

## Community Health and Safety

This Chapter describes the existing conditions pertaining to the health and safety of Beverly Hills. This Chapter includes the following sections:

- Geology and Mineral Resources
- Seismic Hazards
- Flood Hazards
- Fire Hazards
- Hazardous Materials
- Police Services
- Fire Protection
- Emergency Preparedness
- Noise

### 6.1 GEOLOGY AND MINERAL RESOURCES

This section describes the geologic characteristics and mineral resources of the City of Beverly Hills. In particular it describes conditions pertaining to local geology within the City. The existing regulatory framework relevant to geologic resources is also presented. This section is based on information from documents provided by the City of Beverly Hills and the California Department of Conservation (CDC), Divisions of Mines and Geology. Seismic hazards including a discussion of regional and local faults are presented in Section 6.2 (Seismic Hazards).

#### ■ Existing Conditions

##### **Geology**

##### **Prehistory**

During the Miocene and Pliocene periods (5 to 25 million years ago) the Los Angeles Basin and the surrounding mountains were submerged beneath the Pacific Ocean. However, movement and collision of tectonic plates during the Pleistocene (2 million years ago) elevated much of this area above sea level. This seismic activity eventually created the land forms that exist today.

##### **Local Geology**

The City of Beverly Hills is located within Los Angeles basin area, at the southern tip of the Transverse Ranges geomorphic province and near the northern boundary of the Peninsular Range geomorphic province. The Transverse Ranges are an east/west-trending series of steep mountain ranges including the Santa Ynez, Santa Monica, San Gabriel, and San Bernardino from north to south, respectively (CGS 2002). Due to intense north/south compression, the Transverse Range in this region is one of the most rapidly rising areas on earth (CGS 2002). The Peninsular Ranges is characterized by northwest and southwest ranges including the Santa Anna, San Jacinto, and Laguna

Mountains in Southern California (CGS 2002). The Santa Monica and Hollywood faults are considered the boundary between these two geomorphic provinces (Geotechnical Investigation 2003).

The City is located at the base of the Santa Monica Mountains. The portion of the City located north of Sunset Boulevard is characterized by typical rugged topography of the Santa Monica Mountains with steep ridges and narrow valleys. The elevation in this area is generally 600 to 1,300 feet above mean sea level (USGS 1966). The transitional area between the mountains and the coastal plain consists of alluvial fans that have developed from erosion of the Santa Monica Mountains. The alluvial fans slope approximately 2 to 3 percent in a southeast direction. The elevation in this transitional area is about 300 feet above mean sea level (USGS 1966, photorevised 1981). The southern portion of the City is located in coastal plain of the Los Angeles Basin which is part of the Peninsular Range geomorphic province.

Most of the City is underlain by sedimentary rocks primarily dating from the Tertiary era (66 million years ago) (CDC 1998). The sedimentary rock is overlain with alluvial deposits of varying ages but they are all within the Quaternary era (2 million years ago) (CDC 1998). Following are brief descriptions of the rock and alluvial deposits found within the City.

### **Santa Monica Slate**

The Santa Monica Slate is the oldest geologic unit mapped in Beverly Hills dating from the Jurassic period (208 million years ago) (CDC 1998). The Santa Monica Slate is widely exposed in the northern area of the City where it forms the Santa Monica Mountains. It consists of jointed and fractured slate and phyllite with well developed cleavage and thick weathered zones. The slate contains abundant crystals of cordierite believed to have been formed as a result of contact metamorphism of the Santa Monica Slate with granitic intrusions (CDC 1998).

### **Granitic Rocks**

Granitic rocks, also located in the Santa Monica Mountains are exposed in the northeastern portion of the City. They are made up of gray medium to coarse grained biotite granite and granodiorite (Geotechnical Report 1987). At the surface, the granitic rocks are soft and crumbly due to weathering (CDC 1998).

### **Sedimentary Rocks**

The Santa Monica Slate and granitic rock are overlain with deep marine clastic sedimentary rock from the Cretaceous period. These formations consist of interbedded sandstone, siltstone, and pebble-cobble conglomerate. Overlaying these formations are Paleocene and Eocene (66 to 57 million years ago) non-marine clastic sedimentary rock (CDC 1998). In addition, there are Tertiary bedrock formations including shallow-marine clastic sedimentary rocks typically consisting of interbedded conglomerate, massive sandstone, concretionary shale, and siltstone and basalt flows (CDC 1998).

## **Alluvial Deposits**

Alluvial deposits underlie the City South of Sunset Boulevard forming alluvial fans (GeoTechnical Report 1987). The older deposits are primarily composed of alternating beds of medium dense to very dense sand, clay, and silt. Gravel is also abundant in many layers. Younger alluvial deposits consist of alternating beds of clay, silt, and fine to medium grained sand.

## **Mineral Resources**

### **Oil and Gas Production**

The City of Beverly Hills has a history of hydrocarbon production in the form of oil and gas wells. Oil exploration and production started within what is now the city limits about ten years before the City was incorporated in 1914. Since 1967 various companies have produced hydrocarbons from the East Beverly Hills, San Vicente, and South Salt Lake oil fields. The Salt Lake Field is slant drilled under Beverly Hills from Los Angeles. The Beverly Hills Oil Field is both slant drilled from Los Angeles and drilled directly from Beverly Hills (Beverly Hills 1980).

The San Vicente and East Beverly Hills wells have been the most productive over the years. As of January 2001 the San Vicente field has produced a total of 20 million barrels of oil and 22.1 billion cubic feet of gas (City of Beverly Hills 2001). On a monthly basis, the 26 wells located on the site produce approximately 1,756 barrels of oil per day and 2.7 million cubic feet of gas per day (Subsidence Report). The East Beverly Hills field has produced a total of 110.5 million barrels of oil and 169 billion cubic feet of gas as of January 2001.

## **■ Regulatory Setting**

### ***Air Quality Management District***

The South Coast Air Quality Management District (AQMD) is the air pollution control agency for Orange County and major portions of Los Angeles, San Bernardino, and Riverside counties. AQMD has scheduled a public workshop on Proposed Rule 1401.1—Requirements for New and Relocated Sources Near Schools. A public hearing is set for September 9, 2005. The purpose of the Rule is to protect the health of school children by minimizing their exposure to toxic air contaminants while attending school. Rule 1401.1 would apply only to new or relocated facilities that site near a school and have equipment or processes which emit toxic air contaminants and would set a risk threshold for those facilities. Proposed exemptions from the rule may include diesel emergency engines, soil decontamination equipment, and equipment used at various locations throughout the AQMD.

## **Local**

No locations within the City of Beverly Hills are ideally suited for oil extraction. The high-quality residential and commercial developments are traditionally incompatible with oil derricks and oil extraction operations. However, there are procedures to apply for and operate oil extraction operations, which require that environmental and aesthetic standards are met.

### **City of Beverly Hills Municipal Code**

Title 10, Chapter 5, article 3 of the Beverly Hills Municipal Code (BHMC) addresses the topic of oil wells as they pertain to the City of Beverly Hills. The purpose of this article is to establish controls for the drilling for and production of oil, gas and other hydrocarbon substances within and under the city. The provisions of this article prohibit drilling either on the surface or in the subsurface of the city for oil and gas except as strictly permitted. It is unlawful for any person to conduct any drilling or produce any oil or gas operation from any drill site without first having applied for an obtained from the City Council a permit to do so. However, oil and gas wells lawfully drilled into the subsurface of the city prior to February 20, 1968, which are still being drilled or are producing oil or gas or other hydrocarbon substances are not be prohibited.

BHMC Section 10-3.3007 requires any structure to undergo review by the Architectural Commission. City aesthetic standards require an architecturally pleasing wall placed around the site where the oil drilling derrick is located. Furthermore, the derrick must have an exterior color, pattern, and texture that meet the Architectural Commission approval. The shape of the covering of the drilling derrick should be determined by the location. The overriding goal of the covering is to minimize the presence of the derrick on the horizon.

BHMC Section 10-3.2212 expressly permits oil and gas extraction activities on the site of the Beverly Hills High School.

The most recent example of an approval under these City requirements is of an oil/gas drilling operation on the property of the Beverly Hills High School in the late 1970s. Oil and gas have been drilled on the Beverly Hills High School site since 1908. The current operation became controversial in 2003 when claims were made to the news media that volatile organic compounds, including potential carcinogens, were being released by the oil operations. The City and the School District conducted extensive testing in response to the claims, but found no evidence of abnormal air quality at or around Beverly Hills High School. Nevertheless, the oil operations remained of considerable concern to some residents.

## ■ Issues

### Geologic Resources

No issues have been identified related to geologic resources.

### Mineral Resources

- Extraction at the well site of the City's mineral resources could be incompatible with future development as well as existing land uses.
- Responding to perceived hazards from oil and gas extraction activities regardless of merit can require significant resources.
- Mineral resource extraction, over the long term, could become economically infeasible.

## ■ Glossary

- **Alluvial**—Pertaining to or composed of alluvium, or deposited by a stream or running water.
- **Alluvium**—A general term for clay, silt, sand, gravel, or similar unconsolidated detrital material deposited during comparatively recent geologic time by a stream or other body of running water as a sort or semi-sorted sediment in the bed of the stream or on its flood plain or delta, or as a cone or fan at the base of the mountain.
- **Consolidated material**—Soil or rocks that have become firm as a result of compaction.
- **Cretaceous**—The period of geologic time from 145 to 65 million years ago.
- **Eocene**—The period of geologic time from 58 to 40 million years ago.
- **Holocene**—a period of geologic time since the last ice age in North America, approximately 11,000 years.
- **Miocene**—A period of geologic time from 24 to 5 million years before the present.
- **Paleocene**—A period of geologic time from 64 to 58 million years ago.
- **Pleistocene**—A geologic period which began about 2.0 million years ago and ended with the melting of the large continental glaciers about 11,000 years ago.
- **Pliocene**—A period of geologic time from 5 to 2 million years ago.
- **Quaternary**—a period of geologic time from 2.0 million years to the present.
- **Spud**—to begin to drill (an oil well)

## ■ References

- Beverly Hills, City of. 1987. Geotechnical Report Seismic Safety Element, March, pp. 2-4 through 2-6.
- . 2001. *Subsidence Report for Proposed Wells, San Vicente Drill Site*, R.G. Lindblom, pp. 5-6, August.
- . 2003. Geotechnical Investigation (appendix D) from Beverly Hills Gardens Montage Hotel EIR, p. 5.

California Department of Conservation. Division of Mines and Geology. 1998. Seismic Hazard Evaluation of the Beverly Hills 7.5-Minute Quadrangle, Los Angeles County, California

California Geological Survey (CGS). 2002. California Geomorphic Provinces Note 36.

Final Environmental Impact Report: Beverly Hills High School Urban Drill Site, May 1978; prepared for City of Beverly Hills by Atlantis Scientific

United States Geological Survey (USGS). 1981. USGS 7.5 Minute Series Topographic Map Beverly Hills Quadrangle. 1966 photorevised 1981.

## 6.2 GEOLOGIC AND SEISMIC HAZARDS

The City of Beverly Hills is in a seismically active region of Southern California. The following sections describe regional faulting, historical seismic activity in the surrounding area, groundshaking and other seismic and geologic hazards that could affect the City. Information in this section is based on geotechnical investigations prepared for the City, information obtained from the United States Geological Survey, the Beverly Hills Hazard Mitigation Action Plan, and previous environmental documentation prepared for the City. Full bibliographic references are provided at the end of this section.

### ■ Existing Conditions

#### *Regional Geology*

The City of Beverly Hills is located within the Los Angeles basin area, at the southern edge of the Transverse Ranges geomorphic province, and near the northern boundary of the Peninsular Ranges geomorphic province (Yerkes et al. 1965). Most of the Transverse Ranges province is mountainous, including the San Gabriel and San Bernardino mountains to the east, and the Santa Monica Mountains to the north and west. The province is bounded by the east/west-trending Santa Ynez Fault to the north and the Malibu–Santa Monica–Raymond Fault series to the south. The Peninsular Ranges geomorphic province is characterized by a series of northwest/southwest-trending mountains, including the San Jacinto and Santa Rosa mountains, and faults including the Newport-Inglewood Fault and the Whittier-Elsinore Fault. The San Andreas Fault is located approximately 35 miles northeast of Beverly Hills.

The City is located at the foot of the Santa Monica Mountains and contains both a flatlands area to the south, and relatively rugged hills to the north (U.S.G.S. 1966, photorevised in 1981). The topography south of Sunset Boulevard is characterized by a gradual south-east slope of less than three percent, while terrain in the canyons north of Sunset Boulevard (e.g., Peavine, Franklin, and Coldwater) can exceed 50 percent slope.

Most of the City is directly underlain by alluvial deposits of the Holocene epoch (i.e., 11,000 years old), with some shale, slate and granitic rocks north of Sunset Boulevard. Alluvial materials in the vicinity of the project consist of interlayered clay, silt, and silty sand within 20 feet of the surface. Beneath the alluvium there is approximately 300 feet of continental and marine sediments of the Lakewood Formation that date from the Pleistocene epoch (approximately two million years old). These sediments generally consist of gravel, sand, and silty sand, with some silt and clay. Early Pleistocene alluvial deposits of the San Pedro formation, consisting of sand, stratified gravel, silt and clay layers lie further below. This Pleistocene age alluvium is underlain by Tertiary period sedimentary rocks extending approximately 12,000 feet beneath the site.

## **Faulting**

Earthquake magnitude is a quantitative measure of the strength of an earthquake or the strain energy released by it, as determined by the seismographic or geologic observations. It does not vary with distance or the underlying earth material. This differs from earthquake intensity, which is a qualitative measure of the effects a given earthquake has on people, structures, loose objects, and the ground at a specific location. Intensity generally increases with increasing magnitude and in areas underlain by unconsolidated materials, and decreases with distance from the epicenter.

Several magnitude scales have been developed with the most commonly used scale called the moment magnitude ( $M_w$ ) scale. Moment magnitude is related to the physical size of fault rupture and the movement or displacement across the fault, and as such is more uniform measure of the strength of an earthquake. Another measure of earthquake size is seismic moment. The seismic moment determines the energy that can be radiated by an earthquake. The moment magnitude of an earthquake is defined relative to the seismic moment for that event.

Earthquake intensity in a given locality is typically measured using the Modified Mercalli Intensity Scale with values of this scale ranging from I to XII. The most commonly used adaptation covers the range of intensities from the conditions of a value of I that is defined as not felt except by very few, favorably situated, to XII that is defined as damage total, lines of sight disturbed, and objects thrown into the air. While an earthquake has only one magnitude, it can have many intensities, which typically decreases with distance from the epicenter. See Table 6.2-1 for more information on the Modified Mercalli Intensity Scale.

## **Faults**

The Southern California region is seismically active and commonly experiences strong groundshaking resulting from earthquakes along both known and previously unknown active faults. Active faults are defined as faults that have caused soil and strata displacement within the Holocene period (the last 10,000 years). Potentially active faults are faults that have experienced movement in the Quaternary period (last two million years), but not during the Holocene. Faults that have not experience movement in the last two million years are generally considered inactive.

The City of Beverly Hills contains both active and potentially active faults. Specifically, three active or potentially active faults are located within the City limits, including: the Hollywood Fault, the Santa Monica Fault, and the Newport-Inglewood Zone of Deformation. (Woodward-Clyde 1987) Since the 1987 Study was completed, work completed by Dolan, et al and the state Division of Mines & Geology maps show the Hollywood and Santa Monica faults as converging within the City, and the Newport-Inglewood fault located approximately two miles south of the City.

