is not surprising given the overall workload and commercial properties in the “non foothill” areas of the City. The usage per unit, per year is fairly constant as the need per month. The demand on Rescue #3 is up to about one per day, meaning at peak hours the City needs a 3rd paramedic rescue ambulance, which currently always has to be a combination of Rescue #3 with the Engine #5 crew at BLS care and a LA County Paramedic Squad from a distance.

2.7.9 Response Time Statistics Discussion

Given the above summary of Citygate’s response statistics analysis, the detailed data in the comprehensive statistics appendix, and the findings based on the geographic analysis model, we offer the following findings:

- Finding #8:** With a Citywide fire/EMS incident first-due unit performance of 6:20 (minutes/seconds) at 89.5 percent, the overall current station and automatic aid system is delivering a first unit **better than** a Citygate and national recommended best practice goal point of 7 minutes, 90 percent of the time.
- Finding #9:** With a Citywide travel time measure of 3:50 (minutes/seconds) at 89.5 percent, the current station placement delivers travel times to the majority of the calls **faster** than the NFPA 1710 recommendation of 4 minutes travel time. Such travel time performance also is consistent with what the ISO prefers in a Class 1 department.
- Finding #10:** With a Citywide First Alarm delivery of a 3rd unit by the 11th minute from the 911 call, 87.5 percent of the time, the current station system comes close to national and Citygate best practice recommendations. Given the travel time challenges in the hillside areas, a three-station system cannot improve on this measure. Given about 9 serious building fires per year, and few of these in the District #2 hillside areas, there is not a compelling need for a 4th fire station.
- Finding #11:** The simultaneous emergency call for service rate of 32 percent for two incidents at once is not a significant issue in the near term, except for the pattern of need being mostly for a 3rd paramedic ambulance at peak hours of the day and that mutual aid from LA City or County may not always be *immediately* available.
- Finding #12:** The City benefits from the mutual aid regional response system. While this system cannot replace existing City stations or units, the City should continue to participate in this valuable support system for simultaneous calls for service and multiple-unit serious emergencies.

2.7.10 Possible Re-Deployment Scenarios

As these baseline coverage maps were understood, Citygate worked with the Fire Department staff to identify and test the impacts of possible re-deployment scenarios.

It became apparent that while the two-person crew of E5/R3 is very valuable, being a BLS unit, it does not satisfy the need for a 3rd paramedic ambulance team. However, there are paramedics

on each engine and the ladder truck at Station #1. Based on the frequency of need for the 3rd paramedic ambulance as well as the lower call volume in District #2 in the hills area, Citygate and the Department Study team jointly recommend:

Recommendation #1: Deploy a 3rd Paramedic Ambulance: Transfer a paramedic firefighter from the Ladder Truck at Station #1 to Engine #2, thus making Engine #2 a full Advanced Life Support (ALS) unit with two paramedics per LA County EMS Agency requirements. The firefighter from Engine #2 will be transferred to the Ladder Truck. For ambulance calls in Engine #2's District or for a 3rd ambulance request citywide, dispatch BLS Rescue Ambulance #3 from Station #1 using Engine #5's 2-person crew and also send Engine #2 with its paramedics.

With these moves, Engine #2 will have two paramedics per day and can cross-staff the ambulance when a 3rd paramedic ambulance is needed, *within existing staffing and costs.*

2.7.11 Integrated Fire Station Deployment Recommendations

The City of Beverly Hills has good fire crew coverage, partially because of its automatic aid relationship with its neighboring fire departments.

While no one city (even a metropolitan one) can stand by itself and handle everything and any possibility without help, a desirable goal is to field enough of a response force to handle a community's day-to-day responses for primary single-unit response needs equitably to all neighborhoods, as well as be able to provide an effective initial response force (first alarm) to moderately serious building fires. This the current Beverly Hills station system can provide.

The City already provides some emergency deployment via an "adaptive response team" with the two personnel assigned to E5/USAR and this should continue. With the upgrade of Engine #2 to ALS status and the dispatch of Rescue Ambulance 3 (E-5 personnel) to support, a third due paramedic ambulance is provided to meet the need for an occasional third paramedic ambulance, at no additional cost to the current budget. Citygate recommends the following dispatch model for the two personnel E5/USAR Team:

Recommendation #2: USAR Unit Use: For all Structure Fires and Technical Rescue incidents, the USAR Heavy rescue unit should be immediately dispatched with the existing two-person crew.

This means that Engine #5 will only be sent when other engines are not available, or every single City engine is needed for maximum pumping capacity at large scale fires.

When any serious auto accident or technical rescue incident occurs, the USAR unit and the Ladder Truck are to be dispatched, thus sending an effective technical rescue team of 7-firefighters.

Beyond the 3rd Rescue Ambulance issue, Citygate does **not** see Beverly Hills needing, in the near term, significantly more fire crews or adding more staffing than the current 25 per day, unless unforeseen socio-economic changes in the years ahead increase calls for service to the point that a 4th Engine crew is needed to handle much higher call for service volumes. This would be adding two firefighters per day, taking Engine #5 to 4-personnel, which could then assume the duty of cross staffing the 3rd ambulance, instead of the Station #2 crew. Citygate does not see a need for years to come, if ever, for both a 4th, 4-firefighter engine crew and a third two-paramedic ambulance, which would require a staffing increase of four more firefighters per day or 12 total across the three staffing platoons. This would be a large expense for very few calls for service that the current quantity of 25 personnel on-duty cannot handle, given the mutual aid back up from LA City and County.

Additionally, Citygate recommends for the on-going evaluation of its fire services, the City Council adopt as policy fire deployment measures that contain current best-practice elements:

Recommendation #3: Adopt Revised Deployment Measures: The City should adopt revised performance measures to direct fire crew planning and to monitor the operation of the Department. The measures should take into account a realistic company turnout time of 2 minutes and be designed to deliver outcomes that will save patients medically salvageable upon arrival and to keep small but serious fires from becoming greater alarm fires. Citygate recommends these measures be:

-
- 3.1** Distribution of Fire Stations: To treat medical patients and control small fires, the first-due unit should arrive within 7 minutes, 90 percent of the time from the receipt of the 911 call. This equates to 1-minute dispatch time, 2 minutes company turnout time and 4 minutes drive time in the most populated areas.
- 3.2** Multiple-Unit Effective Response Force for Serious Emergencies: To confine fires near the room of origin, to stop wildland fires to under 3 acres when noticed promptly and to treat up to 5 medical patients at once, a multiple-unit response of at least 19 personnel should arrive within 11 minutes from the time of 911 call receipt, 90 percent of the time. This equates to 1-minute dispatch time, 2 minutes company turnout time and 8 minutes drive time spacing for multiple units in the most populated areas.

SECTION 3—FIRE DEPARTMENT REVIEW OF HEADQUARTERS PROGRAM FUNCTIONS

Section Intent: This section serves as an analysis of the Department’s headquarters and support service programs.

The “headquarters” system of a fire department covers a multitude of activities. For the purposes of this plan, Citygate Associates evaluated headquarters programs of the Beverly Hills City Fire Department by interviewing key personnel, by examining facilities and equipment and obtaining 15 SWOT² analysis questionnaires on every aspect of Department operations.

We reviewed the daily reports of activities and fire reports, examined the readiness of fire apparatus and equipment, evaluated the standard response plan and pre-fire planning program, and appraised the training program and prevention programs. All of these are important components of a fire department operation and critical to ensuring that needed resources can respond quickly and effectively. A number of main themes emerged, some of which deserve particular consideration while others only require the regular attention they currently receive.

3.1 OVERALL IMPRESSIONS

The Beverly Hills Fire Department is a well-run, smooth functioning fire department. Beverly Hills is a moderate sized suburban stable community in the midst of similar communities in western Los Angeles County. Beverly Hills, along with its neighbors, enjoys the luxury of solid automatic aid agreements. This does not mean there are no issues to be addressed; however, the community can take pride in and feel confident about its Fire Department.

While Beverly Hills is a Class One Fire Department for field deployment, it is struggling to fund essential headquarters and logistics needs given budget reductions. Citygate found, and will discuss in depth in the next sections needs to be addressed in four major themes – training/safety, fire prevention staffing to all risk types, office support positions and technology support.

3.1.1 Management Team Organization and Duties

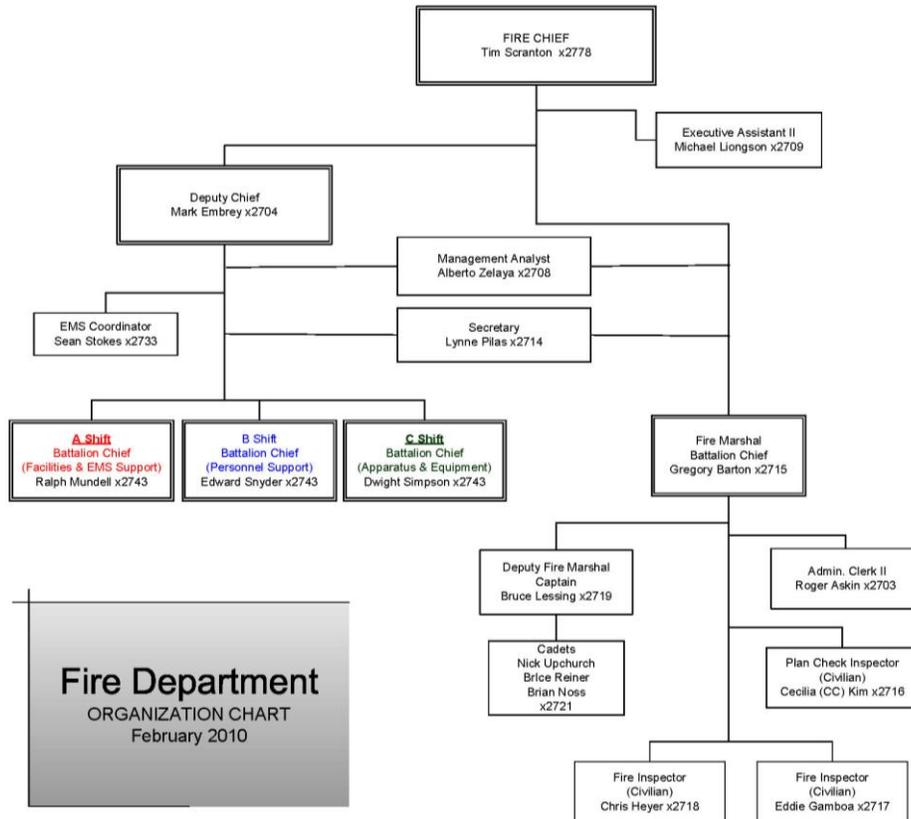
National Fire Protection Association (NFPA) Recommended Standard 1201 – *Standard for Providing Emergency Services to the Public* states in part, “the [department] shall have a leader and organizational structure that facilitates efficient and effective management of its resources to carry out its mandate as required [in its mission statement].”