<i>Richter Magnitude (M)</i>	<i>Modified Mercalli Intensity Scale</i>	<i>Description</i>
3	I	Detected by only sensitive instruments
	II	Felt by a few people at rest
	III	Felt noticeably indoors, but not always recognized as a quake; vibration like a passing truck
4	IV	Felt indoors by many and outdoors by few
	V	Felt by most people. Some breakage of windows, dishes, and plaster
5	VI	Felt by all; falling plaster and chimneys; damage small
	VII	Damage to buildings varies; depends on quality of construction
6	VIII	Walls, monuments, chimneys fall; panel walls thrown out of frames
	IX	Buildings shift off foundations; foundations crack; ground cracks; underground pipes break
7	X	Most masonry and frame structures destroyed; ground cracks; landslides
8	XI	Ground fissures; pipes break; landslides; rails bent; new structures remain standing
	XII	Damage total; waves seen on ground surface; objects thrown into the air

SOURCE: California Department of Mines and Geology 1998

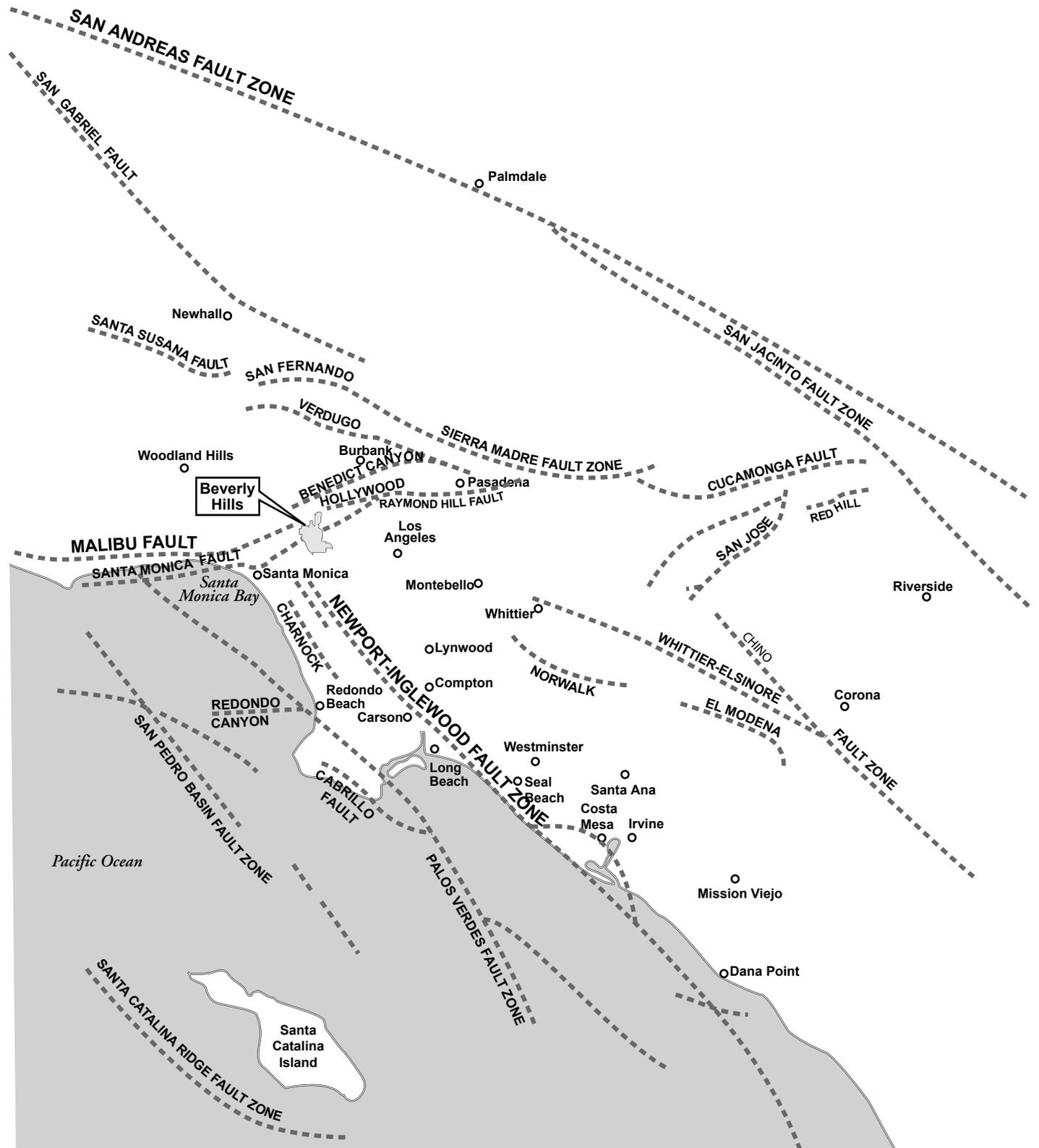
The Hollywood and Santa Monica Faults are part of a major east/west-trending, left lateral-reverse fault system that forms the southern boundary of the Transverse Ranges physiographic province. This system of faults is located along the southern front of the Santa Monica Mountains and extends from offshore in Santa Monica Bay to the San Gabriel Mountains.

Figure 6.2-1 illustrates the locations of regional faults with the City and surrounding areas. In addition, Table 6.2-2 summarizes the seismic parameters of active and potentially active faults in the region.

#### **Recent Seismic Activity**

The City of Beverly Hills is located in a seismically active region of Southern California. The most recent seismic activity near the City of Beverly Hills was in September 2001 when a moderate-sized earthquake, magnitude 4.2, occurred in West Hollywood. This earthquake was widely felt throughout the Los Angeles area and was associated with the Newport-Inglewood Fault.

The most recent earthquake of significance in Southern California affecting the City was the 1994 Northridge Earthquake, a magnitude 6.7 earthquake that occurred in the San Fernando Valley. Approximately, 15,000 structures experienced moderate to severe damage and several bridges and overpasses collapsed. The epicenter for this earthquake was the San Andreas Fault, which, as shown in Table 6.2-2, is located approximately 36 miles from the City.



Source: CDMG OFR 93-03, 1993; USGS MFI-512, 1985

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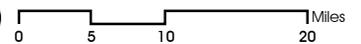


Figure 6.2-1

**Table 6.2-2 Active and Potentially Active Faults**

<i>Fault Name</i>	<i>Distance to Beverly Hills (miles)</i>	<i>Maximum Credible Earthquake (MCE)<sup>a</sup> (Richter<sup>b</sup> Scale Magnitude, M)</i>	<i>Fault Name</i>	<i>Distance to Beverly Hills (miles)</i>	<i>Maximum Credible Earthquake (MCE)<sup>a</sup> (Richter<sup>b</sup> Scale Magnitude, M)</i>
<b>Active Faults</b>			<b>Potentially Active Faults</b>		
Santa Monica	0	6.6	Overland	2.7	6.0
Hollywood	1.3	6.4	Charnock	4.0	6.5
Newport-Inglewood	2	6.9	MacArthur Park	4.5	5.7
Compton–Los Alamitos Thrust	7	6.8	Coyote Pass	10.5	6.7
Northridge Thrust	7	6.9	Northridge Hills	15	6.6
Malibu Coast	8.6	6.7	Santa Susana	18	6.6
Anacopa-Dume	8.6	7.3	Norwalk	20*	6.7
Raymond	14	6.5	Los Alamitos	22	6.2
Verdugo	10.5	6.7	Duarte	23	6.7
Elysian Park Thrust	10.5	6.7	Clamshell-Sawpit	23	6.5
Palos Verdes	18	7.1	San Jose	30	6.5
San Fernando	14	6.7	Hollister	33	6.5
Sierra Madre	19	7.0	Indian Hill	36	6.6
San Gabriel	15	7.0	Chino–Central Avenue	38	6.7
Whittier	23	6.8	Santa Cruz Island	65	6.8
Simi-Santa Rosa	24	6.7			
Oak Ridge	28	6.9			
San Cayetano	33	6.8			
San Andreas (Southern Segment)	36	7.4			
Cucamonga	40	7.0			
Elsinore (Glen Ivy Segment)	44	6.8			
San Jacinto (San Bernardino Segment) (Active)	53	6.7			

SOURCE: CDMG, cited in Beverly Hills, 1996

\* Department of Conservation, Division of Mines and Geology, Fault Activity Map of California and Adjacent Areas, 1994.

<sup>a</sup> Earthquake potential is commonly described in terms of the maximum credible and maximum probable earthquake along a particular fault. Maximum credible earthquake (MCE) refers to the seismic event of largest Richter magnitude possibly occurring under the currently understood tectonic framework. The maximum probable earthquake (MPE) describes that earthquake likely to occur during a given time period (i.e., 50 or 100 years), and is regarded as a probable occurrence, not an assured event. Magnitude estimates for maximum probable earthquakes are generally less than estimates of maximum credible earthquakes.

<sup>b</sup> In 1935, Charles Richter of the California Institute of Technology developed a system for measuring earthquake size based on seismograph records. The Richter magnitude, often called the local magnitude, relates the amplitude of the waves recorded to the energy released by the earthquake. The Richter scale is logarithmic, meaning that each whole number increase on the scale represents a ten-fold increase in the amplitude of the seismic waves, and a 30-fold increase in the amount of energy released. See Harden (1998).

## **Soils**

The areas of the City located north of Sunset Boulevard are underlain primarily by Triassic metamorphic, Jurassic granitic, and upper Miocene sedimentary rocks. The alluvial fans that underlie most of the City south of Sunset Boulevard consist of Quaternary debris generated from erosion of the Santa Monica Mountains.

## **Geologic Hazards**

The amount of damage to a building does not depend solely on how hard it is shaken. In general, smaller buildings such as houses are damaged more by higher frequencies, so usually a house must be relatively close to the epicenter to be severely damaged. Larger structures such as high-rises are damaged more by lower frequencies and will be more noticeably affected by the largest earthquakes, even at considerable distances.

In addition to regional aspects of the earthquake hazard, there are location-specific hazards that can cause additional damage as described below.

## **Expansive Soils**

Soils that volumetrically increase, or expand when exposed to water are considered expansive soils. These soils are typically very fine grained (i.e., clays) and can expand from small fractions to multiples of their volume, depending on their clay mineralogy. Such expansion can cause structural damage to foundations and roads with out proper structural engineering. Clay soils in Beverly Hills have potential for expansion and would swell and shrink with changes in moisture content (Hayes 1999).

## **Subsidence**

Subsidence may also be a potential hazard within the City. Subsidence can occur as a result of excessive groundwater or petroleum withdrawals which cause the ground surface to sink. Important examples of subsidence are found in alluvial valleys filled to great depth with alluvial fan and lake-deposited sediments. Subsidence produces crack in pavements and buildings and may dislocate wells, pipelines, and water drains. Beverly Hills has experienced limited subsidence over the years, although it is unclear if it is a result of fluid withdrawal or natural tectonic movement (Subsidence Report 2001).

## **Surface Rupture**

Surface rupture or displacement occurs as a fault breaks the ground surface during a seismic event. Generally, this hazard is anticipated to occur along pre-existing faults. Surface rupture cannot be prevented; thus, faults are identified with the purpose of delineating zones over the surface tract of potentially hazardous faults where construction should be avoided. Greatest damage is generally associated with sudden, large displacements of earth materials.

## Groundshaking

A major cause of structural damage from earthquakes is groundshaking. The amount of motion expected at a building site can vary from none to forceful depending upon the distance to the fault, the magnitude of the earthquake, and the local geology. Greater movement can be expected at sites located on poorly consolidated material such as alluvium located near the source of the earthquake epicenter or in response to an earthquake of great magnitude. Strong ground shaking can damage large freeway overpasses and unreinforced masonry buildings. It can also trigger a variety of secondary hazards such as liquefaction, landslides, fire, and dam failure.

## Liquefaction

Liquefaction refers to a phenomenon where the surface soils, generally alluvial soils, become saturated with water. Groundshaking packs the sand grains closer together so that there is less pore space available for the water. This increases the water pressure between the sand grains within the alluvium. These soils therefore, become very wet and mobile causing foundations of structures to move, leading to varying degrees of structural damage. Generally, liquefaction occurs only below the water table; however, after liquefaction has developed, it can move upward. Liquefaction susceptibility decreases with depth of the water table, and the age cementation, and compactness of the sediments. Liquefaction is a potential hazard for the City of Beverly Hills as considerable portions of the City are subject to liquefaction. These areas are illustrated in Figure 6.2-2.

## Landslides and Slope

Landslides are often associated with earthquakes, but there are other factors that can influence the occurrence of landslides. These factors include the slope, the moisture content of the soil and the composition of the subsurface geology. For example, heavy rains or improper grading may trigger a landslide.

The hillside area of the City of Beverly Hills is the only sector that is subject to landslide potential. Surface movements in the hillside area could be triggered by rain, a breach in a reservoir, damage to potable water reservoirs or pumping facilities or earthquake. Hillside development has placed additional loads on the subsurface bedrock. Erosion and the loss of vegetation during periods of drought tend to increase the potential for localized landslides in the hillside areas of the City. In the canyon areas, the presence of subsurface water provides the potential for liquefaction during earthquakes. Significant surface movement along the streets that access Coldwater Canyon Drive would tend to isolate populations in those areas due to the extreme gradient and right of way siting and would disrupt underground utilities. (Multi-Hazard Functional Plan 2005) Areas within the City that are susceptible to landslides are illustrated on Figure 6.2-2.

## ■ Regulatory Setting

### **Federal**

#### **Uniform Building Code**

The Uniform Building Code (UBC) defines different regions of the United States and ranks them according to their seismic hazard potential. There are four types of these regions, which include Seismic Zones 1 through 4, with Zone 1 having the least seismic potential and Zone 4 having the highest seismic potential. The City of Beverly Hills is located in Seismic Zone 4.

### **State**

#### **Alquist-Priolo Earthquake Fault Zoning Act**

The purpose of the *Alquist-Priolo Earthquake Fault Zoning Act of 1972* is “to regulate development near active faults so as to mitigate the hazard of surface fault rupture.” The State Geologist (chief of the Division of Mines and Geology) is required to delineate Earthquake Fault Zones (formerly known as “Special Studies Zones” prior to January 1, 1994) along known active faults. Cities and counties affected by the zones must regulate certain development within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. Typically, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

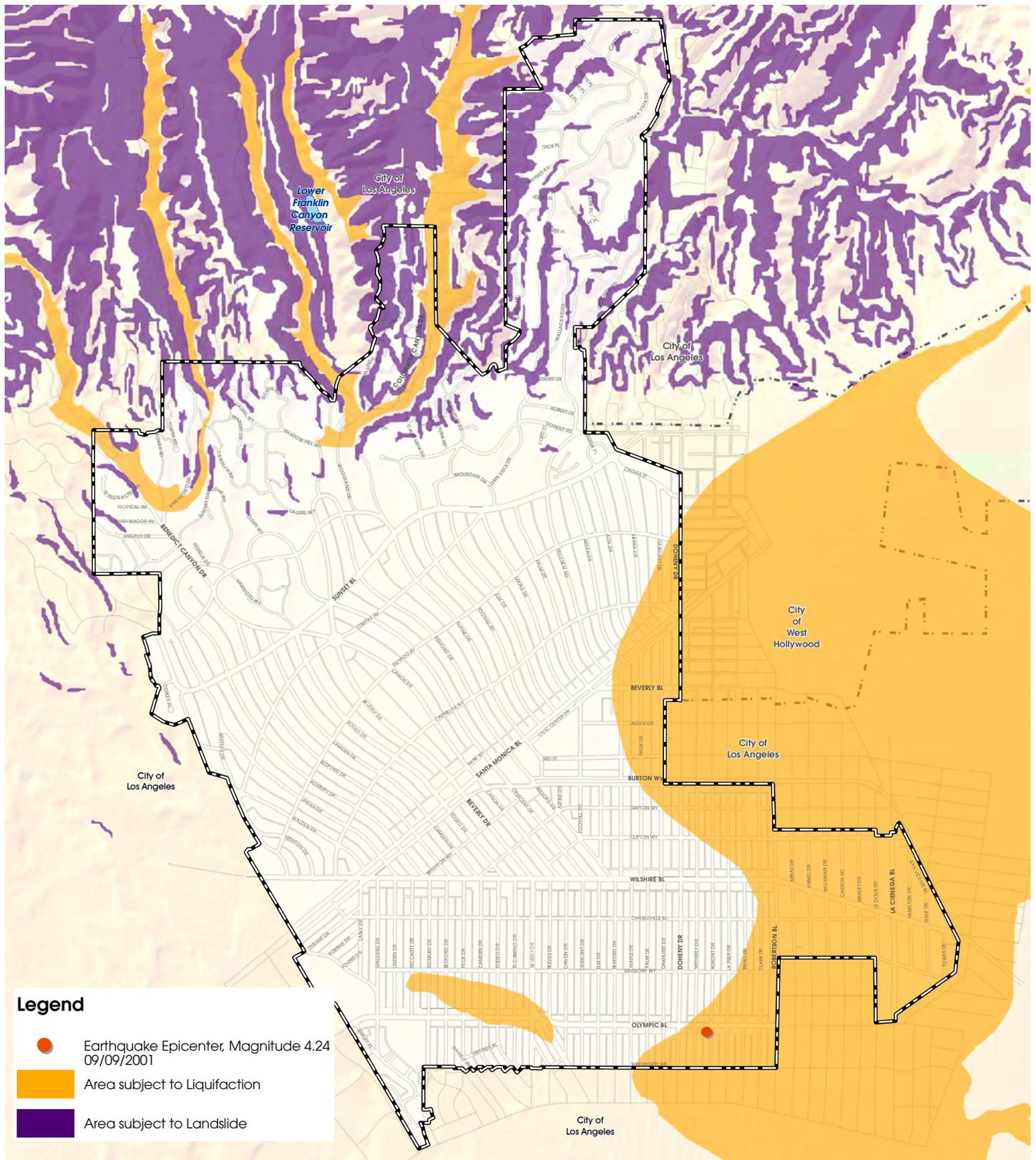
#### **Occupational Safety and Health Act**

Site safety requirements are generally based on specifications of the Occupational Safety and Health Administration (OSHA), in accordance with the *Occupational Safety and Health Act* (1970, amended through 1998). OSHA standards relevant to geologic resources are focused on worker safety during excavation (see CFR Section 29 Part 1926).

#### **California Building Code**

The state of California provides a minimum standard for building design through the California Building Code (CBC). The CBC is based on the UBC, with amendments for California conditions.

Chapter 23 of the CBC contains specific requirements for seismic safety. Chapter 29 of the CBC regulates excavation, foundations, and retaining walls. Chapter 33 of the CBC contains specific requirements pertaining to site demolition, excavation, and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapter 70 of the CBC regulates grading activities, including drainage and erosion control. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in Cal-



**Legend**

- Earthquake Epicenter, Magnitude 4.24 09/09/2001
- Area subject to Liquefaction
- Area subject to Landslide

Source: City of Beverly Hills, June 2005

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0 900 1,800 3,600 Feet

Figure 6.2-2



OSHA regulations (Title 8 of the California Code of Regulations [CCR]) and in Section A33 of the CBC.

Chapter 16A, Division IV of the California Building Code (CBC), entitled “Earthquake Design,” states that the “purpose of the earthquake provisions herein is primarily to safeguard against major structural failures or loss of life.” The CBC and Uniform Building Code (UBC) regulates the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The procedures and limitations for the design of structures are based on site characteristics, occupancy type, configuration, structural system, height, and seismic zoning. Seismic zones are mapped areas (Figure 16A-2 of the CBC and Figure 16-2 of the UBC) that are based on proximity to known active faults and the potential for future earthquakes and intensity of seismic shaking. Seismic zones range from 0 to 4, with areas mapped as Zone 4 being potentially subject to the highest accelerations due to seismic shaking and the shortest recurrence intervals.

## **Regional**

### **Southern California Association of Governments**

Regional, multi-agency planning efforts are summarized by the Southern California Association of Governments (SCAG 1996). Among policies aimed at managing regional growth, and relevant to geologic resources, is the following:

- **Policy 3.22**—Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood and seismic hazards.

### **Seismic Hazards Mapping Act**

CDMG also provides guidance with regard to seismic hazards. Under CDMG’s *Seismic Hazards Mapping Act*, seismic hazard zones are to be identified and mapped to assist local governments in land use planning. The intent of this publication is to protect the public from the effects of strong ground shaking, liquefaction, landslides, ground failure, or other hazards caused by earthquakes. In addition, CDMG’s Special Publications 117, “Guidelines for Evaluating and Mitigating Seismic Hazards in California,” provides guidance for the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations.

## **Local**

### **Seismic Safety Program**

The purpose of this program is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on existing unreinforced masonry bearing wall buildings. The provisions of this chapter are minimum standards for structural seismic resistance and established primarily to reduce the risk of

loss of life or injury. All buildings having at least one reinforced masonry bearing wall shall comply with the requirements of this program except:

- Detached one or two family dwellings and apartment houses containing less than five units
- School buildings inspected for building safety purposes by the state of California
- Historic buildings or structures which have been listed on the state or national historic building register, or have received a rating of 4E or better by the Beverly Hills historic resources survey and which are seismically strengthened according to the provisions of part 8 of title 24 of the California Code of Regulations (state Historical Building Code).

**Building Code of the City of Beverly Hills**

*Municipal Code Section 9-1.201 Adoption of Uniform Building Code*

Implementation of earthquake mitigation policies most often takes place at the local government level. The City of Beverly Hills Community Development Department Building and Safety enforces building codes pertaining to earthquake hazards.

The City of Beverly Hills Building Code sets the minimum design and construction standards for construction. In September 2002, the City adopted the most recent California Building Code (discussed above). Additionally, Table 6.2-3 identifies seismic-related amendments in the City:

<b>Table 6.2-3 Seismic Building Codes (Amendments) in the City of Beverly Hills Municipal Code</b>	
<i>Section</i>	<i>Title</i>
1612.3.1	Basic Load Combinations
1612.3.2	Alternate Basic Load Combinations
1629.4.2	Near-Source Factor (steel)
1630.1.1	Earthquake Loads (light frame walls)
1630.4.2	Redundancy Factor
1630.7	Horizontal Torsional Movements
1630.8.2.1	Elements Supporting Discontinued System
1630.8.2.2	Detailing Requirements (Steel)
1630.10.2	Story Drift
1633.2.9	Diaphragms Supporting Concrete or Masonry Walls and Diaphragm Chords and Drag Members
1701.5	Special Inspection for Structural Welding
1702	Structural Observation
1806.6.1	Additional Requirements Regarding Steel Plate Washer for Anchor Bolts
Division IV and V of Chapter 22	Seismic Provisions for Structural Steel Buildings

SOURCE: Beverly Hills Hazard Mitigation Action Plan 2004–2009

In addition, the City conducted a building inventory in 1998-99 of all commercial and multifamily residential structures in the City to screen for a variety of structural conditions such as construction type, presence of a “soft” story, non-ductile framing, location in a liquefaction zone, tuck-under parking, lack of reinforced cripple walls, etc. Study of implementation of policies designed to mitigate risk from these conditions is pending.

### ■ Issues

- The City of Beverly Hills is located within a seismically active region. Therefore, existing and future developments within the City are likely to be subject to potential seismic hazards, including subsidence, landsliding, and liquefaction depending on their location.
- Implementation of improvements identified in the 1998-99 building inventory will reduce risk associated with seismic hazards, however appropriate analysis of cost-benefits needs to be undertaken and policy direction provided from decision-makers before implementation can occur.

### ■ Glossary

- **Active fault**—As defined by the California Division of Mines and Geology, a fault that has shown displacement within Holocene time (last 11,000 years). For planning purposes, such faults can be expected to move within the next hundred years.
- **Blind thrust fault**—A thrust fault that does not rupture all the way up to the surface so there is no evidence of it on the ground. It is "buried" under the uppermost layers of rock in the crust
- **Earthquake**—Perceptible trembling to violent shaking of the ground, produced by sudden displacement of rock below and at the earth's surface.
- **Epicenter**—An area of the surface of the earth directly above the focus (true center of an earthquake, within which the strain energy is first converted to elastic wave energy of an earthquake.
- **Erosion**—Movement of material (such as soil) from one place to another on the earth's surface. Agents of movement include water, ice, wind, and gravity.
- **Expansive soils**—Expansive soils are those that greatly increase in volume when they absorb water and shrink when they dry out.
- **Fault**—A fracture in the earth's crust accompanied by a displacement of one side with respect to the other and in a direction parallel to the fracture.
- **Fault system**—Two or more interconnecting fault sets.
- **Fault trace**—The intersection of a fault with the earth's surface.
- **Fault zone**—A zone in which surface disruption or rock fracture has occurred due to movement along a fault. A fault zone may be expressed as an area with numerous small fractures, breccia (essentially, fractured rock) as a fault gouge. A fault zone may be anywhere from a few meters or yards) to two or more kilometers (1 mile or more) wide.
- **Ground failure**—Mudslide, landslide, liquefaction, or the seismic compaction of soils.
- **Ground shaking**—When movement occurs along a fault, the energy generated is released as waves, which cause groundshaking. Groundshaking intensity varies with the magnitude of the earthquake, the distance from the epicenter, and the type of rock or sediment through which the seismic waves move. The strongest ground

motion, or groundshaking, typically occurs near the epicenter of the earthquake and attenuates (diminishes) as the seismic waves move away from the epicenter. In general, loose or soft saturated sediments amplify groundshaking more than dense or stiff soils or bedrock materials.

- **Inactive fault**—A fault which shows no evidence of movement in recent geologic time and no potential for movement in the relatively near future.
- **Intensity** (of an earthquake)—A measure of the effects of earthquake waves on people, structures, and earth=s surface at a particular place. The intensity at a specific point depends not only upon the strength of the earthquake, or the earthquake magnitude, but also upon the distance from the point to the epicenter and the local geology. Intensity may be contrasted with magnitude, which is a measure of the total energy released by an earthquake.
- **Landslide**—A general term for relatively rapid mass movement, such as slump, rock slide, debris slide, mudflow, and earthflow.
- **Liquefaction**—A process whereby soil is temporarily transformed to a fluid form during intense and prolonged ground shaking or because of a sudden shock or strain.
- **Magnitude** (earthquake)—A measure of the strength of an earthquake or the strain energy released by it, as determined by seismographic observations and mathematical calculations.
- **Potentially active fault**—As defined by the California Division of Mines and Geology, a fault that has shown displacement during Quaternary time (last 2.0 million years), but not during the Holocene.
- **Seismic**—Pertaining to earthquake or earth vibration, including those that are artificially induced.
- **Subsidence**—Gradual settling or sinking of the earth=s surface with little or no horizontal motion, usually as the result of the withdrawal of oil, natural gas, or groundwater, or hydrocompaction.
- **Surface Rupture**—An observable break in the ground surface and associated deformation resulting from movement along a fault.

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## 6.3 FLOODING HAZARDS

This section describes the existing flood hazards within Beverly Hills, as well as the flood protection measures provided by federal, state, and local programs. In addition, federal, state, and local regulations pertaining to flood hazards are provided. Flood hazards are an important consideration to the General Plan Update because protective measures and planning can provide a reliable and safe environment for City's economic health and future development. The information for this section comes from a variety of documents, including the Beverly Hills General Plan Conservation Element, the City's Office of Emergency Management, and the City's Hazard Mitigation Action Plan.

### ■ Existing Conditions

#### ***Surface Water Drainage in the City***

The City of Beverly Hills is located within the boundaries of the Ballona Creek Watershed. The watershed is approximately 130 square miles; the major tributaries to Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains. Due to the extensive modifications of Ballona Creek and its tributaries, natural hydrologic functions have been significantly reduced within the Watershed. Approximately 40 percent of the Watershed is covered by impervious surfaces. Section 3.3 (Storm Drains) and Section 5.2 (Hydrology and Water Quality) contain additional information on the City's tributaries and its watershed, respectively.

The City's drainage system drains into Ballona Creek. Ballona Creek is predominately channelized and highly developed along the channel with both commercial and residential properties. Most of the drainage network is controlled by structural flood control measures, including debris basins, storm drains, underground culverts, and open concrete channels. Former streams in the major canyons have been channelized and remain open channels at various locations, although some have been converted to underground flood control channels such as Benedict Canyon Creek.

#### ***Rainfall***

Precipitation data for the City is based on data collected by the Los Angeles County Department of Public Works (LACDPW) and the City's rain gauge station at City Hall. Historical precipitation ranges from a minimum of zero (in 1989) to a maximum of 59 inches (in 1998 during El Nino). Generally, the City experiences very little precipitation between May and October. An average of 17.3 inches of rain is measured annually.<sup>109</sup>

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<sup>109</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 144.

As of May 2005, the City has received 38.64 inches of rain, according to the City's rain gauge.<sup>110</sup> This is more than twice the City's annual average. The maximum rainfall in a 24-hour period during the 2004-05 rainy season was 2.53 inches.