² SWOT Strengths, Weaknesses, Opportunities, Threats Analysis.

A fire department Beverly Hills' size needs to have a management team that is the proper size, and adequately trained and supported. There are increasing regulations to be dealt with in operating fire services, and the proper hiring, training and supervision of line employees requires an equally serious commitment to leadership and general management functions.

The organization chart shows an organization that is barely sufficient to meet the needs of a department the size of Beverly Hills'.

Beverly Hills Fire Department Current Organization Chart



General Considerations:

- ◆ Are there an adequate number of management and support staff members?
- ◆ Is there an effective distribution and assignment of duties to accomplish the management needs of the Department?
- ◆ Are the proper administrative procedures in place to operate the Department?
- ◆ Does the Department have enough managers to maintain an emergency management span of control ratio of one supervisor for every three to seven

subordinates as suggested by the National Incident Management System (NIMS) and NFPA 1006 Standard for Rescue Technical Professional Qualifications?

- ◆ Do the managers have rank level consistent with the International Association of Fire Chiefs (IAFC) Officer Development Handbook to carry out their duties? The IAFC recommends four levels of officer development: Supervising Fire Officer (Company Officer, Captain); Managing Fire Officer (Battalion Chief); Administrative Fire Officer (Division or Deputy Chief); and Executive Fire Officer (Fire Chief). Within each level, it makes specific training, education and experience recommendations, which, if followed, should develop well-rounded and prepared fire officers.

One of the difficulties in analyzing the non-deployment programs at Beverly Hills Fire Department is the lack of headquarters staff to oversee the programs. The Training Program is a case in point. Much of what firefighters do on emergencies falls into the relatively routine category; the routine training programs such as Continuing Education for paramedics along with the Quality Improvement program addresses this need. As long as everything goes well, there is no need for any specialized training. It is when the High Risk-Low Frequency, No-Decision - Time incident comes along that the routine training is not sufficient. The after action findings of the tragic furniture store fire in Charleston, South Carolina where nine firefighters lost their lives bear this out, along with sadly multiple wildland firefighter fatalities.

Adequate, supervised, verified training is needed to prevent these types of tragedies, which have enormous long-term emotional and fiscal impacts on not only the firefighters and their families, but the agency and the community as well. Charleston had to completely replace its fire department executive leadership, bring in an outside training and leadership team and totally revamp its entire training and incident management processes. Had Charleston maintained currency with the best practices of the fire service and required standardized, verifiable, ongoing, and realistic training, it is likely those nine firefighters would be alive today and firefighting in Charleston would be business as usual.

Having said that, it is critical to remember that Beverly Hills' firefighters are neither cavalier nor casual about the way they conduct themselves during emergencies. They have good basic training; many come from other departments with ongoing training programs and bring what they learned elsewhere with them. Beverly Hills' firefighters attend some ongoing training courses. That is not the issue.

The issue is that there is no ongoing programmatic approach to ensure that current best practices in safety and training are taught, practiced and instilled in the daily operations of the Fire Department. This takes leadership devoted to that assignment. Simply stated, the headquarters staff is too thinly spread. Without a dedicated training/safety officer any expectation of success in that function will be more by chance than design.

3.2 TRAINING AND SAFETY ADMINISTRATION

Robust training programs teach and reinforce the safety practices of firefighters, and coupled with vigorous safety and health programs, communities find many benefits including:

- ◆ Lower injury rates followed on by lower workers compensation costs.
- ◆ Reduced vicarious liability for injuries and property damage due to errors in practice.
- ◆ More efficient procedures, more effective use of resources, reduced damage to apparatus and equipment.

Due to budget reductions, the Department eliminated the Training Chief position. Citygate did not find a pattern of firefighters discounting the value of training; however, given the lack of oversight, program planning and management, the training program has and will continue to decay. It is like deferred maintenance: the longer this issue is ignored, the greater will be the cost of the repair work that has been deferred.

While some training does occur and performance currently reflects well on what was learned in the past, there is no organized training program in the Beverly Hills Fire Department. When the training officer position was abolished in a cost saving effort in July 2009, the responsibilities for that position fell onto the shoulders of the Deputy Chief of Operations. This chief, also due to budget reductions, had to assume the responsibilities of the Administrative Division Deputy Chief and what was left of those subordinate responsibilities.

The Training Officer up until July 2009 was an Acting Battalion Chief who prepared drill schedules for the entire 2009 calendar year. Since December 2009, no drill schedules have been published.

Level I Command and Management Courses, focused on the development of fire captains, have been scheduled and presented. This is due to the efforts of the Fire Marshal. Before the training budget was reduced, the Department encouraged captains to attend one outside, state certified Level II Command or Management Course each year. These courses focus on the development of Chief Officers. Captains can still attend, but on their own time with reimbursement for expenses.

Beverly Hills Fire Department has begun to address the issues of career development at the Captain and Chief Officer level with the Acting Captain Program and Task Book and the Acting BC program and Task Book. These are well considered programs, but they currently have no training officer to administer them.

The EMS Coordinator still provides required emergency medical training and quality assurance for the Department.

Although Citygate did not observe drills being conducted, the Captains (company officers) are conducting drills at the stations to maintain skill levels. But the topics are not organized, given priority and delivered consistently Department-wide. Citygate observed training being conducted in the Department's classroom; although we did not evaluate the training for content or quality.

In the mid 1990's, a study conducted for a major fire department of the knowledge, skills and abilities (KSAs) required of a firefighter found that a firefighter has over 200 essential KSAs while a captain paramedic has over 500 essential KSAs. The group conducting the study stated that by comparison, most government employees are required to have about 100 knowledge, skills and abilities. Many of these KSAs are very complex and performed under extremes of emergency stress.

The other significant weakness is lack of a training facility. Although the Department has an excellent classroom in Station #1, they have no adequate drill site or any place to conduct live fire training. Hose and ladder drills have to occur on "borrowed" public and private property. Live fire training and auto or technical rescue skills have to be done outside the City. The Department has an agreement allowing them to use the fire training center in Culver City, but Beverly Hills is typically limited to one company at a time, sent on-duty, to that facility. Any multi-company drills at that site would require significant hire-back overtime expense, which is not currently available.

Finding #13: The Department lacks a Safety and Training Officer and centralized focus on training and safety. Since the Department had a robust training program up until a little over a year ago, the personnel probably retain enough residual knowledge, skills and abilities to continue for a while into the future. However, at some point the same knowledge, skills and abilities will begin to degrade and emergency service performance will degrade with it. Without a designated Safety and Training Officer, the training/safety programs will not be able to succeed or meet best practice recommendations, or essential requirements on the fire service by CAL OSHA.

Recommendation #4: Training Program: The Department and the City need to work together to reinvigorate a robust and effective training program. That program should include the following four major components:

- 4.1 Regularly scheduled drills where firefighters practice the essential knowledge, skills and abilities they need to do their jobs safely and effectively. This drill schedule needs to include in-station practice on the apparatus, tools and equipment they use; practice at a training facility coordinating with other companies; and a walk-through of major facilities, especially of the hospitality industry so essential to Beverly Hills' reputation as a high-class destination.
- 4.2 Career development training where firefighters develop the mental knowledge, skills and abilities associated with advancement as driver/ operators, company officers, chief officers and, finally, fire chiefs. This is achieved through a combination of fire service training courses at each level and higher education available through community colleges and universities.
- 4.3 Specialized training for firefighters assigned as paramedics, prevention officers, hazardous materials responders and technical rescuers. Training in much of this arena is governed by statute and cannot be ignored for very long or the Department could find itself out of compliance with statutes while it is attending to these emergencies. This is also a training arena that is constantly evolving as new techniques, new equipment and tools, and new challenges are addressed.
- 4.4 Mentoring for firefighters by seniors in the Department to ensure their development in those areas where training is needed but not a formal program. The International Association of Fire Chiefs, in their Officer Development Handbook, calls it "the pursuit of the planned, progressive life-long process of education, training, self-development and experience."
- 4.5 Revise and adopt as much of the 2010 Strategic Plan Safety/Training plan elements as possible under the current climate. This will provide a basis for moving forward by adoption of best practice standards.

4.6 The Department and City need to plan for at least a small and in the City training site where there is the paved space, secured, with lighting and fire hydrants for hands-on training. High risk and live fire training can continue to be done at the Culver City site. Overtime will have to be budgeted when out-of-town training requires multiple Beverly Hills crews to attend.

Below is a partial list of best practice recommendations for a training program and training officer:

- ◆ NFPA 1201 *Standard for Providing Emergency Services to the Public* recommends in Section 4.11.3: “A training officer shall be designated and responsible for supervising the work of the organization personnel assigned as instructors or assistants. The training officer leader shall meet the requirements of applicable professional qualification standards.”
- ◆ NFPA 1500 *Standard for Fire Department Occupational Safety and Health Program* in Section 4.7 recommends the appointment of a departmental Safety Officer who meets the applicable qualifications and has authority to administer the programs.
- ◆ NFPA 1041 *Standard for Fire Service Instructor Professional Qualifications* describes the competencies of the fire service instructor. This standard provides the fire department training program with three levels of progressive development: Instructor I, II, and III. Each of these levels outlines the requirements for managing the training program, developing instructors and instructional material and evaluating and testing personnel. This is essential for a robust training program.

The training officer needs to be familiar with a number of NFPA Standards as well as ISO, CAL OSHA and other requirements that address training. On an interim basis, a chief officer with some other duties can handle this, but for a department the size and complexity of Beverly Hills', this is more than a part-time job.

The job of a firefighter is extremely complex and the tasks they perform must be delivered correctly every time. This is particularly critical for those tasks that are very hazardous, do not occur very often, and for which there is no decision time. Training in the fire service has two parts: vocational training, which teaches the skill sets necessary to do the “hands-on” type work that firefighters do, and education, which teaches the knowledge necessary to do the “mental” work that firefighters do.

An effective training program is the keystone to effective emergency response. During emergency operations, time is always of essence and an effective training program can mean the difference between a fire contained to the area of origin and one that causes great damage or the difference between effective CPR that starts on time and a patient who dies. The NFPA and Federal and CAL OSHA have many recommended standards that cover the training arena. As an abbreviated overview:

- ◆ NFPA 1001 *Standard for Fire Fighter Professional Qualifications.*
- ◆ NFPA 1002 *Standard for Fire Apparatus Driver Operator/Professional Qualifications.*
- ◆ NFPA 1006 *Standard for Rescue Technician Professional Qualifications.*
- ◆ NFPA 1021 *Standard for Fire Officer Professional Qualifications*—This standard covers the four levels of fire officer progression; Fire Officer I, Fire Officer II, Fire Officer III, and Fire Officer IV. The International Association of Fire Chiefs developed the Officer Development Handbook, which coordinates Fire Officer I with Supervising Fire Officer; Fire Officer II with Managing Fire Officer; Fire Officer III with Administrative Fire Officer; and Fire Officer IV with Executive Fire Officer. Each of these four levels of Officer development has a complete training, education, experience, and self-development component. This handbook endorses Fire and Emergency Services Higher Education, the national model of training and education development.
- ◆ NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner.*
- ◆ NFPA 1401 *Recommended Practice for Fire Service Training Reports and Records.*
- ◆ NFPA 1403 *Standard on Live Fire Training Evolutions.*
- ◆ NFPA 1404 *Standard for Fire Service Respiratory Protection Training.*
- ◆ OSHA *requirements in the Code of Federal Regulation 29* covering self-contained breathing apparatus.
- ◆ NFPA 1451 *Standard for a Fire Service Vehicle Operations Training Program.*

The issue is whether the Department adheres to these standards by adoption or by reference in training documents. Citygate reviewed the various operations Standard Operating Procedure (SOP) documents provided by the Department and found no reference to these best practices. However, that is not to say that the SOPs are poorly written or do not meet the general conditions normally found in compliant documents. They are clearly written and appear to be similar to SOPs in use throughout the fire service.

The City should strive to continue funding for participation in training programs that are sponsored by the Office of State Fire Marshal and /or the National Fire Academy to ensure that departments are receiving top quality certified training that keeps them current with the state of the art. Within the parameters of its limited training budget, Beverly Hills Fire Department has members attending Fire Marshal and National Fire Academy training. This is probably not at near the numbers that would be desirable, but it is evidence of a commitment to training.

Another large coordination job for a training officer is to maintain and coordinate the Department's new and best practice succession plan. Someone has to publish and advertise training opportunities, schedule evaluations and training and assign mentors. A healthy succession plan does not happen by accident, or on its own.

Recommendation #5: Training Officer: On an interim basis, assign the Training Officer (up to 2 years, given the fiscal climate) *management* function to one of the shift battalion chiefs. Then, assign the Engine #5 Captain during the workday to provide coordination, some delivery and verification reporting of training to each duty platoon. The battalion chief's duties would be to lead the program, determine departmental training needs, set overall schedules with the captains and attend regional training officer meetings.

Each platoon's Training Officer (E5 Captain) will ensure that each shift is as fully engaged in training as possible and fulfills the integrated Department-wide plan. This includes providing shift leadership to ensure that training and drills are scheduled, completed and recorded, and that assistance with the training is provided as much as his or her skills permit. Currently, the E5 Captain is assigned to coordinate daily shift scheduling. This would be transferred to the duty Battalion Chief's Aid/Scene Safety Officer.

5.1 While using E5 Captains is an interim solution, a permanent training officer solution is needed as soon as possible to provide coordination and leadership across all three shifts. By FY12/13, fund a 40-hour battalion chief (or similar position) as the Training Officer for the training program to meet the regulatory and safety needs of the Department. The Training Officer position could also be a rotation assignment every 3 years to/from another position for career development. The second Deputy Chief position will *not be restored*.

Recommendation #6: SOP Review: As time and resources permit, review the Department’s emergency operations Standard Operating Procedure (SOP) documents and compare them with the appropriate best practices. Edit them, as needed, to ensure compliance. Notate in the documents that they are compliant with the particular edition of the appropriate best practice. As these best practices are revised and updated, update the Department’s SOPs.

3.3 ADMINISTRATIVE SUPPORT ORGANIZATION AND POSITIONS

Every type of service that is delivered by field personnel (“the line”) depends on logistical support to have the materials they need to perform their jobs for the public. This is especially true in fire departments for administrative support specialists, or clerical positions.

Even in a highly automated agency, someone has to:

- ◆ Answer citizen inquires
- ◆ Process requests for non-emergency services such as inspections
- ◆ Process paperwork from supply requests, to purchases to budgeting
- ◆ Support managerial staff with record keeping and generating reports
- ◆ Permit, inspection, billing and fire prevention workflow processing
- ◆ Provide a myriad of other “back office” functions.

The loss of the training officer position is just part of the problem with regard to headquarters staffing and functionality in the Beverly Hills Fire Department. There have been three major shifts in the organization chart since 2006 due to downward budget pressure and the need to take

advantage of retirements to generate savings. Initially, these were appropriate moves, especially in a small agency where any significant reductions in line staffing almost immediately reduce emergency service responsiveness. Early in the current recession no one could know how deep and profound the recession would be. However as the recession continues the reductions in headquarters oversight, such as training, should not be sustained forever.

In addition to the two major support elements identified above, there needs to be a consideration of the differences between line functions and staff functions. Line functions involve those elements of the organization that respond to emergency incidents, while staff functions are the non-emergency functions such as training, communications, research and development, fire prevention, fleet management and logistical support. In large departments, these staff functions are divided into separate sections; in an organization the size of Beverly Hills', often more than one individual fulfills a function. Occasionally, although it is not recommended except as a stopgap measure, line personnel will fulfill some of these functions, particularly research and development, logistical support and communications.

In FY 09/10, the Beverly Hills Fire Department is an agency with a budget of \$29.2M and 87 full-time equivalent positions (FTE's), plus three fire cadet volunteer positions. This entire Department and its emergency services, fire prevention, and public education programs are supported by *only* 3.0 Administrative Support positions. These are organized as follows:

- ◆ 1.0 – Executive Assistant II (General Administration)
- ◆ 1.0 – Administration Clerk II (Fire Prevention)
- ◆ 1.0 – Secretary (General Support)

Since 2006, the Department has *lost* to budget cuts:

- ◆ 1 – Deputy Chief
- ◆ 1 – Training Battalion Chief
- ◆ 1 – Administrative Captain 40-hour position
- ◆ 1 – Citizen CPR Program Coordinator

Since 2006, the City did civilianize some of the fire prevention positions and add one plans checker in fire prevention to lessen the need for outside consultants.

Key Citygate Observations:

- ◆ The reality is that all of the mid-managers do routine office support work themselves, which at their cost per hour is clearly inefficient. Every manager in the agency pointed out duties that they were not getting to in a timely manner, if at all, due to the low level of support. Most of the office support capacity goes to

critical issues, such as office of the Fire Chief, budget, purchasing, key fire prevention permit/revenue processes and citizen inquiries.

- ◆ The next set of priorities to get minimal support is EMS Oversight and line operations. The field Battalion Chiefs and station personnel wait for what little support remains, depending on the critical nature of the request.
- ◆ There is a general sense of always being significantly behind on routine records, reports and proactive filing. The quantity of office support staff is clearly inadequate; there is no depth for vacation or sick relief. Increasingly, some programs will slip or not be done at all.
- ◆ The Department business processes are not fully automated, nor completely tied into other City systems, resulting in manual reporting and duplication of entry.
- ◆ The new fire prevention inspection programs – commercial inspections and wildfire fuel abatement – are not fully up and running on e-data systems. Firefighters collect information in the field on paper, which then sits waiting for clerical input. The commercial inspection program is actually, although slowly, cleaning up missing businesses from the City’s Business licensing system, which also is not tied to the Fire Department system.
- ◆ While worthy new programs were created for fire prevention and community safety, and designed to be revenue neutral with new fees, there has not been enough of a realization and emphasis that these programs generate data that has to be handled for the revenue to be realized. At the current pace, the fire prevention programs are a long way from being completed on even a stand-alone database. There is no funded technology plan to implement single point of entry handheld data devices in the field that can collect information, update the billing and business licenses databases all in one move. For now, it is a human dependent operation and not adequately staffed.

Discussion:

The Department and City Hall team should review the workload and duties for fire department general administrative support, and if necessary, reorganize the administration through an even distribution of tasks and responsibilities to achieve greater efficiency and quality of customer service. This would include determining the correct level for the Fire Department’s Management Analyst civilian position through a classification analysis of the current Management Analyst position, whose functions might be outside of its job classification.

By way of a rough comparison, the City’s Police Department has 5 office support positions (two more than fire) plus another five positions in their records division, all in addition to technology systems.

The needs of the Department would be better served by eventually *slightly* increasing the permanent support staff that can be cross-trained in all Departmental systems, instead of spending temporary agency replacement staff dollars for vacation or illness, as a temporary hire cannot perform all of the more technical duties. Eliminating the temporary help expense would provide an offset to the cost of increasing the permanent support staff quantity.

Finding #14: While a Fire Department Performance Audit is not set-up to do a detailed desk and workload audit of office support needs, in Citygate’s experience, we have found the office support capacity out of sync with what we have seen in other fire departments of Beverly Hills’ size. Moreover, the current business processes are not even fully automated or tied to City systems.

Even a modest increase in support staff hours will significantly increase headquarters staff output and citizen responsiveness. Most likely, an increase of .5 FTE for administration support is needed as soon as funding allows.

Recommendation #7: Office Support Positions: The City should undertake an analysis of the administrative support needs of the Fire Prevention, Fire Administration and Fire Operations support functions as soon as possible. This should include adding back minimum support hours to technology and fire prevention permits.

There should be initial support immediately to two critical needs – entering fire inspection records into the existing database and for the replacement Fire Department dispatch/records systems project. One way to do this at a modest expense would be to hire temporary clerical help to fast track the inspection records project, say 8-16 hours per week, and to fund on overtime 8 hours per week for an experienced Fire Captain to work on supporting internal technology projects.

3.3.1 Technology

Fire departments run today on technology, and not simply desktop computers for email and simple operations via the City's network. These functions are running and provided for by the City's IT Division. However, fire departments have radios to program, dispatch and fire incident databases to operate and from which to generate management data, and they need to maintain and service electronic EMS and field service instruments. With the loss of one of the two Administrative Captains, there is no one in Fire or City IT dedicated to this support function. The police and fire departments are in the process of buying a new computer aided dispatch system, but Fire is only staffing the project with occasional Fire Captain hours on overtime. The current legacy dispatch and fire records systems do not work well together at all of the management information reporting levels needed.

A highlight of the issues reveals:

- ◆ The firefighter scheduling system is complex and paper-based, requiring a lot of oversight time daily. There is no linkage to time cards and payroll.
- ◆ Very limited integration of data between police dispatch and fire records system.
- ◆ Antiquated dispatch software with no flexibility and/or growth potential. Replacement system being worked on.
- ◆ Outdated mobile data computer client software and hardware in field units.
- ◆ Poor data communications network for the mobile data devices.
- ◆ No mapping or geographic information integration.
- ◆ No automatic vehicle location data system to dispatch the closest unit.
- ◆ No redundancy or back-up capabilities to move dispatch data to the fire servers.
- ◆ No prioritized dispatch loading/stacking/queuing software, process or training.
- ◆ The "Firehouse" fire department records management system is grossly underutilized.
- ◆ The transition to a new dispatch computer system will place a tremendous workload on the very limited fire administrative staff.