### **Drainage Facilities**

The La Cienega area, in the northeastern portion of the City, has been substantially relieved of tributary waters through the design and installation of flood control channel projects by the U.S. Corps of Engineers, the Los Angeles County Flood Control District (LACFCD), and the City of Beverly Hills. Currently, the LACFCD's Drainage Area flood control system is one of the world's largest and most extensive flood protection infrastructures. More recently, the system has undergone extensive upgrades and includes the storm water relief upgrade of the Holly Hills Unit 7 Drainage System in 2004, a regional storm water conveyance system specifically constructed to replace the undersized drainage system that served both flood zone sectors of the City of Beverly Hills and contiguous areas of Los Angeles. As a result, Beverly Hills and contiguous areas of Los Angeles will be less susceptible to flooding conditions, flood related damages and loss of property.<sup>111</sup>

The City works to mitigate problems regarding flood issues when they arise, and also implements flood mitigation programs and activities. The City performs routine inspection and cleaning of all storm water catch basins and culverts on a monthly maintenance schedule. The City performs, as well, periodic inspection and cleaning of catch basins owned and operated by LACFCD in key locations within the City prior to storm events. The City also regularly schedules street cleaning to remove organic and non-organic debris from roadways to mitigate or reduce debris entering catch basins. Furthermore, the City uses building codes, zoning codes and various planning strategies to address development in areas of known hazards, and applies the appropriate safeguards.<sup>112</sup>

### **Flooding**

The Federal Emergency Management Agency (FEMA), as part of its statutory responsibilities to carry out the National Flood Insurance Program, has mapped most of the flood risk areas within the United States. FEMA has classified the City under Flood Zone "C," which does not require mandatory flood mitigation enforcement.<sup>113</sup> However, there are two areas located in the City that are considered "Flood Areas." These areas are illustrated in Figure 6.3-1. A total of 1,233 parcels (a mix of commercial, single and multi-family) are located within the City's Flood Zones.<sup>114</sup> Since the completion of the upgrade to the Holly Hills Unit 7 Drainage System, the continued susceptibility of these areas to

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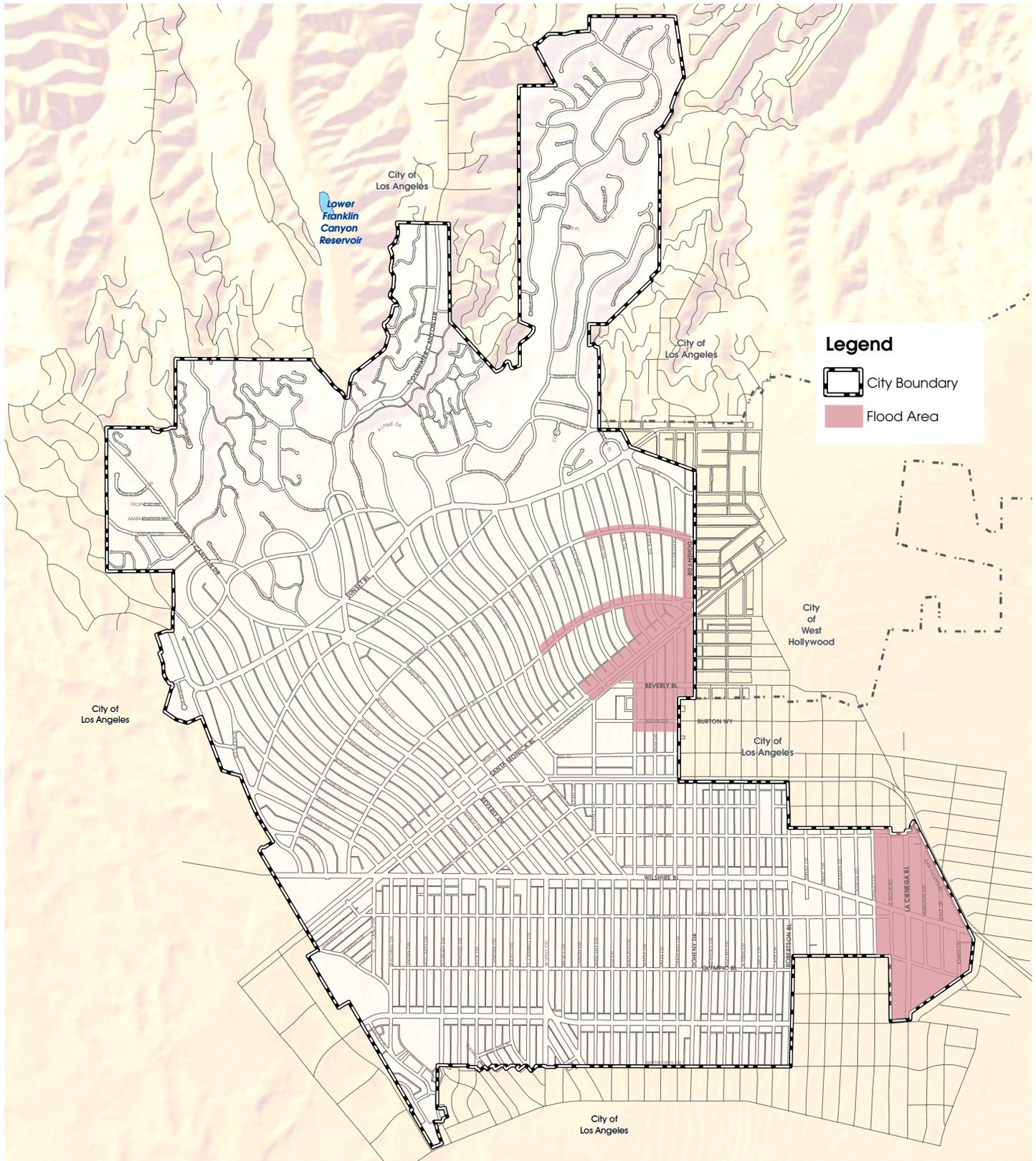
<sup>110</sup> Telephone Conversation, Shana Epstein, Public Works Project Development Manager, May 18, 2005.

<sup>111</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 145.

<sup>112</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 154.

<sup>113</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 148.

<sup>114</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 39.



Source: City of Beverly Hills, February 2005

N:\GISProjects\Beverly\_Hills\_GPU\_10600\Flood.mxd



0 900 1,800 3,600 Feet

Figure 6.3-1



flooding is being reassessed. Flooding during the 2004-05 rainy season did not occur in the portions of the City described as an area previously prone to flooding.

Floods are generally classed in two types: flash or slow-rise. Slow-rise occurs in flood plains near a river or other body of water. Flash floods result from large and intense rainfalls that occur over short periods of time.<sup>115</sup> Flooding may occur when the amount of water generated from rainfall and runoff exceeds a storm water system's capability to remove it. In addition, low-lying areas are susceptible to flooding.<sup>116</sup> Beverly Hills is susceptible to flash or fast-rise flooding because a high percentage of the surface is composed of impervious surfaces. The flooding would tend to occur in the winter months when precipitation is greater, and can occur within several seconds to several hours, with little or no warning.

Another potential source of flooding is "asphalt creep." The street space between the curbs of a street is a part of the flood control system. As water accumulates in the streets, it is directed towards the underground portion of the flood control system. As streets are resurfaced and new layers of asphalt are added, the street's water-carrying capacity is reduced as the height of the asphalt increases. Thus, the original capacity of the storm drain system is reduced over time. Future re-paving of the street will continue to reduce the engineered capacity even more.<sup>117</sup>

### **Hillside Flooding**

The hillside area in the City was largely developed prior to enactment in the 1950s of codes specifically designed to address grading, slope cuts, and runoff. Such standards are now found in the Uniform Building Code. Approximately 40 percent of the City (north of Sunset Boulevard) is located in the hills and canyons of the Santa Monica Mountains. These relatively steep hillside areas were largely developed with residential land uses prior to enactment in the 1950s of grading standards now found in the Uniform Building Code. Approximately 95 percent of this area is developed to the capacity of the zoning. As in the case of any developed hillside areas, heavy rains can and do cause occasional hillside slope failures such as those that occurred during the record 2004/05 rainy season.

### **Historical Flooding**

Flooding events have occurred primarily in the southeastern and northeastern portions of City. The southeastern portion of the City is generally bounded by San Vicente Boulevard to the east, Burton Way/Clifton Way to the north, and La Cienega Boulevard to Olympic Boulevard to the south. The northeastern sector is bounded by Doheny Drive from Elevado Avenue to Third Street to the east, and Santa Monica Boulevard and Civic Center Drive to the west.

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<sup>115</sup> Beverly Hills 2005 Draft Multi-Hazard Functional Plan, p.16.

<sup>116</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 149.

<sup>117</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 147-48.

The southeastern sector of Beverly Hills experienced significant flooding in February 1978, causing the explosion of a natural gas service, loss of business, and numerous flooding of multi-family residential and commercial properties with subterranean parking. Similar, but less severe flooding events occurred in 1980, 1992 and 1993 in this area.<sup>118</sup> The northeastern sector was most recently affected by flooding in February 2003, causing flooding of subterranean garages, loss of personal property, including vehicles, and temporary loss of electric and gas service to the buildings in the 300 North Oakhurst Drive/Doheny Drive areas. Fortunately, none of the flooding events in the City has had any significant long term effects.<sup>119</sup>

During the winter storm watch months of January and February, 2005, the City reported 20 major and 10 minor private property hillside slope failures, for a total estimated loss of over two million dollars.<sup>120</sup> Significantly, since completion of the upgrade to the Holly Hills Drainage System, no flooding was reported in the portions of the City described in Figure 6.3-1 as flood zones.

### **Dam and Reservoir Inundation**

Dam/reservoir failures result from a number of causes, which can be natural and/or manmade. An earthquake, erosion of the foundation, improper siting, structural/design flaws or rising floodwaters, individually or in combination, can result in the release of large amounts of water.<sup>121</sup>

The City's Greystone Reservoir<sup>122</sup>, located in the lower Trousdale Estates area, introduces a risk of full or partial reservoir or dam failure. Greystone reservoir is constructed of concrete and holds 19.2 million gallons of water.<sup>123</sup> For a complete discussion of the City's reservoirs, see Section 6.1 (Water Infrastructure). If the reservoir were to fail, the escaping water would flow in a southerly direction reaching the area bounded by Doheny Road and Foothill Road to the west, Doheny Drive to the east, and Sunset Boulevard and Santa Monica Boulevard to the south.<sup>124</sup> Several factors influence the severity of such an event, including the amount of water impounded and the type of infrastructure located downstream.

The City also has a total of nine above and partially below-ground storage reservoirs. Five reservoirs are above ground structures constructed of steel and hold one million gallons each. The remaining four (4) are constructed below or partially below ground level. One reservoir below ground holds two million gallons. The five above-ground reservoirs and one below or partially below ground reservoir are each capable of producing a flood wave

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<sup>118</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 143.

<sup>119</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 143.

<sup>120</sup> Email correspondence, Pamela Mottice, Director of the Department of Emergency Management, May 18, 2005.

<sup>121</sup> Beverly Hills 2005 Draft Multi-Hazard Functional Plan, p. 17.

<sup>122</sup> The California Department of Water Resources classifies the Greystone Reservoir as a reservoir and dam.

<sup>123</sup> Beverly Hills 2005 Draft Multi-Hazard Functional Plan, p. 17.

<sup>124</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, page 150.

if the structure suffers a catastrophic breach. Damage to the structures caused by an earthquake, however, would most probably be a minor breach, which would allow time for warning and reduction of the stored water in the reservoir. The reservoir at the Greystone Mansion is constructed below ground level, yet is built at an elevation that a breach in the structure would create a flood wave in the area below the mansion. Greystone reservoir is constructed on concrete and holds 19.2 million gallons of water. Lastly, Coldwater and Sunset reservoirs are at elevations that present no potential for flood wave.<sup>125</sup>

FEMA requires that all reservoir owners develop Emergency Action Plans (EAP) for warning, evacuation, and post-flood actions. Although there may be coordination with county officials in the development of the EAP, the responsibility for developing potential flood inundation maps and facilitation of emergency response is the responsibility of the reservoir owner.

The City of Beverly Hills lies in the inundation path of the Lower Franklin Canyon Dam which is located north of the City. The Lower Franklin Canyon Dam is a hydraulic fill dam, which was constructed in 1915. This type of dam is subject to extensive seismic damage and in 1976 Lower Franklin Dam was taken out of service. To maintain the water reserve, Lower Franklin Reservoir was constructed in 1982 as a shaped and paved reservoir with storm water by-pass capabilities. The reservoir has a 200 acre-feet capacity and can be drained to half capacity in 72 hours and completely emptied in 216 hours.<sup>126</sup> The National Inventory of Dams characterizes this dam with significant hazard potential. Dams with significant hazard potential are those in which failure or misoperation would result in no probable loss of human life but can cause economic loss, environmental damage, and disruption of lifeline facilities.<sup>127</sup>

In the event of a breach of the Lower Franklin Reservoir, the residential area north of Carmelita Drive would be exposed to immediate and severe danger. Below that point, the danger diminishes rapidly although flooding of most structures in this section of the inundation path would occur. Approximately 1,200 people live in the sector of the inundation area subject to severe danger and provision for evacuation of this population is required in the event of a breach in the structure.<sup>128</sup>

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<sup>125</sup> Beverly Hills 2005 Draft Multi-Hazard Functional Plan, p. 17.

<sup>126</sup> Beverly Hills 2005 Draft Multi-Hazard Functional Plan, p. 17.

<sup>127</sup> Personal conversation, Pamela Mottice Muller, Director, Office of Emergency Management, May 23, 2005.

<sup>128</sup> Beverly Hills 2005 Draft Multi-Hazard Functional Plan, p. 17.

## ■ Regulatory Setting

### **State**

#### **California Water Code**

California law makes local governmental agencies responsible for flood control. Section 8401, paragraph (c), of the California Water Code states, “The primary responsibility for planning, adoption, and enforcement of land use regulations to accomplish flood plain management rests with local levels of government.” Locally, Beverly Hills falls under the jurisdiction of the Los Angeles County Flood Control District, which regulates and plans flood control activity in Los Angeles County.

#### **State of California Uniform Building Code**

The state of California Building Code (CBC) contains requirements for constructing structures in flood hazard zones as described below. These requirements are consistent with FEMA requirements for non-residential development in a 100-year flood plain.

Section 3106 of the CBC outlines the requirements of new or replacement mechanical and electrical systems proposed within flood hazard zones. This section only allows the placement of mechanical and electrical systems below the base flood elevation if properly protected to prevent water from entering or accumulating within the system components.

Section 3107 of the CBC outlines the building requirements of structures within the FEMA designated Zones. Such requirements are that all floors below the base flood elevation must be constructed and engineered to be flood-resistant, or the floor must only be used for storage, parking, access, or foyers.

### ■ Local

#### **Beverly Hills Municipal Code**

Title 9, Chapter 7 of the BHMC restricts construction below the flood level in the Flood Hazard Areas in the City. Construction in these areas is subject to provisions related to floor levels and openings for residential and non-residential structures as well as protection of new and existing mechanical and electrical systems.

### ■ Issues

- Beverly Hills is highly urbanized and as a result of increased paving, can lead to an increase in volume and velocity of runoff after a rainfall event, exacerbating the potential flood hazards. The City’s steep hillside areas are also more susceptible to runoff and slope failures. New development in these areas will require careful adherence to current grading, soil compaction, maximum slope, and drainage regulations.

- With the completion of the upgrade to the Holly Hills drainage system, modifications easing construction restrictions in the City's flood zone may be warranted.



## 6.4 FIRE HAZARDS

This section provides a general description of the urban and wildland fire hazards that exist within Beverly Hills. Fire and emergency services for urban fire prevention are discussed in Section 9.7 (Fire and Emergency Services) of this Technical Background Report. Information for this section was obtained from the City's 2004 Hazard Mitigation Plan, as well as the Multi-Hazard Functional Plan, and discussions with the Beverly Hills Fire Department.

### ■ Existing Conditions

#### ***Background***

Major fires are generally classified as two types: urban fire, or wildland fire. Generally, the wildland fire season extends from early spring to late fall, however unseasonable hot, dry or windy weather conditions can present wildland fire hazards at any time. Hazards arise from a combination of hot weather, an accumulation of vegetation, and low moisture content of the air. These conditions, if coupled with high winds and years of drought, can compound the potential impact of a fire.

Cities such as Beverly Hills, that are built within or adjacent to hillsides or mountainous areas, have increased the number of people living in heavily vegetated areas where wildlands meet urban development. This is also referred to as the wildland/urban interface. Beverly Hills has classified its vulnerable hillside areas as the Very High Fire Hazard Severity Zone (VHFHSZ) shown in Figure 6.4-1. A fire along the wildland/urban interface can result in major losses of property and structures. The 1991 "Tunnel Fire" in the East Bay hills above Berkeley and Oakland is an example of an urban wildfire. The areas that burned were densely populated and many of the homes had wood roofs. The situation was compounded by narrow access roads and diminished water pressure. The fire storm was fueled by heavy winds and extremely dry conditions. The Tunnel Fire is the best example of the type of fire potential that exists within Beverly Hills.

Generally, there are three major factors that sustain wildfires and allow for predictions of a given area's potential to burn. These factors include fuel, topography, and weather. Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. The type of prevalent fuel directly influences the behavior of wildfire. The volume of available fuel is described in terms of fuel loading.

Fuel sources are diverse and include everything from dead tree needles, leaves, twigs, and branches to dead standing trees, live trees, brush and cured grasses. Like much of Southern California, chaparral is a primary fuel prevalent in Beverly Hills along with grasses, non-native vegetation, and large trees such as junipers, palm, eucalyptus, and pines. All of these fuel types are highly combustible. Light fuels such as grasses burn quickly and serve as a catalyst for fire spread. Man-made structures and other associated combustibles are also considered fuel sources.