Finding #15: The Fire Department is not staffed to adequately use, maintain or implement office and emergency service electronic data systems. What little gets done will slow or completely stall the timely implementation of fire inspection permit revenue systems and the transition to a new dispatch system.

Recommendation #8: Technology Plan: The Fire Department needs a technology plan to:

Automate end-to-end the inspection, permitting and revenue programs to City systems.

Be sure the next generation dispatch and fire records systems meet the need for and provide management information and metrics with which to manage the Department's programs.

Maintain and keep technology replacement programs current for radios and field service technologies.

Appropriately staff the agency's needs.

Recommendation #9: Technology Position: As funding permits, create a civilian position – *Technology Officer*. This position is to plan, direct and provide Quality Assurance for all computer systems, e-records, fire radios, and station alerting systems. The Technology Officer will coordinate regional technologies on radios and mutual aid. Class/comp for the position is equivalent to 2nd tier IT support staff.

9.1 Immediately fund on overtime at a Fire Captain rate, 8 hours per week for technology support and new dispatch system work.

3.3.2 Public Education

The remaining fire headquarters staff now handles public education on a catch as catch can basis. The loss of the second Administrative Captain position hurt this function. Maintaining and updating the City's emergency plan, plus the training of Citywide staff and public outreach were transferred to the City's Policy and Management Office. However, there was no staffing left for fire prevention education. There is one area where public education is occurring, that is special events. The Fire Department participates in the planning and code compliance of between 300 and 400 special events each year. These events allow the Department to provide one-on-one education with the event attendees on occasion. Aside from these activities, the Beverly Hills Fireman's Association does what little public education now exists, which is a private entity.

Available fire company on-duty hours have been shifted to wildland fuel abatement and commercial building inspections.

As the economics permit, the City needs to consider placing renewed emphasis on public fire education. The programs need a re-design with a cost-effective or cost-recovery delivery. This can include the use of civilian, non-sworn positions. Since the events of 9/11, a considerable, trained talent pool has developed that can manage these programs without using fire officers. The City should consider the expanded use of cadets and older, retired volunteers for program delivery to residents and guests. The City should consider expanding the special events outreach to all the hospitality industry with a disaster training/preparedness program for their staffs to self help guests. The City should also consider a small training effort for the firefighters who assist at special events to make them more effective as ad hoc fire educators. The City should use cost-recovery fees possibly for such a program.

Finding #16: Budget reductions have reduced public education programs almost to the point of extinction. This cannot continue for very much longer and have Beverly Hills capable of sharing the burden of self-help and having a fire safe community.

Recommendation #10: Public Education: The City, as funds permit, needs to redesign and fund the delivery of fire prevention education. This program does not have to be done by Fire Department sworn officer position. The public education programs deserve emphasis as a key Fire Department service to the community, to include the requisite staffing hours and media material resources for public outreach.

3.4 FIRE PREVENTION – FIRE INVESTIGATION – WILDLAND FUEL MANAGEMENT PROGRAMS

Fire prevention includes any activity that decreases the incidence and severity of uncontrolled fire. Usually the methods used by the fire service focus on inspection, which includes engineering, code enforcement, public information, public education, and fire investigation. Preliminary and subsequent fire investigations of all fires are essential to understand the sources of the community's fire problems. Accidental fires may reveal weaknesses in the codes, in the building inspection process, or in other aspects of processes. Suspicious fires may reveal an arson problem.

Once a building is completed, the responsibility for oversight of its use and maintenance throughout the remainder of its life switches from the Building Official to the Fire Marshal. The fire code is then used as the document that ensures that a proper level of fire and life safety exists in the building throughout the remainder of its use. All businesses that are not required to be inspected on an annual basis should be inspected every two to three years.

General Needs:

- ◆ Is there an adopted fire code and staffing plan to meet the needs of new construction, existing commercial occupancy inspection and public education?
- ◆ Are inspectors trained?
- ◆ Are fires investigated?
- ◆ Does the fire investigation system coordinate with law enforcement to bring about the appropriate arrests and convictions in arson cases?
- ◆ How are on-going fire code safety inspections managed?
- ◆ How does the Department handle hazardous materials code enforcement?
- ◆ Is there an appropriate fee schedule for fire prevention activities to the business community?

Observations:

- ◆ The Department and City have adopted and continue to update the appropriate Model Building and Fire Codes. The City has adopted a stricter than code complete automatic fire sprinkler requirement for new and substantially remodeled buildings.
- ◆ The Department has a fire prevention program staffed with:
 - 1 – Fire Marshal
 - 1 – Deputy Fire Marshal (Fire Captain rank)
 - 2 – Fire Inspectors (non-sworn)
 - 1 – Plan Checker
 - 1 – Administrative Clerk II

The Fire Marshal, in addition to providing leadership for the Bureau, is also the back-up contact for the 250-300 special events in the City each year. These events can range from a large party with 300 to 400 guests to a visit by foreign royalty or the President, or as happened on one occasion, both at the same time. As a consequence of this, the Bureau has become more

politically sensitive. The Fire Marshal also does any arson investigations, working with the police department. He reports to both the Fire Chief and Deputy Fire Chief.

The Deputy Fire Marshal spends most of his time on planning special events. These consume at least 2,666 hours per year in just inspections and on-site staffing by inspectors and firefighters. In addition to this, the Deputy Fire Marshal has to work with other public agencies and private sector parties in permitting and planning each event. In some cases, the events pay for the planning and required extra staffing. This captain's position is rotated as a 40-hour assignment from a station shift assignment for two years as a management and leadership development opportunity. Most of the incumbents also get an opportunity to attend fire prevention training courses.

The Plans Checker is a non-sworn position. The Plans Checker is International Code Commission certified and has attended the required Office of State Fire Marshal courses. The Plans Checker can also conduct inspections.

There are two non-sworn inspectors, who are responsible for inspecting all new and remodel work, restaurant range hoods, alarms, public schools and the 34 high-rise buildings in Beverly Hills. The inspectors also respond to citizen complaints.

The Administrative Clerk II maintains the reports and records for the bureau, inputs data into the finance system, inputs data into Excel spreadsheets and is currently switching some records management to the *Firehouse* Records System. The eventual goal is to have a single data entry point.

Another component of the fire prevention program that cannot be overlooked is the engine company inspection program. Their focus is on small businesses. However, this does not operate in a vacuum. Often engine company inspections require follow-up by one of the inspectors and in difficult cases, the Fire Marshal. The engine companies also are involved in doing brush inspections in the hilly areas of the City where wildland fire is a threat.

There are many positives to the City's Fire Prevention programs and they are best practice leaders:

- ◆ Adoption of stringent automatic fire sprinkler codes for all buildings, including homes;
- ◆ Recent adoption of wildland fuel reduction requirements and inspection programs;
- ◆ Restoring commercial business inspections;
- ◆ While regulating special events, understanding that each event is unique and, with careful adaptations to the codes, can safely allow the desired event;
- ◆ A constant emphasis on training to keep up with new issues and codes;

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- ◆ Emphasis on customer service and paying close attention to the needs of citizens, business owners, and visitors to Beverly Hills who are in need of assistance;
 - ◆ The bureau maintains good working relationships with other City Departments.

The bureau faces a number of challenges, some of which can only be solved with additional staffing; some require changes in processes and relationships:

- ◆ There is a gap in the public's understanding of the prevention bureau functions and importance. There is a serious need to establish an organized system to follow fire protection systems maintenance and certification in businesses;
- ◆ There is a need to get a records management operating efficiently for billing, State Fire Marshal-mandated inspections and to keep track of all water-based extinguishing systems throughout the City;
- ◆ Engine companies assist with inspections, but there is not enough time for them to complete all of their annually assigned inspections in a year;
- ◆ More needs to be done to smooth out coordination with the Building Department in regards to how plans are submitted and picked-up by the applicant.

Even given Beverly Hills' unique national and international character, the quantity and staffing impact of the special events is far more than most probably notice, one event at a time. In the most recent 12-months, there were 281 events requiring 2,666 hours at the events. At a 40-hour workweek and a work year of 2,080 hours, these events are consuming the equivalent of 1.25 FTE positions.

Finding #17: The Fire Prevention Bureau is trying to be all things to all people and consequently is often operating in a semi crisis mode. Between the Fire Marshal and the Deputy Fire Marshal more than one full-time equivalent employee in the Bureau works solely on special events. Currently, the inspectors complete only 70 percent of their assigned inspections. The City has a brush ordinance that depends on line firefighters for inspections without a thought out electronic records program. There is no formal, funded, public education program remaining. Engine companies try to fill in the gaps, but they also have to take care of training, emergency responses and apparatus and station upkeep.

Recommendation #11: Determine Fire Prevention Priorities: The Fire Chief and Marshal need to do some serious triage of what the Bureau does, including what it must do by statute; what it needs to do because of fire history, threat to the public, economic importance and other factors; and what it would like to do. For example, it may not be able to do an on-site inspection of every business every year; it may only be able to do that every third year with mailed, self-inspections in the intervening years. There may be one or more categories of businesses that are routine violators and may need quarterly inspections. With the entertainment industry such a large part of Beverly Hills' civic life, the special events are consuming resources away from code inspections, which make the community safer.

Recommendation #12: Special Event Staffing: The City should consider doing an economic analysis of the special event hours, costs and revenues. While some special event staffing has to be firefighters on overtime, perhaps an additional non-sworn inspector could be hired do the pre-event planning and some event stand-by work within the existing revenue. This would return one inspection staff position to commercial and multi-family building code enforcement and permit programs.

Recommendation #13: Deputy Fire Marshal: The City should re-evaluate the cost-effectiveness of a Fire Captain, Deputy Fire Marshal position on a rotation to fire station duties. Given the technical nature of the fire codes and the heavy special event burden on fire prevention, which takes time to learn, use of a non-sworn civilian position could be less costly and allow for tenure and a career ladder for the fire inspectors. When a Fire Captain retires, replace the Deputy Fire Marshal with an "Inspector II" position for advanced FP work and inspector scheduling supervision, similar to a utilities lead worker position.

3.5 FIELD OPERATIONS SYSTEMS

The operations system covers a multitude of activities. For the purposes of this plan, the consultant interviewed staff; inspected the apparatus, equipment and facilities; examined some documents; and conducted “listening sessions” with station personnel and chief officers. The consultant reviewed the daily maintenance reports, training records and other reports and records provided by the Fire Department for this study. The consultant examined the readiness of fire apparatus and equipment, and pre-fire planning program, conducted a thorough appraisal of the training program and apparatus maintenance programs. All of these are important components of a fire department operation and critical to ensuring that needed resources can respond quickly and effectively.

3.5.1 Apparatus and Equipment Readiness

Fire apparatus needs to be properly maintained in order to get there safely, operate effectively and return to quarters ready for another assignment. Considering that a fire engineer is entrusted with a 35,000-pound vehicle at 45 miles per hour on city streets and occasionally through red lights, should cause city and fire officials to make doubly sure that the maintenance, as well as the training program, meets all applicable legal and best practice standards.

The fire service generally groups fire apparatus into two categories: (1) engine companies, whose primary functions are to pump and deliver water and perform basic firefighting functions, including search and rescue; and (2) truck companies, whose primary functions are forcible entry, ventilation, search and rescue, aerial operations for water delivery and rescue, utility control, illumination, overhaul and salvage work. Other types of apparatus include water tenders, whose main function is to carry large quantities of water, squads or rescue companies that carry a variety of rescue and emergency medical equipment, medic units or ambulances, command vehicles, and other auxiliary apparatus.

There are two basic standards that the National Fire Protection Association has disseminated that apply to fire apparatus: NFPA 1901 *Standard for Automotive Fire Apparatus*, and NFPA 1906 *Standard for Wildland Fire Apparatus*. In addition to these standards having application for the development of purchase specifications, they have performance standards that are useful for evaluating in-service apparatus. The federal government has issued motor vehicle safety standards that are applicable to fire apparatus. The Federal Department of Transportation enforces these standards.

To be effective, fire apparatus must be of proper design, well equipped with the proper hose, appliances, tools, ladders, and paraphernalia necessary to perform the complex work of firefighting, rescue, emergency medical, and public service type assignments.

There should also be a system of testing, maintenance, and repair to ensure a high state of readiness of apparatus and critical equipment. In 2000, NFPA issued NFPA 1915 *Standard for*

Fire Apparatus Preventative Maintenance Program, which defines the minimum requirements for a fire department preventative maintenance program. Under this standard, the personnel who conduct the preventative maintenance program should meet NFPA 1071 *Standard for Emergency Vehicle Technician Professional Qualifications*. This standard defines the minimum job requirements an emergency vehicle technician should possess. These include the ability to diagnose, maintain, repair, and test the functions of the apparatus.

NFPA issued a Tentative Interim Amendment (TIA 09-1) to NFPA 1901 *Standard for Automotive Fire Apparatus*, 2009 Edition, which slightly changed the wording for the annual pump testing required of all fire department pumping apparatus.

Current Beverly Hills Apparatus Inventory

Radio Number	City Equipment Number	Chassis Manuf	Build-up Manuf	In-service Year	Capacity	Status	Replacement Cost
E-1	809	Pierce	Pierce	2005	1510gpm	Front-line Structure Engine	\$768,480
E-2	811	Pierce	Pierce	2005	1510gpm	Front-line Structure Engine	\$768,480
E-3	812	Pierce	Pierce	2005	1510gpm	Front-line Structure Engine	\$768,480
E-5	804	Pierce	Pierce	1998	1510gpm	Front-line Structure Engine	\$487,200
E-6	807	Pierce	Pierce	1992	1500gpm	Reserve Structure Engine	\$436,092
E-7	805	Pierce	Pierce	1994	1500gpm	Front line Structure Engine	\$497,280
E-8	806	Pierce	Pierce	1994	1500gpm	Front line Structure Engine	\$497,280
T-4	821	Pierce	Pierce	2010	100' Aerial	Front-line Aerial Truck	\$1,344,890
T-9	820	Pierce	Pierce	1998	100' Aerial	Reserve Aerial Ladder truck	\$1,929,585
USAR-1	825	Spartan	SVI	2004	USAR Type-1	Specialty USAR Vehicle	\$1,120,959
Batt.1	831	Chevrolet Suburban	911	2008		Front-line Command Car	\$120,750

Radio Number	City Equipment Number	Chassis Manuf	Build-up Manuf	In-service Year	Capacity	Status	Replacement Cost
Batt.2	830	Chevrolet Suburban	911	1996		Reserve Command Car	\$120,000
Resc-1	841	Freightliner	Wheeled Coach	2007		Front-line EMS Rescue	\$288,549
Resc-2	842	Freightliner	Wheeled Coach	2007		Front-line EMS Rescue	\$288,549
Resc-3	848	Freightliner	Wheeled Coach	2001		Reserve EMS Rescue	\$182,710
Resc-4	847	Freightliner	Wheeled Coach	1997		Reserve EMS Rescue	\$160,207
FM-1	837	Chevrolet Tahoe	911	2007		Staff, Auxiliary Command car	\$43,243
DC-1	838	Chevrolet Tahoe	911	2007		Staff, Auxiliary Command car	\$43,243
FM-2	852	Ford Crown Victoria		2007		Deputy Fire Marshal	\$30,728
Insp-1	851	Dodge Caravan		2005		Fire Inspector vehicle	\$27,360
U-3	853	Dodge Caravan		2008		Suppression Pool Car	\$31,446
Insp-2	857	Ford Crown Victoria		2004		Fire Inspector vehicle	\$33,000
U-1	860	Dodge 200 Pick-up		2001		Suppression Utility P/U	No data
U-2	861	Ford F-250 Pick-up		2007		Suppression Utility P/U	\$43,364
TO-1	870	Ford Crown Victoria		2006		Training Officer Vehicle	\$40,585

Citygate completed a thorough review of the program with Greg Gomez, the mechanic assigned to the Fire Department, although he is an employee of the public works department. In addition, Citygate received and reviewed the SWOT from Dwight Simpson, the C Shift Battalion Chief who has overall management responsibility for apparatus maintenance for the Department.

While the full-time fire mechanic stated that the Department was compliant with the applicable NFPA Standards that apply to fire apparatus and their maintenance, the Battalion Chief in charge stated that the City had not adopted them as standards. Adoption of these standards, or at least

citing them in the Department's documents, would ensure that the program at least met the intent of the standards. Meeting or exceeding these standards ensures that the fire apparatus is reliable and safe to operate.

The California Vehicle Code requires in the Employer Pull Notice Program that all who operate motor vehicles with a commercial license, including a Class B Firefighter license, participate in the program. The employer obtains the driving record of new employees 30 days before they start to operate and all employees every 12 months. (CVC Section 1808.1 Employer Notification.)

The preventative maintenance program consists of daily inspections (The Federal Motor Carrier Safety Regulations (49 CFR, Part 396.13) state "Before driving a motor vehicle, the driver shall be satisfied that the motor vehicle is in safe operating condition...") and weekly inspections in the station, done by the operator. The mechanics do the other inspections in the shop. The daily operator inspections appear to satisfy that requirement.

The formal program is that every four months and annually the apparatus comes into the shop for inspection and any deferred items. The station personnel assist with these inspections. While the Department does a thorough inspection every four months, it is unclear if this is compliant with the required motor carrier 90-day inspections. The mechanic was vague about this issue; this needs Department follow-up. According to the Vehicle Code 34505.5a, which in part states, "Every motor carrier operating any vehicle described in subdivision (a), (b), (e), (f), or (g) of Section 34500, except those vehicles exempted under Section 34501.12, shall, as a part of the systematic inspection, maintenance, and lubrication services required of all motor carriers, require the vehicle or vehicles for which it is responsible pursuant to Section 34501.12 to be inspected at least every **90 days**, or more often if necessary to ensure safe operation. Vehicles, which are out of service for periods greater than 90 calendar days, do not require an inspection at 90-day intervals if they are inspected before operation on the highway."

The Fire Department and the City have an established apparatus replacement program commonly known as Fund #49. A separate fund, #40, saves for the replacement of capital equipment. Replacement funds are based on the estimated net replacement cost of the allocated asset over the estimated useful life, and are appropriately utilized by the City to reduce budgetary swings in the user's department for periodic capital replacement. In addition to replacement of worn out fire apparatus and equipment, some becomes obsolete as updated and improved equipment becomes available. Having such a replacement fund is considered a best practice as the fire apparatus alone in the current plan have a purchase cost value of \$6.1 million dollars. The City has to save and plan for these replacements in a timely manner.

Finding #18: Beverly Hills Fire Department fire apparatus maintenance program meets most of the requirements for a top-notch program. The City purchases first class apparatus as a starting point. Based on a cursory review of the apparatus, the apparatus appeared to be well cared for and properly equipped. A replacement fund plan program exists.

Recommendation #14: Vehicle Code Review: The Department should complete a side-by-side review of the NFPA best practices and the Vehicle Code requirements to ensure that the BHFD Apparatus Maintenance Program is consistent and 100 percent in compliance.

One of the unusual aspects of the BHFD apparatus maintenance program is the use of the firefighter off the ladder truck at headquarters as the shift “master mechanic” to assist in the shop. BHFD has managed its own fleet maintenance program since the earliest years of the Department. It provides the opportunity to train and utilize firefighters in routine maintenance and repairs. This develops their skills as equipment operators and problem troubleshooters and expands their own capabilities for field repairs as well as afterhours/weekend repairs and servicing at minimal additional cost to the City (i.e., Master Mechanic bonus of 5.5 percent for three members). The three “master mechanics” and the public works mechanic are all sent to the Fire Mechanics Academy every year. The obvious benefit of this arrangement is less down time and more timely repairs than would occur with another agency or program.

The fire mechanic has employee representation responsibilities and this occasionally affects his availability. With just one mechanic, this also plays into the City’s vehicle maintenance division’s perception that the program would be more effective at their facility. Moving to the centralized shop might alleviate the mechanic’s absences, but the central shop has to balance the needs of the Fire Department against other agencies.

While there might be some cost savings associated with having fire apparatus repaired at the City shops, fire apparatus is infinitely more complex than most of the other equipment the City uses. The electrical, hydraulic and pumping systems are all specialized and require mechanics with particular certifications and skill sets. The California Fire Chiefs Association Mechanics Section sponsors an annual mechanics academy in Sacramento. BHFD Mechanics and engineers assigned to the shop should attend this every year.

The station master mechanic spends the bulk of his/her day working in the shop. It is a required assignment for a firefighter assigned to the Ladder Truck.

One question that arises with the use of an engineer in a position, which is essentially a mechanic's helper, at least in the beginning of the two-year assignment, is whether this is an appropriate use of the engineer position considering the cost of that position compared to the cost of a bench mechanic. The advantage for the Department is that the engineers develop a real understanding and appreciation for their apparatus and they are available 24/7 to make some repairs and to do some serious trouble shooting before calling a mechanic back to make an emergency repair. While it is a required assignment for all engineers, being an engineer is not a required assignment for promotion to company officer.

Finding #19: The fire engineers are not only operators of the apparatus; they repair it, which gives them a special interest in its care. Some of the fire captains have apprenticed in the same system and know what is involved in maintaining the vehicles they now entrust to the operators.

19.1 The shop is well equipped for the types of work they do. For heavier repairs, they utilize the manufacturer's authorized shop in Ontario California.