An area's terrain and land slopes, or topography, affect its susceptibility to wildfire spread. Fire intensities and rates of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. For example, if the percentage of uphill slope doubles, the rate of spread in wildfire will likely double. Gulches and canyons can funnel air and act as chimneys, which intensify fire behavior and cause the fire to spread faster.

Most of the developed area in the VHFHSZ zone is on south facing slopes, which are exposed to more thermal heating by the sun. As a result, fires will start and spread more readily due to the pre-heated condition of the fuel and the lower fuel moisture content. Numerous canyons, saddles, and ridges in the VHFHSZ will also contribute to erratic fire behavior due to the funnel and subsequent acceleration effect it will have on wind traveling through the area.<sup>129</sup> The natural arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.

Weather components such as temperature, relative humidity, and wind also affect the potential for wildfire. Areas where annual precipitation is less than 30 inches per year are extremely fire susceptible. High temperatures and low relative humidity dry out the fuels that feed the wildfire, which can create a situation where fuel will more readily ignite and burn more intensely.

Wind is considered to be the primary factor that influences fire spread.<sup>130</sup> The greater a wind, the faster a fire will spread, and the more intense it will be. The "Santa Ana" winds, which are heated by compression as they flow down to Southern California from Utah, create a particularly high risk, as they can rapidly spread what might otherwise be a small fire. Beverly Hills experiences Santa Ana wind conditions typically in the fall months. A fire starting in the City will spread rapidly and has the potential of overwhelming initial attack forces and destroying structures within minutes of ignition. A fire starting adjacent to Beverly Hills in the City of Los Angeles could quickly burn into the city either by direct flame contact or by fire brands being carried by the winds and spotting onto structures or combustible vegetation. Wind bends the flames to pre-heat the fuel ahead and can carry fire brands up to one quarter mile or more ahead of the flame front. The majority of the catastrophic fires that Southern California has experienced have occurred in the months of September, October, and November when Santa Ana winds typically occur.

Recent drought conditions contribute to concerns about wildfire vulnerability. The term drought is applied to a period in which an unusual scarcity of rain causes a serious hydrological imbalance. Unusually dry winters, or significantly less rainfall than normal, can lead to relatively drier conditions and leave reservoirs and water tables lower. Drought leads to problems with irrigation and may contribute to additional fires, or additional difficulties in fighting fires.<sup>131</sup> Fortunately, after over six years of drought conditions in Southern California, 2005 brought a significant amount of rain in the winter months.

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<sup>129</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, p. 123.

<sup>130</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, p. 122-123.

<sup>131</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, p. 123.

### **Wildland Fire Hazard**

Beverly Hills is bounded on the north by hillside and canyon areas. Canyons that empty into the City's boundaries are Benedict, Franklin, Coldwater, and Trousdale Canyons. Benedict, Coldwater, and Trousdale Canyons are densely populated, with Franklin Canyon the least developed of the four. The dense wild brush of Franklin Canyon extends to the boundaries of the City. If a fire ignited in or around this vicinity, the brush would provide plenty of fuel to send fire brands (embers) raining down on the City within minutes. As previously mentioned, due to the extensive hazards originating in the hills north of Sunset Boulevard, the area has been designated a Very High Fire Hazard Severity Zone (VHFHSZ). Figure 6.4-1 identifies the VHFHSZ within the City, as well as the locations of the City's fire stations.

Approximately 36 percent of the City is located in the VHFHSZ, with approximately 1,640 single family residences and 3,700 people. The density of the area and low flammable landscaping will prevent a wildfire from spreading continuously through the City, however firebrand spot ignitions from undeveloped areas surrounding the City, vegetation adjacent to homes, and ignitions directly on homes, will principally cause residential destruction. Burning homes, especially those with flammable wood roofs, will initiate structure-to-structure fire spread, particularly down wind during a severe Santa Ana (an urban conflagration). Over 25 percent of the homes in Beverly Hills have flammable wood roofs, which are a chief cause of home loss during urban wildfires. Bearded palm trees containing persistent dead fronds will also spot ignite and contribute large burning brands.<sup>132</sup>

### **Urban Fire Hazard**

Due to the extensive amount of spotting anticipated during a wildfire, wildfires will not be confined to the FHFHSZ. Homes will continue to ignite and burn south of Sunset Boulevard, affecting the entire City. Areas outside the VHFHSZ could also ignite as a result of an earthquake, or some other phenomena. A disruption in the water system could allow a normally controllable structure fire to escape containment by fire forces and spread to adjoining buildings; or a fire that starts in the flatlands could be wind driven from the roof of one building to the roofs of adjoining buildings. In the area outside the VHFHSZ, many wood shake or shingle roofs exist and there is a potential for fires being driven from roof to roof faster than firefighting efforts can keep up under strong Santa Ana wind conditions.<sup>133</sup>

Other potential high cost or fatal fire scenarios exist within the City. Beverly Hills is home to three very large hotels having occupancies in excess of 500 persons per day, 32 high-rise buildings, and a densely populated retail and commercial district. Of particular concern are two high-rise buildings that are residential occupancies and did not fall under the 1998 retrofit sprinkler mandate imposed on buildings 55 feet or higher. These are the

<sup>132</sup> Firewise Communities/USA Assessment, Beverly Hills, California Site, June 2004.

<sup>133</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, p. 121.

only two high-rise buildings in the City that are not equipped with sprinkler systems and no plans exist to install the systems.

Another identified area of concern for Beverly Hills is the lack of adequate gallons per minute of the water supply in the area served by Zone 9, which is located between the city limit and Coldwater Canyon Drive north of North Beverly Drive.

### ***Historical Wildland Fires***

Records from the U.S. Department of Forestry reveal that wildland fires occur on a regular basis almost every year, while large fires occur fairly regularly every ten years. The occurrence of major wildfires in a particular region corresponds to the age of its vegetation. Often renewed growth of vegetation after a major fire tends to pose a lesser risk during the first ten years of growth. However, as dead vegetation accumulates, the potential for a major wildfire increases as these materials are more susceptible to ignition and facilitate the spreading of flames. Therefore, the occurrence of wildland fires tends to be cyclical, where a decade will pass with few fires followed by a decade with several large fires. In addition, the occurrence of the largest fires also corresponds to periods of extremely high wind conditions.

According to the California Department of Forestry and Fire Protection (CDF), so far in 2005 from January 1<sup>st</sup> through June 1<sup>st</sup>, there have been over 1,400 fires burning over 2,000 acres in the CDF jurisdiction. In 2004, there were over 5,500 fires with over 168,000 acres burned, and in 2003, there were almost 6,000 fires which burned over 404,000 acres. These figures included land within state jurisdiction only, and would be much higher factoring in fires within federal and local jurisdictions. The fall of 2003 marked the most destructive wildfire season in California history. In a ten day period, 12 separate fires raged across Southern California in Los Angeles, Riverside, San Bernardino, San Diego, and Ventura counties. The massive “Cedar” fire in San Diego County alone consumed over 2,800 structures and burned over a quarter of a million acres.<sup>134</sup>

Beverly Hills has experienced one wildfire, the Coldwater Canyon Fire on August 7, 1929. The fire burned 300 acres within the City limits.<sup>135</sup>

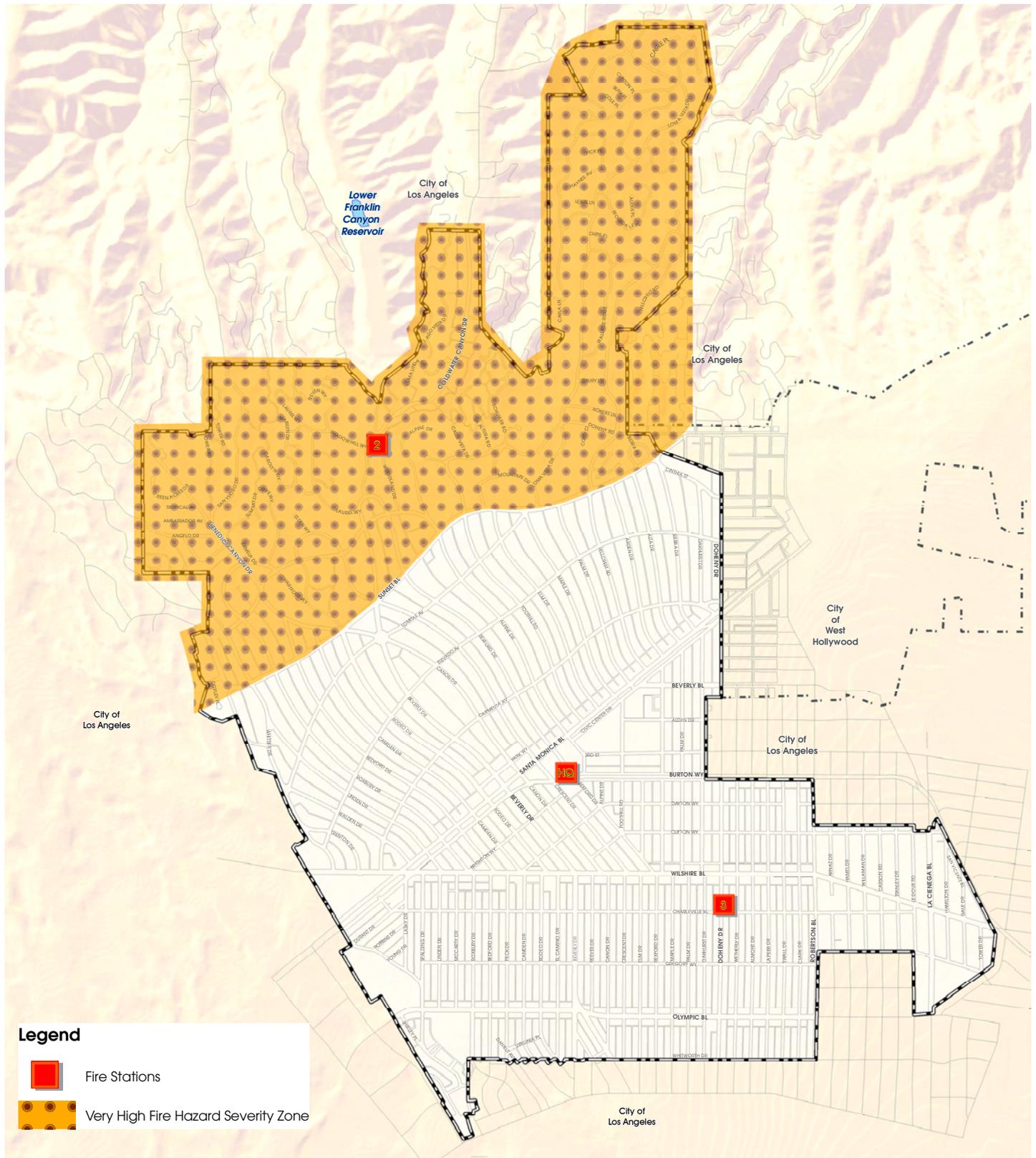
### ***Fire Prevention and Suppression Programs***

In 1998, the Beverly Hills Fire Department (BHFD) installed a Remote Automated Weather Station (RAWS) in the hillside area just outside the City in Franklin Canyon. Data from the RAWS assists fire officials in determining the need for augmenting or redeploying fire resources depending on current and anticipated weather conditions. As a result of RAWS, the BHFD instituted a Red Flag Engine Program whereby the firefighting resources are augmented in the VHFHSZ on days where the fire weather danger is extremely high. The program calls for hiring additional personnel to staff an

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<sup>134</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, p. 117-118.

<sup>135</sup> Firewise Communities/USA Assessment, Beverly Hills, California Site, June 2004.



Source: City of Beverly Hills, February 2005

N:\GISProjects\Beverly\_Hills\_GPU\_10600\Fire.mxd

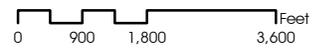


Figure 6.4-1



engine company, which is then housed at Fire Station 2 for the duration of the extreme danger period. In addition, pre-designated streets which normally allow parking are posted as no parking zones to allow for ingress of fire resources and egress of civilian traffic.<sup>136</sup>

For the VHFHSZ, The BHFD has also developed “Pre-Attack Plans” that enable the fire suppression resources to locate combustible roofs, evacuation routes, safe refuge areas, and resident assemblage locations. These resources help firefighting forces make critical decisions during emergency situations. Pre-Attack Plans are also made available to outside agencies who are called for Mutual Aid assistance and that may not be familiar with the area.

In addition, in 2004, the BHFD and residents within the VHFHSZ initiated the Firewise Communities/USA Program, which is designed to enable communities to achieve a high level of protection against wildland/urban interface fire loss while maintaining a sustainable ecosystem balance. The BHFD established a Beverly Hills Firewise Board comprised of residents within the VHFHSZ, and both the BHFD and Board are currently in the process of implementing area-specific solutions within the VHFHSZ to protect this area from wildland fire.<sup>137</sup>

The BHFD also provides ongoing community education and warning with the following programs:

- Annual Occupancy Inspections for all public, commercial and residential occupancies
- CERT (Citizen Emergency Response Team) training
- Local cable television and informational programs educating citizens of the danger of wildland fires, how to prevent them and how to react should one start
- Mailings which educate the public on fire retardant roofs, seismic awareness, vegetation management, and overall preparedness.
- Informational brochures to inform citizens about the need for evacuation plans and tips on home protection.
- Disaster Assistance Programs taught to employees in the Beverly Hills Unified School District
- Fire Safety and Prevention in schools
- Teleminder System: an automatic computer dialing system to assist in the notification and early warning of the residents in the high-hazard zone

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<sup>136</sup> City of Beverly Hills Hazard Mitigation Plan, September 2004, p. 128.

<sup>137</sup> Firewise Communities/USA Assessment, Beverly Hills, California Site, June 2004.

## ■ Regulatory Setting

### ***Federal***

#### **Uniform Fire Code**

The Uniform Fire Code contains regulations relating to construction and maintenance of buildings and land uses. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and premises. The Code contains specialized technical regulations related to fire and life safety.

### ***State***

#### **California Fire Code (Title 24, Part 9, California Code of Regulations)**

The California Fire Code is Part 9 of the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. The California Fire Code incorporates the Uniform Fire Code with necessary California amendments. This Code prescribes regulations consistent with nationally recognized good practice for the safeguarding to a reasonable degree of life and property from the hazards of fire explosion, and dangerous conditions arising from the storage, handling and use of hazardous materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises and provisions to assist emergency response personnel.

#### **California Health and Safety Code**

State fire regulations set forth in Section 13000 et seq. of the California Health and Safety Code, include regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

### ***Local***

#### **Beverly Hills Municipal Code**

##### *Chapter 2 (Fire Code)*

Sections 16.1 and 17 of this chapter provide standards specific to the clearance of brush or vegetative growth away from structures and roadways; Sections 1003.2.1 and 1003.2.1.1 provide regulations for fire sprinkler installation in new and existing buildings; and Section 1503.4 requires that by no later than July 1, 2013, all roof coverings in the City shall be fire retardant Class A.

### Chapter 37 (Amendments to California Building Code)

This chapter establishes requirements for the VHFHSZ. Regulations are applicable to all buildings and structures used for human occupancy in the Zone. Exterior walls and eaves are required to be of one-hour fire-resistive construction, and buildings or structures constructed over slopes shall have all under-floor and deck areas enclosed, and such enclosures shall be of one-hour fire resistive construction.

#### Weed Abatement Program

The Beverly Hills Fire Department maintains an aggressive annual Brush Clearance Inspection program. Mailings to residents begin in early May and physical inspections begin in early June. Properties who have not complied with clearance requirements are ultimately referred to the City prosecutor's office.