19.2 Based on a cursory review of the apparatus at Station #1, the apparatus appeared to be well cared for and properly equipped. BHFD's repair order process is one of the most well-defined Citygate has seen.

19.3 While the Beverly Hills fire apparatus repair system may be unusual for a smaller agency, *it appears to be effective, safe and relatively economical.*

Recommendation #15: Fire Apparatus Repair: It appears to Citygate that the current fire apparatus repair system works well. From the current data available, it is uncertain that centralizing the repairs at the City's shops will actually save money and improve or maintain quality. Without more detailed analysis of the records, costs and mechanic certifications of both shops, Citygate cannot recommend a change without further detailed study by those most familiar with the City shops operation.

3.5.2 Safety and Risk Management Programs

Firefighting and emergency medical service is a risky business. The goal of the risk management program is to get firefighters home safely at the end of each shift.

Among the necessary elements for a fire department is a safety orientation for new employees, a hazard communications system for employees to communicate hazards to supervisors, the Cal-OSHA process for post injury reviews, the required annual report of injuries, and a standard for safety work plans.

While NFPA has a number of Standards that focus to one degree or another on safety issues, NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program* and NFPA 1501 *Standard for Fire Department Safety Officer* are the umbrella documents and they model the kind of umbrella approach that every fire department should take in regards to the safety and health of firefighters, which in turn, impacts the safety and health of the public they serve.

NFPA 1500 states, “There must be a fundamental behavioral change in how fire fighters and fire departments address fire service occupational safety. In turn, they must continue to educate their members and, most importantly, the administration and citizens to what the hazards are of the fire fighting profession. The utilization and implementation of this standard can go a long way in reducing the staggering statistics involving fire fighter fatalities and injuries, *but only if given the training and resources to do so.*” [Emphasis added]

NFPA 1500’s Component Analysis Chart recommends the fire department’s risk management plan contain the following elements:

- ◆ Fire department organizational statement
- ◆ Risk management plan
- ◆ Safety and health policy
- ◆ Roles and responsibilities
- ◆ Occupational safety and health committee
- ◆ Record keeping
- ◆ Incident safety and health officer
- ◆ Laws, codes and standards
- ◆ Training and education
- ◆ Accident prevention
- ◆ Accident investigation, procedures and review
- ◆ Record management and data analysis

- ◆ Apparatus and equipment
- ◆ Facility inspection
- ◆ Health maintenance
- ◆ Liaison
- ◆ Occupational safety and health officer
- ◆ Infection control
- ◆ Critical incident stress management
- ◆ Post-incident analysis.

Finding #20: In Beverly Hills safety is mentioned and emphasized throughout the Fire Operations Manual and other operational documents. One means or another covers many of the items listed above. What is missing is a comprehensive approach to fire department safety as envisioned in NFPA 1500 and the accountability reporting measures and tools to verify compliance, which are essential documents should an employee injury occur, especially when CAL OSHA has primary investigatory responsibility.

Recommendation #16: Safety Program: Safety Programs are another example of where the lack of a designated Safety and Training Officer is being felt. In Beverly Hills' case, the Safety and Training Officer would have to re-start building an NFPA 1500 compliant program. Many of the pieces are there already and in some instances, it is a matter of organization. It is a daunting task, but an excellent place for the Department to start is with NFPA 1500 Annex B Fire Service Program Occupational Safety and Health Program Worksheet. This twenty-five page document lists every component of a top-notch program and guides the Department through an analysis of compliance and the steps necessary to achieve compliance where it is lacking. This first step will lead to eventual full compliance.

3.5.3 Technical Rescues

In addition to responding to fires and medical emergencies, fire departments are normally first responders to other types of emergencies that require immediate response, technical training and specialized equipment. These services include high angle and low angle rescue, vehicle extrication, water rescues, confined space and trench rescues, aircraft crash rescues and hazardous materials responses. There are a number of requirements for training and certification governing departments that engage in these activities. Each of these operations involves special kinds of risks and some are very dangerous if not performed correctly. On the other hand, with proper training and following proper procedures, they can all be performed competently and safely. The key is that the Department must follow the correct protocols every time.

The Federal Government, Cal OSHA and the National Fire Protection Association have all developed standards that apply in various circumstances. These standards form the basis upon which the training program in these specialties is built.

Among them are the Code of Federal Regulations (CFR); NFPA 1006 *Standard for Rescue Professional Qualifications*; NFPA 1670 *Standard on Operations and Training for Technical Search and Rescue Incidents*; NFPA 471 *Recommended Practice for Responding to Hazardous Materials Incidents*; and NFPA 472 *Standard for Professional Competencies of Responders to Hazardous Materials Incidents*.

The most basic standard is NFPA 1006 *Standard for Rescue Technician Professional Qualifications*. This standard forms the basis for the qualifications of an individual assigned to perform certain technical rescue functions. The companion to this standard is NFPA 1670 *Standard on Operations and Training for Technical Search and Rescue Incidents*, which forms the basis of a training program for firefighters who are called upon to perform technical rescue or who are part of a technical rescue team.

Confined Space training is at three levels: Confined Space Awareness (no entry), 8 hours; Confined Space Attendant (assist with entry rescuers), 24 hours; and Confined Space Rescue, 40 hours. It is important that those doing entering and attempting rescue have completed all three levels.

A code set similar to that for technical rescue applies to hazardous materials response. NFPA 471 *Recommended Practice for Responding to Hazardous Materials Incidents* delineates how a department will respond to a hazardous material release. NFPA 472 *Standard for Professional Competencies of Responders to Hazardous Materials Incidents* provides the basis for the training program for hazardous materials first responders.

Hazardous Materials Training at both the first responder operational level as well as technician level has refresher requirements.

Beverly Hills’ grant-funded Urban Search and Rescue (USAR) program and vehicle provide for physical rescue response, including extrication, confined space rescue, trench rescue, collapse rescue, technical search and emergency building shoring. The USAR program and vehicle are an integral component of the Beverly Hills Fire Department’s full service commitment to the local community. The program is registered with CAL EMA as a Type 1 “Heavy” USAR strike team regional asset. Grants funded the vehicle, its equipment and the training of members.

Beverly Hills Fire Department operates the Urban Search and Rescue Unit on an as needed basis. The Unit is certified at the Type 1 level and approximately ten members on each shift are certified to work with all the equipment on the unit. With its dependence on teamwork, use of tools, and working in high places, technical rescue is a natural adjunct to the fire service. That being said, practitioners need to have additional skill sets to operate effectively and safely. Technical rescue is quite dangerous and the literature has many examples of rescuers becoming victims themselves when they practiced outside their training. The Urban Search and Rescue (USAR) program and vehicle provide for physical rescue response, including extrication, confined space rescue, trench rescue, collapse rescue, technical search and emergency building shoring. The USAR program and vehicle are registered with CAL EMA as a Type 1 “Heavy” USAR strike team regional asset.

Technical rescue training in all its forms provides a higher level of basic firefighter core skills. Additionally, these skills are cross-trained among all suppression personnel, which allows for “first on scene” initial assessment and initial actions that can be performed prior to the arrival of the complete certified USAR team. The on shift USAR team is cross-staffed among all of the Beverly Hills Fire responding apparatus with about ten firefighters per shift.

When the USAR unit is activated simultaneously, an expanded function incident command system (ICS) is also activated. Ramping up to an expanded ICS structure is much easier if these ICS skills are used routinely on small incidents.

Beverly Hills Fire Department Urban Search and Rescue Unit with Tools and Equipment Displayed



Currently, the USAR unit is underutilized, yet with its inventory of specialized equipment it could be a useful addition to many of the Department's operations. This situation could be remedied by adding a USAR component for structure fires, physical rescues, and auto extractions cross-staffed by Engine #5 and Rescue personnel, particularly at night.

Currently, Engine #5, whose run statistics indicate low utilization, is normally assigned to Rapid Intervention Crew (RIC) duties. When they arrive on scene, they utilize the remaining equipment carried on Truck 4. The USAR unit has the correct configuration for this type of deployment and additionally has SCBA tank filling capability and extensive lighting for nighttime operations. The USAR unit also has all the equipment needed for auto extrication.

The Department has three manuals outlining the training and practices associated with technical rescue. These documents are comprehensive and worthy of some brief discussion.

The Trench Rescue Manual comprehensively describes the training and procedures to be followed when effecting a rescue of a victim in a below ground trench where the sides have collapse and trapped the person or persons. Included in the manual is a comprehensive

discussion of the legal requirements involved in trench rescue, which can be hazardous for the rescuers as well as the victim(s).

The Fire Department Operations Manual describes the response practices for Hazardous Materials incidents. It describes three levels of response, two within the City's capabilities and level three requiring assistance through mutual aid. All of the chief officers meet the requirements to be hazardous materials incident commanders.

The Confined Space Manual comprehensively describes the training and procedures to be followed when operating in a confined space. (A confined space is defined as large enough and is so configured that an employee can bodily enter and perform assigned work; and has limited or restricted means of entry or exit; and is not designed for continuous employee occupancy.) Rescues in confined spaces are notoriously dangerous. The requirements both in training and in practice are rigorous and defined by law. The legal requirements are cited in this manual.

There is no specific manual on high angle/low angle rescue (rope rescue involving other specialized gear).

Finding #21: During Citygate's review of the Technical Rescue SOPs, we found occasional reference to best practices, but they are lacking consistent reference to many of the best practices. However, that is not to say that the SOPs are poorly written or do not meet the general conditions normally found in compliant documents. They are clearly written and appear to be similar to SOPs in use throughout the fire service.

Recommendation #17: USAR SOP Review: This is another example of where the lack of a designated Safety and Training Officer is being felt. Making sure that operations guidelines meet current best practices and legal requirements is one of the important tasks assigned to Training Officers. As time and resources permit, review the SOPs and compare them with the appropriate best practices. Edit them, as needed to ensure compliance. Notate in the documents that they are compliant with the particular edition of the appropriate best practice. As these best practices are revised and updated, update the Department's SOPs.

SECTION 4—FISCAL IMPACTS

Section Intent: This chapter first presents order-of-magnitude costs identified for the recommendations contained in this study. These are sufficient to permit the understanding of costs in current dollars so future long-range fiscal planning for fire and other City needs can occur when the economy recovers. Then, illustrative general timelines for implementing improvements are demonstrated.

Detailed costing is not possible until City leadership approves the audit recommendations and sees enough of an economic recovery to plan for fire service enhancements. Even when the economy recovers, the City will likely have sustained damage to its existing service levels and fiscal reserves. As such, Fire Department needs may or may not be of sufficient priority to receive funding early in a recovery. The Council will have to understand the entire City’s under-met needs and make the appropriate fiscal allocation decisions.

4.1 COMPONENT COSTS

Position (Salary & Benefits)	Annual Cost
16 hours per week additional clerical support for fire prevention (\$24/hr X 16 hrs/wk X 50 weeks)	\$19,200
8 hours per week, 50 weeks, for Fire Captain technical project support	\$30,000
1 Battalion Chief, Training Officer	\$250,045
.5 Administrative Clerk II Position	\$39,000
1 Technology Specialist Position	\$101,450
1 Public Education Position	\$81,640

If the City decides to add these enhancements as recommended by Citygate, the table below provides an *illustration* or sample of how this might be phased in over several years and the associated annual estimated cost in FY 10-11 dollars:

Sample Phasing and Additional Cost Plan

Phase	Item	Ongoing Operating Cost	One Time
One	Detailed review of audit and strategic plan	Staff Time	
	Reconfigure Staffing to Enable Paramedic Rescue Ambulance #3	No Cost	
	Add 16 hrs/week for fire prevention clerical support <i>(Does not continue in Phase II)</i>		\$19,200
	Add 8 hrs/week Fire Captain technology support		\$30,000
	Near term totals:	0	\$49,200
Two	Add one Battalion Chief – Training Officer	\$250,045	0
	Increase office support staff (clerical) by a minimum of .5 positions	\$39,000	0
Three	Add one Technology Support position	\$101,450	
	Add one Public Education position	\$81,640	
	Outer Year Totals:	<u>\$472,135</u>	0
<i>Long Term</i>	Design and locate a modest training facility	\$75,000	<i>Unknown</i>

SECTION 5—RECOMMENDED SOLUTIONS AND PHASING PLAN

5.1 DEPLOYMENT PLAN FINDINGS AND RECOMMENDATIONS

The City of Beverly Hills has adequate fire crew coverage, partially because of its automatic aid relationship with its neighboring fire departments. Citygate’s deployment study findings *do not* recommend that Beverly Hills needs additional fire stations, but can better deploy the existing staffing to field a 3rd Paramedic Rescue Ambulance when it is needed.

Citygate’s deployment findings for Beverly Hills as noted in Section 2 are:

- Finding #1:** The City does not have a complete and current best practices designed fire deployment measure adopted by the City Council that includes a beginning time measure starting from the point of dispatch receiving the 911 phone call, and a goal statement tied to risks and outcome expectations. The deployment measure should have a second measurement statement to define multiple-unit response coverage for serious emergencies. Making these deployment goal changes will meet the best practice recommendations of the Center for Public Safety Excellence (formerly the Commission on Fire Accreditation International).
- Finding #2:** The City has adopted best practices building and fire safety codes to lessen building and wildland fire risks, along with structural code requirements to improve earthquake safety. Considered as a total package, the City is one of, if not the most progressive communities for fire safety regulations that Citygate has observed.
- Finding #3:** The City’s current daily firefighter and command chief unit staffing at 25 provides the City the “weight” of response to handle one serious event or two modest events without being immediately dependent on mutual aid. This level of response capacity is very appropriate to the potential and unique risks found in Beverly Hills, which from only a measure of population or type of actual emergencies is not comparable to a similarly sized suburban city in terms of risks to protect.
- Finding #4:** The City is substantially developed enough in terms of population density and building development to desire an urban level of first-due fire unit coverage, which is 4 minutes of travel time for the best possible outcomes.
- Finding #5:** The City is very difficult to cover efficiently with a cost-effective number of fire stations due to the non-grid street network and very difficult hillside topography in some areas.

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- Finding #6:** Given the difficult to serve terrain and the coverage at the 4th minute of travel in the high call volume areas, the current locations and quantity of three fire stations is the most cost effective model.
- Finding #7:** To increase coverage at the 4th minute of travel in the hills would require a 4th fire station. Given the modest number of calls for service in these lighter population and call for service density residential neighborhoods, Citygate does not find that adding another station would be cost effective. Even if another station were added at the base of the hills, the upper areas would never receive 4-minute travel coverage 90 percent of the time from either Station #2 or a new station.
- Finding #8:** With a Citywide fire/EMS incident first-due unit performance of 6:20 (minutes/seconds) at 89.5 percent, the overall current station and automatic aid system is delivering a first unit **better than** a Citygate and national recommended best practice goal point of 7 minutes, 90 percent of the time.
- Finding #9:** With a Citywide travel time measure of 3:50 (minutes/seconds) at 89.5 percent, the current station placement delivers travel times to the majority of the calls **faster** than the NFPA 1710 recommendation of 4 minutes travel time. Such travel time performance also is consistent with what the ISO prefers in a Class 1 department.
- Finding #10:** With a Citywide First Alarm delivery of a 3rd unit by the 11th minute from the 911 call, 87.5 percent of the time, the current station system comes close to national and Citygate best practice recommendations. Given the travel time challenges in the hillside areas, a three-station system cannot improve on this measure. Given about 9 serious building fires per year, and few of these in the District #2 hillside areas, there is not a compelling need for a 4th fire station.
- Finding #11:** The simultaneous emergency call for service rate of 32 percent for two incidents at once is not a significant issue in the near term, except for the pattern of need being mostly for a 3rd paramedic ambulance at peak hours of the day and that mutual aid from LA City or County may not always be *immediately* available.
- Finding #12:** The City benefits from the mutual aid regional response system. While this system cannot replace existing City stations or units, the City should continue to participate in this valuable support system for simultaneous calls for service and multiple-unit serious emergencies.

Citygate's recommendations are designed to improve these issues *as fiscal resources* allow. Based on Citygate's above findings and the national best practices outlined in this study, Citygate makes the following recommendations regarding fire station and crew deployment:

Recommendation #1: Deploy a 3rd Paramedic Ambulance: Transfer a paramedic firefighter from the Ladder Truck at Station #1 to Engine #2, thus making Engine #2 a full Advanced Life Support (ALS) unit with two paramedics per LA County EMS Agency requirements. The firefighter from Engine #2 will be transferred to the Ladder Truck. For ambulance calls in Engine #2's District or for a 3rd ambulance request citywide, dispatch BLS Rescue Ambulance #3 from Station #1 using Engine #5's 2-person crew and also send Engine #2 with its paramedics.

With these moves, Engine #2 will have two paramedics per day and can cross-staff the ambulance when a 3rd paramedic ambulance is needed, *within existing staffing and costs*.

Recommendation #2: USAR Unit Use: For all Structure Fires and Technical Rescue incidents, the USAR Heavy rescue unit should be immediately dispatched with the existing two-person crew.

This means that Engine #5 will only be sent when other engines are not available, or every single City engine is needed for maximum pumping capacity at large scale fires.

When any serious auto accident or technical rescue incident occurs, the USAR unit and the Ladder Truck are to be dispatched, thus sending an effective technical rescue team of 7-firefighters.

Recommendation #3: Adopt Revised Deployment Measures: The City should adopt revised performance measures to direct fire crew planning and to monitor the operation of the Department. The measures should take into account a realistic company turnout time of 2 minutes and be designed to deliver outcomes that will save patients medically salvageable upon arrival and to keep small but serious fires from becoming greater alarm fires. Citygate recommends these measures be:

3.1 Distribution of Fire Stations: To treat medical patients and control small fires, the first-due unit should arrive within 7 minutes, 90 percent of the time from the receipt of the 911 call. This equates to 1-minute dispatch time, 2 minutes company turnout time and 4 minutes drive time in the most populated areas.

3.2 Multiple-Unit Effective Response Force for Serious Emergencies: To confine fires near the room of origin, to stop

wildland fires to under 3 acres when noticed promptly and to treat up to 5 medical patients at once, a multiple-unit response of at least 19 personnel should arrive within 11 minutes from the time of 911 call receipt, 90 percent of the time. This equates to 1-minute dispatch time, 2 minutes company turnout time and 8 minutes drive time spacing for multiple units in the most populated areas.

5.2 NON-DEPLOYMENT HEADQUARTERS FUNCTIONS FINDINGS AND RECOMMENDATIONS

A fire department Beverly Hills' size needs to have a management team that is the proper size, and adequately trained and supported. There are increasing regulations to be dealt with in operating fire services, and the proper hiring, training and supervision of line employees requires an equally serious commitment to leadership and general management functions.

The organization chart shows a headquarters organization that does not currently meet the needs of a department the size of Beverly Hills. However, due to the fiscal pressures on the City, there has been greater emphasis on staffing fire companies to provide emergency response than on the needs of the management team to coordinate and lead the organization.

Citygate understands the City's fiscal situation and does not find the headquarters functions *critically* insufficient. However, the following findings and recommendations do provide a road map from which to better handle current workloads and to request additional resources as the City finds the ability to provide them. When all the following recommendations are implemented, the Department's headquarters staff will be the appropriate size for Beverly Hills.

Finding #13: The Department lacks a Safety and Training Officer and centralized focus on training and safety. Since the Department had a robust training program up until a little over a year ago, the personnel probably retain enough residual knowledge, skills and abilities to continue for a while into the future. However, at some point the same knowledge, skills and abilities will begin to degrade and emergency service performance will degrade with it. Without a designated Safety and Training Officer, the training/safety programs will not be able to succeed or meet best practice recommendations, or essential requirements on the fire service by CAL OSHA.

Finding #14: While a Fire Department Performance Audit is not set-up to do a detailed desk and workload audit of office support needs, in Citygate's experience, we have found the office support capacity out of sync with what we have seen in other fire departments of Beverly Hills' size. Moreover, the current business processes are not even fully automated or tied to City systems.

Even a modest increase in support staff hours will significantly increase headquarters staff output and citizen responsiveness. Most likely, an increase of .5 FTE for administration support is needed as soon as funding allows.

Finding #15: The Fire Department is not staffed to adequately use, maintain or implement office and emergency service electronic data systems. What little gets done will slow or completely stall the timely implementation of fire inspection permit revenue systems and the transition to a new dispatch system.

Finding #16: Budget reductions have reduced public education programs almost to the point of extinction. This cannot continue for very much longer and have Beverly Hills capable of sharing the burden of self-help and having a fire safe community.

Finding #17: The Fire Prevention Bureau is trying to be all things to all people and consequently is often operating in a semi crisis mode. Between the Fire Marshal and the Deputy Fire Marshal more than one full-time equivalent employee in the Bureau works solely on special events. Currently, the inspectors complete only 70 percent of their assigned inspections. The City has a brush ordinance that depends on line firefighters for inspections without a thought out electronic records program. There is no formal, funded, public education program remaining. Engine companies try to fill in the gaps, but they also have to take care of training, emergency responses and apparatus and station upkeep.

Finding #18: Beverly Hills Fire Department fire apparatus maintenance program meets most of the requirements for a top-notch program. The City purchases first class apparatus as a starting point. Based on a cursory review of the apparatus, the apparatus appeared to be well cared for and properly equipped. A replacement fund plan program exists.