#### ■ Issues

- There are two high-rise (75 feet or higher) multi-family residential buildings on N. Oakhurst Dr. in the City that do not have a fire sprinkler system, which is a potential fire hazard and potential loss of life for the City.
- Flammable wood roofs in Beverly Hills are numerous and expansive in volume. Many contain too much exposure for an engine company to handle. Under current conditions, flammable wood roofs will be a significant problem during a wildfire. Currently, an ordinance requires that all non Class A roof coverings be replaced by the year 2013. An accelerated plan for replacement of these roofs will make the community safer, sooner.
- Wild land fires that occur during high winds and/or low humidity conditions can create a situation beyond the capabilities of the City's available fire fighting force. Under these conditions it would become necessary to activate the state Mutual Aid System.
- Evacuation of hillside homes could be difficult to coordinate in a timely manner due to terrain, narrow streets, and population density and has the potential of delaying ingress and deployment of fire resources.
- Water supply, both in terms of volume and pressure, is always a critical factor in fighting fires and particularly in keeping fires in the wildland/urban interface areas manageable by initial attack forces. Generally speaking, the water supply to most areas of the City is very good, however an area of concern is the area served by Zone 9. This area is known to have insufficient gallons per minute fire flow and plans are being developed to improve the flow capacity and reliability to this area.
- The current requirement of 100 feet of brush clearance from structures needs to be increased, possibly to 200 feet, to increase defensible space around structures in the VHFHSZ.

#### ■ References

Beverly Hills, City of. 2004. *Hazard Mitigation Action Plan*.

———. 2005. *Multi-Hazard Functional Plan*, March.

Firewise Communities/USA. 2004. *Firewise Communities/USA Assessment, Beverly Hills, California Site*, June.

## 6.5 HAZARDS AND HAZARDOUS MATERIALS

This section provides information on hazardous materials and waste management associated with existing land uses within the City of Beverly Hills. A hazardous material is defined as any material that due to its quantity, concentration, physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and any material that a business or the local implementing agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released. Information for this section was obtained from the City of Beverly Hills Fire Department, City of Beverly Hills Hazard Mitigation Action Plan, City of Beverly Hills Multi-Hazard Functional Plan, City of Beverly Hills Municipal Code, and the Department of Toxic Substances Control (DTSC).

### ■ Existing Conditions

#### ***Hazardous Materials Use***

Hazardous materials in the City are routinely used, stored, and transported in commercial/retail businesses as well as in educational facilities, hospitals, and households. Hazardous materials use and waste generators in the City include businesses, public and private institutions, and households. Federal, state, and local agency databases maintain comprehensive information on the locations of facilities using large quantities of hazardous materials, as well as facilities generating hazardous waste. Some of these facilities use certain classes of hazardous materials that require accidental release scenario modeling and risk management plans to protect surrounding land uses.

#### ***Transportation of Hazardous Materials***

The transport of hazardous materials through the City of Beverly Hills is regulated by the state Department of Transportation and California Highway Patrol. Although there are no state highways or interstate freeways that traverse or provide direct access to the City, major truck routes are located within the City where hazardous materials can be routinely transported by truck. Two of the major truck routes in the City are Wilshire Boulevard and Santa Monica Boulevard, both of which crosses through the south-central portion of the City. In general, with the exception of high-level radioactive materials and certain poisons and explosives, all classes of hazardous materials can be transported on roadways in the City. However, because Section 31303 of the California Vehicle Code and U.S. Department of Transportation regulations require that hazardous materials be transported by routes with the least overall travel time, many of the local streets in the City are not used for the transport of hazardous materials. There has been no record of a hazardous material spill or incident in the City.<sup>138</sup> Although the City has little or no

<sup>138</sup> Beverly Hills, City of. 2004. *Hazard Mitigation Action Plan 2004-2009*, 19 October.

industry that uses significant amounts of hazardous materials, materials are in transit through the City from other locations outside the City, and traverse the City en route to other destinations outside the City.

### **Existing Hazardous Material Sites**

#### **Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)**

The *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) was developed to protect the water, air, and land resources from the risks created by past chemical disposal practices. Under CERCLA, the United States Environmental Protection Agency (EPA) maintains a list, known as CERCLIS, of all contaminated sites in the nation that have in the past or are currently undergoing clean-up activities. CERCLIS contains information on current hazardous waste sites, potential hazardous waste sites, and remedial activities. This includes sites that are on the National Priorities List (NPL) or being considered for the NPL. No sites within the City are currently listed in the CERCLIS database.<sup>139</sup>

#### **Cortese List**

The Hazardous Waste and Substances Sites (Cortese) List is a tool used by the state and local agencies and developers to comply with the *California Environmental Quality Act* (CEQA) requirements in providing information about the location of hazardous materials release sites. Government Code section 65962.5 requires the California EPA to develop an updated Cortese List at least annually. No sites within the City are currently listed under the Cortese List.<sup>140</sup>

#### **DTSC Site Mitigation and Brownsfield Reuse Program (“CalSites”) Database**

The Site Mitigation and Brownsfield Reuse Program serves to cleanup and redevelop Brownfield sites for future use. Brownfields are properties that are contaminated, or thought to be contaminated, and are underutilized due to remediation costs and liability concerns. Often the remediation cost associated with a contaminated site serves as a major deterrent to any planned reuse of that site.

The DTSC introduced the VCP to protect human health, cleanup the environment, and get property back to productive use. Participants in the VCP are able to restore properties quickly and efficiently, and eliminate competition for DTSC funding. Sites eligible for VCP are generally low-priority hazardous waste sites. The following site is identified in the Site Mitigation and Brownsfield Reuse Program database as a VCP Property.

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<sup>139</sup> U.S. EPA, Superfund Information Systems, CERCLIS Database, website: <http://www.epa.gov/superfund/sites/cursites/>, accessed May 28, 2005.

<sup>140</sup> State of California, Environmental Protection Agency, Department of Toxic Substances Control, Hazardous Waste and Substances Site List (Cortese List), [http://www.dtsc.ca.gov/database/Calsites/Cortese\\_List.cfm?county=19](http://www.dtsc.ca.gov/database/Calsites/Cortese_List.cfm?county=19), accessed May 2005.

### Beverly Hills Lots 12 and 13—9315 Civic Center Drive<sup>141</sup>

This site consists of two vacant parcels (Lots 12 and 13) that were utilized as a railroad right-of-way from 1926 until 1998. Analytical results from soil samples collected at this site indicate that arsenic is present at elevated concentrations throughout the entire site down to 45 feet below ground surface (bgs). The site is currently owned by the Beverly Hills Land Company and was previously owned by Southern Pacific Railroad.<sup>142</sup> Southern Pacific Railroad has entered into a Voluntary Cleanup Agreement with DTSC for a Remedial Investigation, Risk Assessment, and Remedial Action Workplan.

### Regional Water Quality Control Board (RWQCB) Spills, Leaks, Investigations, and Cleanup (SLIC) List

The SLIC Program was established by the State Water Resources Control Board (SWRCB) to allow each of its nine Regional Boards to oversee the cleanup of illegal discharges, contaminated properties, and other unregulated releases adversely impacting the state's waters. Sites managed within the SLIC Program include sites polluted as a result of recent or historic spills, subsurface releases (e.g., pipelines, sumps), complaint investigations, and all other unauthorized discharges that pollute or threaten to pollute surface and/or ground waters.

One facility site within the City of Beverly Hills has been identified in the SLIC List maintained by the Los Angeles Regional Water Quality Control Board (LARWQCB). The SLIC Section of the LARWQCB oversees activities at non-underground storage tank (UST) sites where soil or groundwater contamination have occurred due to former industrial facilities and dry cleaners, where chlorinated solvents were spilled, or have leaked into the soil or groundwater. The facility and the substance released identified by SLIC is shown in Table 6.5-1.

<i>Name</i>	<i>Address</i>	<i>Substance Released</i>	<i>Status</i>
ARCO S.S. 1278	8800 Burton Way	Polyethylene terephthalate (PET)	Open <sup>a</sup>

SOURCE: LARWQCB SLIC List (<http://geotracker.swrcb.ca.gov/search/>)

<sup>a</sup> "Open" status indicates that the site is still under investigation and/or cleanup.

### Leaking Underground Fuel Tanks (LUFTs)

The LARWQCB also maintains an Underground Storage Tank Program (UST Program) that deals specifically with leaking fuel tanks. While there may be other constituents of concern resulting from leaking fuel tanks, the primary substance of concern of this

<sup>141</sup> State of California, Environmental Protection Agency, Department of Toxic Substances Control, Hazardous Waste and Substances Site List (Cortese List), [http://www.dtsc.ca.gov/database/Calsites/Cortese\\_List.cfm?county=19](http://www.dtsc.ca.gov/database/Calsites/Cortese_List.cfm?county=19), accessed May 2005.

<sup>142</sup> The DTSC data source references Union Pacific Railroad. However, Southern Pacific Railroad was the entity that operated the rail line and relinquished the right-of-way.

program is fuel. Most frequently, these fuel tank leaks are associated with common neighborhood gasoline service stations. According to the LARWQCB's Leaking Underground Fuel Tank (LUFT) database, the City of Beverly Hills has 35 identified LUFT sites. These facilities on the LUFT List are shown in Table 6.5-2.

### **Potentially Contaminated Sites**

Potentially contaminated sites within Los Angeles County, which includes the City of Beverly Hills, may be caused by various types of land uses including landfills, manufacturing facilities, industrial facilities, and medical facilities. Although these facilities and operations generally use and store hazardous materials legally, incidents involving the accidental releases of these materials may occur due to their large concentration at these locations.

Currently, the City of Beverly Hills does not operate any Class I landfills, which are used for the collection of hazardous wastes. The collection of household hazardous waste in the City is conducted by Los Angeles County, which conducts weekly household hazardous waste roundups throughout the County. Once or twice per year the household hazardous waste roundup is held in Beverly Hills, depending on the availability of a site. Household hazardous waste that are typically collected include deodorizers, cleaners, bleach, floor wax, spot remover, drain cleaner, furniture polish, aerosol cans, latex paints, oil paints, weed killer, fertilizer, antifreeze, pesticides, pool chlorine, household and auto batteries, garden chemicals, motor oil, and propane tanks. Despite efforts by the County to collect these household hazardous wastes, there remains the risk of improper use or disposal of these materials by residents. Adverse environmental impacts can occur when household hazardous materials are disposed of in unlined sanitary landfills that are not meant for hazardous materials. These hazardous materials may leach through the soil and contaminate groundwater.

Although incidents involving the inadvertent release of hazardous materials can happen anywhere, areas within the City that are subject to a higher risk of these incidents include locations near roadways that are frequently used for transporting hazardous materials such as Santa Monica and Wilshire Boulevards.

### **Emergency Response**

The release of a hazardous material to the environment could cause a multitude of problems to the environment, property, or human health, the significance of which is dependent on the type, location, and quantity of the material released. Although hazardous material incidents can happen almost anywhere, certain areas may be susceptible to a higher risk.

The City of Beverly Hills is a fully developed urban area, and faces multiple risks of potential hazardous material emergencies that are typically associated with an urban environment.

**Table 6.5-2 Facilities on LUFT List for the City of Beverly Hills**

No.	Name	Address	Substance Released	Status
1	ARCO S.S. 1278 (Former)	8800 Burton Way	Gasoline-automotive	Open <sup>a</sup>
2	Beverly Hills Cadillac Dealer	9231 Olympic Blvd.	Gasoline-automotive	Closed <sup>b</sup>
3	City of Beverly Hills	1137 Benedict Canyon Dr.	Aviation gasoline and additives	Closed
4	Beverly Hills Fire Dept.	445 Rexford Dr. N.	Waste oil/Used oil	Open
5	Beverly Hills High School	241 Moreno Dr.	Diesel fuel oil and additives	Open
6	Beverly Hills Hotel	9641 Sunset Blvd. W.	Gasoline-automotive	Closed
7	Beverly Hills Public Library	444 Rexford Dr. N.	Aviation gasoline and additives	Closed
8	BMW of Beverly Hills	8833 Wilshire Blvd. W.	Gasoline-automotive	Closed
9	Chevron	9975 Santa Monica Blvd.	Gasoline-automotive	Closed
10	Chevron #9-3532	9378 Wilshire Blvd.	Gasoline-automotive	Closed
11	Chevron #9-3532	9378 Wilshire Blvd.	Hydrocarbons	Closed
12	Chevron S.S. #9-3680	9601 Santa Monica Blvd. S.	Gasoline-automotive	Closed
13	City of Beverly Hills	180 Doheny Dr. S.	Hydrocarbons	Open
14	City of Beverly Hills	9357 3 <sup>rd</sup> Street W.	Gasoline-automotive	Closed
15	City of Beverly Hills	9268 3 <sup>rd</sup> Street W.	Gasoline-automotive	Closed
16	City of Beverly Hills	331 Foothill Road N.	Gasoline-automotive	Closed
17	Gregg Motors Lincoln Mercury	8965 Olympic Blvd. W.	Waste oil/used oil	Closed
18	Jurgenson's Market (Former)	409 Beverly Dr. N.	Gasoline-automotive	Closed
19	Mobile #18-GWX (Former #11-GWX)	8567 Wilshire Blvd.	Gasoline-automotive	Open
20	Mobile #18-LXB	401 Robertson Blvd. S.	Gasoline-automotive	Closed
21	Motor Doctors	195 Robertson Blvd. S.	Gasoline-automotive	Open
22	Nason Family Trust	223 Beverly Dr. S.	Gasoline-automotive	Closed
23	Royal Motors	9732 Santa Monica Blvd. S.	Gasoline-automotive	Closed
24	Southern CA Gas CO Beverly	400 Foothill Road N.	Gasoline-automotive	Closed
25	TOSCO/76 Station #0971	427 Crescent Dr. N.	Gasoline-automotive	Open
26	TOSCO/76 Station #0703	9988 Wilshire Blvd.	Gasoline-automotive	Open
27	Universal City Studios, Inc.	331 Maple Dr. N.	Aviation gasoline and additives	Closed
28	UNOCAL #1043	9045 Olympic Blvd. W.	Gasoline-automotive	Closed
29	UNOCAL #1086	9460 Olympic Blvd.	Gasoline-automotive	Closed
30	UNOCAL #1782	9055 Wilshire Blvd. W.	Hydrocarbons	Closed
31	UNOCAL #3664	8536 Wilshire Blvd.	Gasoline-automotive	Closed
32	William Morris Agency	151 S. El Camino Dr.	Gasoline-automotive	Open
33	Wilshire San Vicente Plaza	8383 Wilshire Blvd.	Gasoline-automotive	Closed
34	Wilshire Triangle Center	9777 Wilshire Blvd.	Gasoline-automotive	Closed
35	World Oil #62	391 Robertson Blvd. S.	Gasoline-automotive	Open

SOURCE: LARWQCB LUFT List (<http://geotracker.swrcb.ca.gov/search/>)

<sup>a</sup> "Open" status indicates that the site is still under investigation and/or cleanup.

<sup>b</sup> "Closed" status indicates that no additional investigation or cleanup is required at the site at this time, but does not mean that the contamination has been remediated.

The Beverly Hills Fire Department has primary responsibility in hazardous materials incidents within the City. In addition, the City Fire Department currently has a mutual aid agreement with the Los Angeles County Fire Department to provide additional aid and services when needed. The Health Hazardous Materials Division of the Los Angeles County Fire Department provides emergency response services for hazardous materials incidents. However, depending on the situation and location of a hazardous waste incident, agencies other than the City and County Fire Departments would also help provide emergency response.<sup>143</sup>

The agencies may include, but are not limited to the following:

- Department of Fish and Game;
- Army Corps of Engineers;
- Department of Transportation;
- California Department of Transportation;
- California Highway Patrol; and
- Southern California Air Quality Management District.