Finding #19: The fire engineers are not only operators of the apparatus; they repair it, which gives them a special interest in its care. Some of the fire captains have apprenticed in the same system and know what is involved in maintaining the vehicles they now entrust to the operators.

19.1 The shop is well equipped for the types of work they do. For heavier repairs, they utilize the manufacturer's authorized shop in Ontario California.

19.2 Based on a cursory review of the apparatus at Station #1, the apparatus appeared to be well cared for and properly equipped. BHFD's repair order process is one of the most well-defined Citygate has seen.

19.3 While the Beverly Hills fire apparatus repair system may be unusual for a smaller agency, *it appears to be effective, safe and relatively economical.*

Finding #20: In Beverly Hills safety is mentioned and emphasized throughout the Fire Operations Manual and other operational documents. One means or another covers many of the items listed above. What is missing is a comprehensive approach to fire department safety as envisioned in NFPA 1500 and the accountability reporting measures and tools to verify compliance, which are essential documents should an employee injury occur, especially when CAL OSHA has primary investigatory responsibility.

Finding #21: During Citygate’s review of the Technical Rescue SOPs, we found occasional reference to best practices, but they are lacking consistent reference to many of the best practices. However, that is not to say that the SOPs are poorly written or do not meet the general conditions normally found in compliant documents. They are clearly written and appear to be similar to SOPs in use throughout the fire service.

The following recommendations for the headquarters and support functions for the Beverly Hills Fire Department can be accomplished over time as City fiscal resources allow. These recommendations also provide the command staff the information from which to prioritize the resources, both in staff and funding that they do have.

Recommendation #4: Training Program: The Department and the City need to work together to reinvigorate a robust and effective training program. That program should include the following four major components:

4.1 Regularly scheduled drills where firefighters practice the essential knowledge, skills and abilities they need to do their jobs safely and effectively. This drill schedule needs to include in-station practice on the apparatus, tools and equipment they use; practice at a training facility coordinating with other companies; and a walk-through of major facilities, especially of the hospitality industry so essential to Beverly Hills’ reputation as a high-class destination.

4.2 Career development training where firefighters develop the mental knowledge, skills and abilities associated with advancement as driver/ operators, company officers, chief officers and, finally, fire chiefs. This is achieved through a combination of fire service training courses at each level and

higher education available through community colleges and universities.

- 4.3 Specialized training for firefighters assigned as paramedics, prevention officers, hazardous materials responders and technical rescuers. Training in much of this arena is governed by statute and cannot be ignored for very long or the Department could find itself out of compliance with statutes while it is attending to these emergencies. This is also a training arena that is constantly evolving as new techniques, new equipment and tools, and new challenges are addressed.
- 4.4 Mentoring for firefighters by seniors in the Department to ensure their development in those areas where training is needed but not a formal program. The International Association of Fire Chiefs, in their Officer Development Handbook, calls it “the pursuit of the planned, progressive life-long process of education, training, self-development and experience.”
- 4.5 Revise and adopt as much of the 2010 Strategic Plan Safety/Training plan elements as possible under the current climate. This will provide a basis for moving forward by adoption of best practice standards.
- 4.6 The Department and City need to plan for at least a small and in the City training site where there is the paved space, secured, with lighting and fire hydrants for hands-on training. High risk and live fire training can continue to be done at the Culver City site. Overtime will have to be budgeted when out-of-town training requires multiple Beverly Hills crews to attend.

Recommendation #5: **Training Officer:** On an interim basis, assign the Training Officer (up to 2 years, given the fiscal climate) *management* function to one of the shift battalion chiefs. Then, assign the Engine #5 Captain during the workday to provide coordination, some delivery and verification reporting of training to each duty platoon. The battalion chief’s duties would be to lead the program, determine departmental training needs, set overall schedules with the captains and attend regional training officer meetings.

Each platoon’s Training Officer (E5 Captain) will ensure that each shift is as fully engaged in training as possible and fulfills the integrated Department-wide plan. This includes providing shift

leadership to ensure that training and drills are scheduled, completed and recorded, and that assistance with the training is provided as much as his or her skills permit. Currently, the E5 Captain is assigned to coordinate daily shift scheduling. This would be transferred to the duty Battalion Chief's Aid/Scene Safety Officer.

5.1 While using E5 Captains is an interim solution, a permanent training officer solution is needed as soon as possible to provide coordination and leadership across all three shifts. By FY12/13, fund a 40-hour battalion chief (or similar position) as the Training Officer for the training program to meet the regulatory and safety needs of the Department. The Training Officer position could also be a rotation assignment every 3 years to/from another position for career development. The second Deputy Chief position will *not be restored*.

Recommendation #6: **SOP Review:** As time and resources permit, review the Department's emergency operations Standard Operating Procedure (SOP) documents and compare them with the appropriate best practices. Edit them, as needed, to ensure compliance. Notate in the documents that they are compliant with the particular edition of the appropriate best practice. As these best practices are revised and updated, update the Department's SOPs.

Recommendation #7: **Office Support Positions:** The City should undertake an analysis of the administrative support needs of the Fire Prevention, Fire Administration and Fire Operations support functions as soon as possible. This should include adding back minimum support hours to technology and fire prevention permits.

There should be initial support immediately to two critical needs – entering fire inspection records into the existing database and for the replacement Fire Department dispatch/records systems project. One way to do this at a modest expense would be to hire temporary clerical help to fast track the inspection records project, say 8-16 hours per week, and to fund on overtime 8 hours per week for an experienced Fire Captain to work on supporting internal technology projects.

Recommendation #8: **Technology Plan:** The Fire Department needs a technology plan to: Automate end-to-end the inspection, permitting and revenue programs to City systems.

Be sure the next generation dispatch and fire records systems meet the need for and provide management information and metrics with which to manage the Department's programs.

Maintain and keep technology replacement programs current for radios and field service technologies.

Appropriately staff the agency's needs.

Recommendation #9: **Technology Position:** As funding permits, create a civilian position – *Technology Officer*. This position is to plan, direct and provide Quality Assurance for all computer systems, e-records, fire radios, and station alerting systems. The Technology Officer will coordinate regional technologies on radios and mutual aid. Class/comp for the position is equivalent to 2nd tier IT support staff.

9.1 Immediately fund on overtime at a Fire Captain rate, 8 hours per week for technology support and new dispatch system work.

Recommendation #10: **Public Education:** The City, as funds permit, needs to redesign and fund the delivery of fire prevention education. This program does not have to be done by Fire Department sworn officer position. The public education programs deserve emphasis as a key Fire Department service to the community, to include the requisite staffing hours and media material resources for public outreach.

Recommendation #11: **Determine Fire Prevention Priorities:** The Fire Chief and Marshal need to do some serious triage of what the Bureau does, including what it must do by statute; what it needs to do because of fire history, threat to the public, economic importance and other factors; and what it would like to do. For example, it may not be able to do an on-site inspection of every business every year; it may only be able to do that every third year with mailed, self-inspections in the intervening years. There may be one or more categories of businesses that are routine violators and may need quarterly inspections. With the entertainment industry such a large part of Beverly Hills' civic life, the special events are consuming resources away from code inspections, which make the community safer.

Recommendation #12: **Special Event Staffing:** The City should consider doing an economic analysis of the special event hours, costs and revenues. While some special event staffing has to be firefighters on overtime, perhaps an additional non-sworn inspector could be hired do the pre-event

planning and some event stand-by work within the existing revenue. This would return one inspection staff position to commercial and multi-family building code enforcement and permit programs.

Recommendation #13: Deputy Fire Marshal: The City should re-evaluate the cost-effectiveness of a Fire Captain, Deputy Fire Marshal position on a rotation to fire station duties. Given the technical nature of the fire codes and the heavy special event burden on fire prevention, which takes time to learn, use of a non-sworn civilian position could be less costly and allow for tenure and a career ladder for the fire inspectors. When a Fire Captain retires, replace the Deputy Fire Marshal with an “Inspector II” position for advanced FP work and inspector scheduling supervision, similar to a utilities lead worker position.

Recommendation #14: Vehicle Code Review: The Department should complete a side-by-side review of the NFPA best practices and the Vehicle Code requirements to ensure that the BHFD Apparatus Maintenance Program is consistent and 100 percent in compliance.

Recommendation #15: Fire Apparatus Repair: It appears to Citygate that the current fire apparatus repair system works well. From the current data available, it is uncertain that centralizing the repairs at the City’s shops will actually save money and improve or maintain quality. Without more detailed analysis of the records, costs and mechanic certifications of both shops, Citygate cannot recommend a change without further detailed study by those most familiar with the City shops operation.

Recommendation #16: Safety Program: Safety Programs are another example of where the lack of a designated Safety and Training Officer is being felt. In Beverly Hills’ case, the Safety and Training Officer would have to restart building an NFPA 1500 compliant program. Many of the pieces are there already and in some instances, it is a matter of organization. It is a daunting task, but an excellent place for the Department to start is with NFPA 1500 Annex B Fire Service Program Occupational Safety and Health Program Worksheet. This twenty-five page document lists every component of a top-notch program and guides the Department through an analysis of compliance and the steps necessary to achieve compliance where it is lacking. This first step will lead to eventual full compliance.

Recommendation #17: USAR SOP Review: This is another example of where the lack of a designated Safety and Training Officer is being felt. Making sure that

operations guidelines meet current best practices and legal requirements is one of the important tasks assigned to Training Officers. As time and resources permit, review the SOPs and compare them with the appropriate best practices. Edit them, as needed to ensure compliance. Notate in the documents that they are compliant with the particular edition of the appropriate best practice. As these best practices are revised and updated, update the Department's SOPs.

5.3 PRIORITIES AND TIMING

Some of the recommendations in this planning effort requiring minimal additional resources can be worked on in parallel. Others will take several fiscal years, both in time and funding. Given these two realities, Citygate recommends the following short-term priorities:

5.3.1 Priority One

- ◆ Absorb the policy recommendations of this fire services study and adopt revised Fire Department performance measures to drive the deployment of firefighting and emergency medical resources.
- ◆ Re-configure as recommended the staffing to provide a 3rd paramedic rescue ambulance, by combining as needed, Engine #2 and #5's crews. Implementation requires a paramedic transferred from the Ladder Truck to Engine #2.
- ◆ Provide temporary staffing support funds to the fire prevention inspection records and billing start-up project and to fire technology support, especially the replacement dispatch system project.

5.3.2 Priority Two

- ◆ Restore a 1.0 Training Officer position at the level of Battalion Chief (or an equivalent position).
- ◆ Increase office support staff (clerical) by a minimum of .5 positions.

5.3.3 Priority Three

- ◆ Restore the technology support the Department had prior to the headquarters staffing cutbacks.
- ◆ Restore a Public Education position with a 1.0 non-sworn position.

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- ◆ Begin a capital design, funding and construction project for a modest fire training facility inside the City limits.