## ■ Regulatory Setting

A number of federal, state, and local laws and regulations have been enacted to regulate the management of hazardous materials. Implementation of these laws and the management of hazardous materials are regulated through programs administered by various agencies at the federal, state, and local levels. An overview of the key hazardous materials laws and regulations that apply to the City are provided below.

### **Federal**

Several federal agencies regulate hazardous materials. These include the U.S. EPA, the Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Applicable federal regulations are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR).

The U.S. DOT has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The U.S. Postal Service (USPS) has developed additional regulations for the transport of hazardous materials by mail. DOT regulations specify packaging requirements for different types of materials. EPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that wastes are delivered to their intended destinations.

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<sup>143</sup> City of Beverly Hills, 2005. *Multi Hazard Functional Plan*. March.

## State

### California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) has broad jurisdiction over hazardous materials management in the state. Within Cal/EPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law.

Along with the DTSC, the RWQCB is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the CCR. Additional state regulations applicable to hazardous materials are contained in Title 22 of the California Code of Regulations (CCR). Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

### Department of Toxic Substances Control

The DTSC regulates hazardous waste in California primarily under the authority of the federal *Resource Conservation and Recovery Act* (RCRA) of 1976, and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. In addition, DTSC reviews and monitors legislation to ensure that the position reflects the DTSC's goals. From these laws, DTSC's major program areas develop regulations and consistent program policies and procedures. The regulations spell out what those who handle hazardous waste must do to comply with the laws. Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. As such, the management of hazardous waste in the Policy Area would be under regulation by the DTSC to ensure that state and federal requirements pertaining to hazardous waste are complied with.

California law provides the general framework for regulation of hazardous wastes by the Hazardous Waste Control Law (HWCL) passed in 1972. DTSC is the state's lead agency in implementing the HWCL. The HWCL provides for state regulation of existing hazardous waste facilities, which include "any structure, other appurtenances, and improvements on the land, used for treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous wastes," and requires permits for, and inspections of, facilities involved in generation and/or treatment, storage and disposal of hazardous wastes.

Although there are numerous state policies dealing with hazardous waste materials, the most comprehensive is the *Tanner Act* (AB 2948) that was adopted in 1986. The *Tanner Act* governs the preparation of hazardous waste management plans and the siting of

hazardous waste facilities in the state of California. The act also mandates that each county adopt a Hazardous Waste Management Plan. To be in compliance with the *Tanner Act*, local or regional hazardous waste management plans need to include provisions that define (1) the planning process for waste management, (2) the permit process for new and expanded facilities, and (3) the appeal process to the state available for certain local decision.

### **Hazardous Materials Management Plans**

In January 1996, Cal EPA adopted regulations implementing a “Unified Hazardous Waste and Hazardous Materials Management Regulatory Program” (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, underground storage tanks, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency—the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. There are currently eight CUPAs that are certified to implement the Unified Program in Los Angeles County. The CUPA that has jurisdiction in the City of Beverly Hills is the Los Angeles County Fire Department.

State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. California’s Hazardous Materials Release Response Plans and Inventory Law, sometimes called the “Business Plan Act,” aims to minimize the potential for accidents involving hazardous materials and to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on site, to prepare an emergency response plan, and to train employees to use the materials safely.

### **California Accidental Release Prevention Program (CalARP)**

The CalARP program (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than a certain volume of specific regulated substances at their facilities. The CalARP program regulations became effective on January 1, 1997, and include the provisions of the federal Accidental Release Prevention program (Title 40, CFR Part 68) with certain additions specific to the state pursuant to Article 2, Chapter 6.95, of the Health and Safety Code.

The list of regulated substances is found in Article 8, Section 2770.5 of the CalARP program regulations. The businesses that use a regulated substance above the noted threshold quantity must implement an accidental release prevention program, and some may be required to complete a Risk Management Plan (RMP). An RMP is a detailed

engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The purpose of a RMP is to decrease the risk of an off-site release of a regulated substance that might harm the surrounding environment and community. An RMP includes the following components: safety information, hazard review, operating procedures, training, maintenance, compliance audits, and incident investigation. The RMP must consider the proximity to sensitive populations located in schools, residential areas, general acute care hospitals, long-term health care facilities, and child day-care facilities, and must also consider external events such as seismic activity.

### **Worker and Workplace Hazardous Materials Safety**

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers are to appropriately label containers, Material Safety Data Sheets are to be available in the workplace, and employers are to properly train workers.

### **Hazardous Materials Transportation**

The California Highway Patrol (CHP) and California Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations. Transporters of hazardous materials and waste are responsible for complying with all applicable packaging, labeling, and shipping regulations. The Office of Emergency Services (OES) also provides emergency response services involving hazardous materials incidents.

### **Investigation and Cleanup of Contaminated Sites**

The oversight of hazardous materials release sites often involves several different agencies that may have overlapping authority and jurisdiction. The DTSC and RWQCB are the two primary state agencies responsible for issues pertaining to hazardous materials release sites. Air quality issues related to remediation and construction at contaminated sites are also subject to federal and state laws and regulations that are administered at the local level.

Investigation and remediation activities that would involve potential disturbance or release of hazardous materials must comply with applicable federal, state, and local hazardous materials laws and regulations. DTSC has developed standards for the investigation of sites where hazardous materials contamination has been identified or could exist based on current or past uses. The standards identify approaches to determine

if a release of hazardous wastes/substances exists at a site and delineates the general extent of contamination; estimates the potential threat to public health and/or the environment from the release and provides an indicator of relative risk; determines if an expedited response action is required to reduce an existing or potential threat; and completes preliminary project scoping activities to determine data gaps and identifies possible remedial action strategies to form the basis for development of a site strategy.

### **Siting of Schools**

The California Education Code (Section 17210 *et seq.*) outlines the requirements of siting school facilities near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous materials, substances, or waste. The code requires that, prior to commencing the acquisition of property for a new school site, an environmental site investigation be completed to determine the health and safety risks (if any) associated with a site. Recent legislation and changes to the Education Code identify DTSC's role in the assessment, investigation, and cleanup of proposed school sites. All proposed school sites that will receive state funding for acquisition and/or construction must go through a comprehensive investigation and cleanup process under DTSC oversight. DTSC is required to be involved in the environmental review process to ensure that selected properties are free of contamination, or if the property is contaminated, that it is cleaned up to a level that is protective of students and faculty who will occupy the new school. All proposed school sites must be suitable for residential land use, which is DTSC's most protective standard for children.

### **Local**

#### **Los Angeles County Fire Department**

As the Los Angeles County CUPA, the Los Angeles County Fire Department (LACoFD) has jurisdiction in all unincorporated and most incorporated areas in the county, including the City of Beverly Hills. Serving as the CUPA, LACoFD's Health Hazardous Material Division (HHMD) directly administers programs related to waste generation, hazardous materials inventories, and risk management. The HHMD's mission is to protect the public health and the environment throughout Los Angeles County from accidental releases and improper handling, storage, transportation, and disposal of hazardous materials and wastes through coordinated efforts of inspections, emergency response, enforcement, and site mitigation oversight. The Los Angeles County Department of Public Works is a participating agency under the LACoFD CUPA and implements the underground storage tank program.

### **■ Issues**

- With increased development, there is an increased potential danger to the population from hazardous waste/material transportation through the City.

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## 6.6 POLICE SERVICES

This section identifies the police protection service providers in the City, and describes the staffing levels, equipment, staffing standards, number of and types of calls received, and crime prevention programs available. Information for this section is based on written information provided by the Beverly Hills Police Department and the City's website.

### ■ Existing Conditions

Law enforcement services in the City are provided by the Beverly Hills Police Department (BHPD). Protection services include emergency and nonemergency police response, routine police patrols, investigative services, traffic enforcement, traffic investigation, and parking code enforcement. The BHPD Headquarters is located at 464 North Rexford Drive in the City of Beverly Hills, across the street from the Beverly Hills City Hall.

Currently, the BHPD employs a total of 138 sworn officers and a professional civilian support staff of about 71 (i.e., clerical, jailers, dispatch, traffic support, forensic, etc.). Management of the agency includes the Chief of Police, 3 Captains, 7 Lieutenants, 20 Sergeants who serve as the first level of sworn supervision,<sup>144</sup> and 3 civilian mid-managers. Each of the Captains is responsible for a Division, discussed below (i.e., Field Services, Investigations, and Administrative Services). The BHPD currently has a ratio of approximately 3.8 officers per 1,000 residents, however the BHPD does not utilize a standard personnel-to-population ratio due to the vast disparity of night-time population (approximately 35,700 residents) to daytime population (approximately 250,000 people). The agency's main indicator of effectiveness is its response time to emergency calls, further discussed below. Other primary indicators include the following:

- Volume of calls for service
- Number of officers available at any given time
- Number of Part 1 crimes (Part I includes robbery, assault, residential and nonresidential burglary, vehicle burglary, theft from vehicle, grand theft automobile, and arson)

The Police Department is composed of the Office of the Chief and three major Divisions: Investigative Services Division, Administrative Services Division, and the Field Services Division.<sup>145</sup> These divisions are further discussed below.

### **Office of the Chief**

The Office of the Chief (Police Administrative office) is responsible for directing the overall operation and activity of the BHPD. Operations include planning, organizing, and administering a broad program of police services and running an effective law

<sup>144</sup> Hines, Michael Lt., 2005. Written communication from the Beverly Hills Police Department, Traffic Bureau Commander, 27 June.

<sup>145</sup> City of Beverly Hills, 2005. Website: [www.beverlyhills.org](http://www.beverlyhills.org), May.

enforcement program. The office also develops work programs for the various activities within the Department: managing and conducting personnel complaint investigations, media relations, activities of the intelligence unit, administration of the Department budget, oversight of grant programs and handling special reports and projects. In 2005, the BHPD employed ten full-time staff members in the Office of the Chief.

### ***Investigative Services Division***

This Division consists of the Crime Prevention Bureau and Detective Bureau. In 2005, the BHPD staffed a total of 38 full-time employees within this Division.

#### **Crime Prevention Bureau**

This Bureau, which consists of the Crime Prevention Detail and the School Resources Section, is responsible for maintaining all crime prevention and community awareness programs, including the Neighborhood Watch program.

Each of the five Beverly Hills public schools has an officer assigned full time on campus to serve as instructors and as first responders in the event of an emergency.

Additional programs managed by the Crime Prevention Bureau include Police Explorer Post # 911, established in 2004, and development of the Citizen's Police Academy.

#### **Detective Bureau**

This Bureau includes the Crime Analysis Unit and Special Enforcement Section (which includes the Vice/Narcotics Unit) and investigates all felonies, misdemeanors and non-criminal matters as assigned; to apprehend suspects; interview witnesses, prosecute offenders, effect the recovery of stolen property and the service of most warrants held by the BHPD. The Bureau also administers the California Sex Offender Registration Program.

### ***Field Services Division***

The Field Services Division consists of the Patrol Bureau, Traffic Bureau, and Emergency Services Bureau. In 2005, the BHPD employed a total of 105 full-time staff for this Division.

#### **Patrol Bureau**

This Bureau, which includes the Reserve Unit and Bicycle Unit, is responsible for enforcing all laws and providing routine patrol of the City, including footbeats and bicycle patrol. The Patrol Bureau also provides staffing for the information desk.

#### **Traffic Bureau**

This Bureau consists of the Traffic Enforcement and Traffic Control Sections, and is responsible for the specialized enforcement of state and local traffic laws through

motorcycle patrol, accident investigations, traffic control, and the Driving Under the Influence (DUI) Team.

To combat the problem of alcohol-impaired drivers, the BHPD Traffic Bureau has two specially trained officers assigned to the DUI Team. During FY 2004 and FY 2005, the City was awarded two California Office of Traffic Safety (OTS) grants to address driving under the influence. During holiday periods the BHPD participates in County-wide DUI enforcement efforts coordinated by the Peace Officers Association of Los Angeles County and periodically conducts driver's license/sobriety checkpoint operations at various locations, specified on the City website, to screen drivers within the City.

In order to reduce the number of traffic accidents, in 1997, the City initiated the Photo Red Light Program at three City intersections and by 2005, expanded the program to six intersections. The selected intersections had a high incidence of traffic collisions, caused primarily by red light violations, and other enforcement and engineering tactics were ineffective to impact the number of collisions. Historically, following installation of the Photo Red Light equipment, collisions at these monitored intersections reduced from 40 to 50 percent. Initially, the three intersections included Wilshire Boulevard and La Cienega Boulevard, Sunset Boulevard and Whittier Drive, Olympic Boulevard and Spalding Drive. Three additional intersections were added at Sunset Boulevard and Foothill Road, Sunset Boulevard and Rexford Drive, and Olympic Boulevard and Camden Drive.

The BHPD also places speed trailers, typically in residential areas, to educate drivers concerning their actual driving speed and encourage speeders to slow down.

### **Emergency Services Bureau**

This Bureau is responsible for coordinating the use and deployment of the Special Tactics Unit, Canine Unit, Crime Suppression Unit, Special Response Team, and Emergency Management Unit in the support of, prevention of or in response to emergency situations requiring resources and expertise beyond those of normal police operations.

### **Administrative Services Division**

The Administrative Services Division is responsible for BHPD support operations and consists of the Communications, Records, Identification, and Jail Bureaus, and the Personnel and Training Bureau (Range/Facilities Detail and Special Projects). In 2005, the BHPD employed a total of 54 full-time staff to this Division.

### **Communications Bureau**

This Bureau receives all incoming calls for police and fire services, including 911, and dispatches police and fire units to calls for service. Highly trained communications personnel track the status of all public safety field personnel 24 hours a day.

Emergency calls are defined as those requiring immediate response due to life threatening circumstances. Priority 1 calls include residential and commercial burglary, prowlers or other crimes. Priority 2 calls include non-injury traffic accidents and disturbing the peace calls. Priority 3 calls are the least serious incidents and include routine calls and reports.

### **Records Bureau**

This Bureau oversees the storage and retrieval of police reports. Personnel enter pertinent data from reports into law enforcement databases maintained at the local, state, and national levels, conduct initial computer checks on arrested individuals, process documents necessary to release a subject from the Beverly Hills jail facility and distribute report copies to authorized BHPD personnel.

### **Identification Bureau**

This Bureau provides technical services to aid in crime scene investigations, and performs analysis of evidence and photographic documentation. Personnel respond to crime scenes to collect and preserve evidence, such as fingerprints, fibers and biological samples for further examination, and provide expert testimony in court.

### **Jail Bureau**

This Bureau operates a Type I facility, which accepts and houses inmates in accordance with regulations established by the State Board of Corrections.

### **Personnel & Training Bureau**

This Bureau is responsible for hiring and training of sworn and civilian BHPD employees.

### **Facilities Unit**

This Unit aids in the maintenance of the police building, vehicles, related equipment and associated purchases.

### **Range Unit**

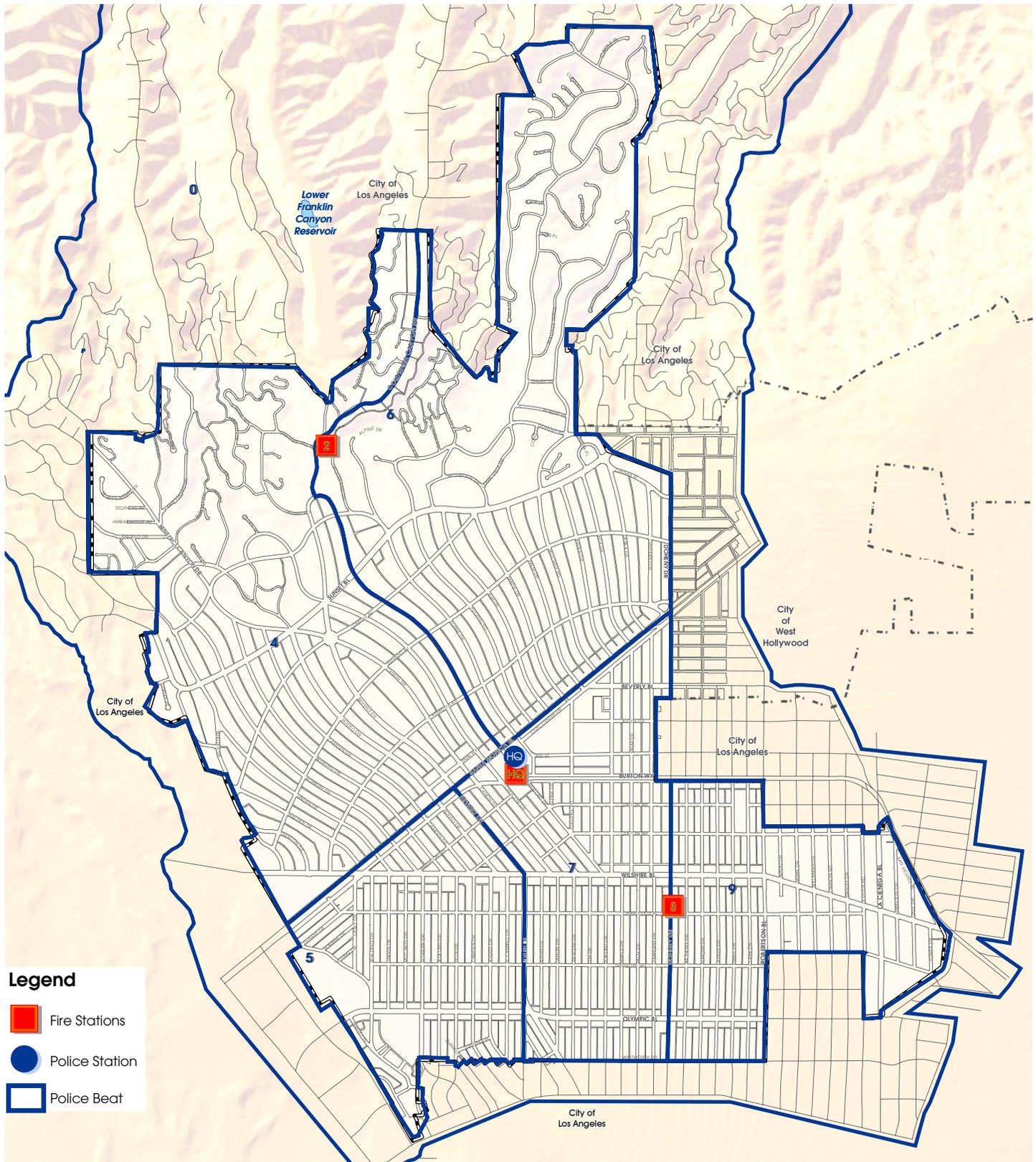
This Unit is responsible for maintenance of the police shooting range, located in the police building and to conduct training in the safe and accurate handling of firearms.

### ***Equipment and Facilities***

The BHPD Headquarters is an approximately 80,000-square-foot facility which consists of three office stories above ground, which includes the jail, and three subterranean levels, including a police shooting range. Equipment includes the following:<sup>146</sup>

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<sup>146</sup> Suzanne Harman and Lt. Mitch McCann, 2005. Written communication from the Beverly Hills Planning Department, August.



**Legend**

- Fire Stations
- Police Station
- Police Beat

Source: City of Beverly Hills, February 2005

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Figure 6.6-1



- 29 black and white patrol vehicles
- 15 police motorcycles
- 11 Traffic Control Officer vehicles
- 36 unmarked police vehicles
- Specialty equipment including:
  - › 1 Rescue Vehicle
  - › 1 Mobile Command Center
  - › 4 trailers for Traffic Bureau (includes utility trailers, radar trailer and speed signal trailer)

### **Response Times**

Response time calls for the BHPD depend on the priority of the call. The goal for 911 emergency and Priority 1 calls is less than three minutes and for Priority 2 through Priority 3 calls from three to five minutes. In the majority of cases, BHPD meets the goal for response to calls. In 2004, the BHPD maintained an overall emergency response time of 2.85 minutes from the time the emergency call is received to the time an officer arrives at the scene.<sup>147</sup>

### **Mutual Aid Agreements**

During emergency situations, police departments occasionally rely upon surrounding police jurisdictions for additional field resources, made available via formal and informal mutual aid agreements. The BHPD has a formal mutual aid agreement with the Los Angeles County Sheriff's Department, which maintains similar agreements with geographical groupings of agencies throughout the County. BHPD personnel have responded to other jurisdictions for temporary emergency situations, on an informal basis, and these areas have likewise dispatched officers to our City, though these instances are rare.<sup>148</sup>

### **Crime Statistics**

The BHPD distributes a variety of crime information and statistics to residents in order to increase awareness and, ultimately, reduce crime in the city. Table 6.6-1 represents crime statistics in eight major offense categories for the calendar years 2003 and 2004. Table 6.6-1 also provides traffic information, including the number of DUI arrests and fatal and injury traffic accidents.

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<sup>147</sup> Beverly Hills Police Department, Administrative Report, December 2004.

<sup>148</sup> Hines, Michael Lt., 2005. Written communication from the Beverly Hills Police Department, Traffic Bureau Commander, 27 June.

**Table 6.6-1 Beverly Hills Annual Crime Statistics, Calendar Year 2003 and 2004**

<i>Offense</i>	<i>2003</i>	<i>2004</i>	<i>Percent Change</i>
<b>CRIMES (INCLUDES ATTEMPT)</b>			
<b>Part I Offenses</b>			
Burglary, Residential	174	165	-5%
Burglary, Commercial	128	152	19%
Grand Theft	296	291	-2%
Burglary/Theft from Vehicle	214	244	14%
Petty Theft	261	230	-12%
Robbery	73	82	12%
Motor Vehicle Theft	81	61	-25%
<i>Total Repressible Crimes</i>	<i>1,227</i>	<i>1,225</i>	<i>0%</i>
Aggravated Assault	69	43	-38%
Criminal Homicide	1	0	-100%
Forcible Rape	6	12	100%
Arson	4	7	75%
<b>Total Part I Offenses</b>	<b>1305</b>	<b>1287</b>	<b>-1%</b>
<b>ARRESTS (ADULT AND JUVENILE)</b>			
<b>Part I Arrests</b>			
Burglary	40	42	5%
Grand Theft	64	42	-34%
Burglary/Theft From Vehicle	4	11	175%
Petty Theft	42	36	-14%
Robbery	44	47	7%
Motor Vehicle Theft	21	23	10%
<i>Total Repressible Crime Arrests</i>	<i>215</i>	<i>201</i>	<i>-7%</i>
Aggravated Assault	55	17	-69%
Criminal Homicide	0	1	100%
Forcible Rape	4	2	-50%
Arson	1	0	-100%
<b>Total Part I Arrests</b>	<b>275</b>	<b>221</b>	<b>-20%</b>
Total Other Arrests	936	1051	12%
<b>Grand Total All Arrests</b>	<b>1211</b>	<b>1272</b>	<b>5%</b>
<b>TRAFFIC INFORMATION</b>			
DUI Arrests	130	146	12%
Fatal Traffic Accidents (Accidents/Victims)	2/2	1/1	-50% (Accidents)
Injury Traffic Accidents (Accidents/Victims)	471/656	425/592	-10% (Accidents)
Detective Bureau Case Clearance Rate	61.2%	60.0%	N/A
SOURCE: Beverly Hills Police Department Administrative Report, December 2004			

## Crime Prevention Programs

The BHPD offers several free services to Beverly Hills residents and merchants, including residential and business security inspections and residential and business presentations on several important crime prevention topics. Presentation topics generally include personal and home security, carjacking, bomb threats, anti-terrorism, short change scams, shoplifting and robbery prevention, fraud, and disaster preparedness.

To support the Department's crime prevention programs and volunteer programs, the City recently developed Citizen Corp, which consists of:<sup>149</sup>

- Neighborhood Watch
- Citizen Emergency Response Team (CERT)
- Volunteers in Policing (VIP)
- Disaster Communications System (DCS)

## Future Demands

While there are no plans for the immediate or near-future expansion of the police facility, staff, or the general equipment inventory, an additional exit ramp from the police sub-garage will be added and a reorganization of additional space in the jail facility is being considered. The BHPD is currently well equipped, though new products or upgrades are continually being reviewed.

During FY 2005, Beverly Hills will receive a \$14,398 Edward Byrne Memorial Justice Assistance Grant (JAG) offered by the United States Department of Justice to purchase a mobile Automatic License Plate Recognition (ALPR) system.<sup>150</sup> proven to assist in identifying and apprehending wanted persons and vehicles. ALPR captures the electronic image of a vehicle license plate, recognizes, and matches vehicle license plates against federal and state wanted lists and permits law enforcement surveillances in any environmental setting.

The BHPD wishes to implement a four year ALPR program commencing in December 2005. The mobile ALPR system will be mounted in a marked patrol vehicle and used routinely by the BHPD to assist in the recovery of stolen vehicles and the apprehension of vehicle theft suspects. Additional uses include narcotic and drug interdiction, surveillance and vehicle patterns, criminal warrants and fugitive apprehension, locating AMBER alert vehicles, selective patrol near school campuses to identify vehicles belonging to registered sex offenders, conducting perimeter control and identifying wanted vehicles.

Other initiatives adopted for the 2005/06 FY Budget include the following:<sup>151</sup>

- Incorporate Neighborhood Watch, Disaster Communications System (DCS) and Volunteers in Policing (VIPs) into the City's Citizen Corps program

<sup>149</sup> City of Beverly Hills, 2005. Website: [www.beverlyhillsonline.com](http://www.beverlyhillsonline.com), May.

<sup>150</sup> City of Beverly Hills, 2005. Website: [www.beverlyhillsonline.com](http://www.beverlyhillsonline.com), May.

<sup>151</sup> Arlington, Audrey, 2005. Written communication from the Principal Planner, Beverly Hills Planning Department, August.

- Plan school emergency response drills with police, fire and school personnel
- Maintain detective clearance rate above the state average
- Maintain an average three minute response time to emergency calls
- Reduce injury collisions, with emphasis on pedestrian and alcohol-related cases
- Continue training and equipping officers in terrorism and weapons of mass destruction recognition and operations
- Procure a digital imaging system for records management, with assistance from Information Technology

## ■ **Issues**

Three significant issues are being evaluated by the Police Department at this time:

- **Recruitment.** The Department is experiencing close to 10 percent retirement rate each year of its sworn personnel and in the next few years, 80 percent of its management staff will be eligible for retirement. The Department is challenged to continue its aggressive recruitment efforts to hire exceptional sworn personnel despite a shrinking pool of eligible applicants and competition from other law enforcement agencies for the same applicant group.
- **Technology.** The advent of new technology has changed the way law enforcement polices. The Department is challenged to keep up with technological changes, and obtaining funding to keep pace with technology.
- **Terrorism.** Homeland Security demands and preventing acts of terrorism remains a high priority. The Department is challenged to maintain increased demands for police service which emphasizes terrorism preparedness.

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Hines, Michael Lt., 2005. Written communication from the Beverly Hills Police Department, Traffic Bureau Commander, 27 June.

## 6.7 FIRE PROTECTION

This section provides information on existing fire and emergency services within the City. In addition, current staffing, equipment, response times, and standards of these services are described. It is important to note that wildland fire hazards are discussed in Section 6.4 (Fire Hazards) of this Technical Background Report. Information for this section was obtained from the Beverly Hills Fire Department, the City's Mutual Aid agreements and the City's website.

### ■ Existing Conditions

The Beverly Hills Fire Department (BHFD) provides fire protection and emergency services for the City of Beverly Hills. The BHFD headquarters are located at 445 N. Rexford Drive in the central portion of the City near the police headquarters. The BHFD is responsible for the protection of lives and property from the hazards of fire and natural disaster. This includes providing emergency medical aid and assistance. Beverly Hills is acknowledged as one of the seven most fire-safe cities in the country.<sup>152</sup>

### Organization

The BHFD is comprised of the following divisions: Administration, Fire Prevention, Fire Suppression, Emergency Medical Services (EMS), Cardiopulmonary Resuscitation (CPR) Program, and Community Emergency Response Training (CERT). These five divisions are further discussed below.

### Administration

The Administration Division is responsible for directing the overall operation and activity of the BHFD. This includes planning, organizing and administering a broad program of fire services and a fire prevention program; developing work programs for the various activities within the BHFD, and administering the BHFD budget. In 2005, the BHFD staffed a total of six full-time employees in the Administration Division.<sup>153</sup>

### Fire Prevention

The Fire Prevention Division is responsible for the enforcement of all local, state, and federal codes related to the safe occupancy of buildings and/or premises. The charge further extends to the safeguarding of life and property from the hazards of fire and explosion arising from the storage, handling, and use of hazardous substances, materials and devices, as well as hazardous conditions due to the use or occupancy of buildings or premises. The Division is also responsible for the investigation of all fires for cause and origin.

<sup>152</sup> City of Beverly Hills, 2005. *Multi-Hazard Functional Plan*. March.

<sup>153</sup> Beverly Hills Annual City Council Budget – Fiscal Year 2004/05. Website: <http://www.beverlyhills.org>, May.

In 2005, the BHFD staffed a total of five full-time employees in the Fire Prevention Division.<sup>154</sup>

### **Fire Suppression**

Fire Suppression is the foundation of the BHFD. The Fire Suppression Division is responsible for the rapid and timely delivery of emergency services to any incident which threatens or has the potential to threaten life or property. The response equipment must be appropriate and properly conditioned and maintained. Three strategically located fire stations (described below) house engine companies and one truck company that provide fire suppression and rescue services to the City. The companies are cross-trained in a variety of operations and are equipped to respond to any type of emergencies.

The Suppression Division performs all duties related to emergency response (fire, rescue, medical and hazard abatement), non-emergency service calls, fire prevention and public education programs, in-service training for all personnel, comprehensive fire preplanning for high risk and special hazard properties, and maintains fire facilities, apparatus and equipment.<sup>155</sup> In 2005, the BHFD staffed a total of 75 full-time employees in the Fire Suppression Division.<sup>156</sup>

### **Emergency Medical Services**

The EMS Division is responsible for the rapid delivery of advanced medical care, and monitoring of its performance in order to assure quality and improvement when necessary. Emergency medical services are provided 24 hours a day by highly trained Firefighter Paramedics. Each firefighter is trained in advanced first aid and CPR, however paramedics provide advanced medical treatments including intravenous administration of medications, cardiac defibrillation and monitoring, and respiratory therapies. In 2005, the BHFD staffed a total of 18 full-time employees in the EMS Division.<sup>157</sup> There are 21 full time dual-function Firefighter/Paramedics that make up the EMS division and who are part of the 75 fire suppression employees.

### **CPR/CERT Programs**

The CPR program is responsible for training and educating the citizens, businesses, employees, and visitors of the community in skills that will protect them and their families. First Aid and CPR Training integrate essential life-saving skills for rescue breathing, choking, CPR, and other emergency treatments. In addition to CPR, the program offers American Red Cross First Aid. While the program is administered by the BHFD, there is a volunteer board which raises funds to provide equipment, training and

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<sup>154</sup> Acting Chief Robert Cavaglieri, July 27, 2005

<sup>155</sup> City of Beverly Hills, 2005. Website: [www.beverlyhills.org](http://www.beverlyhills.org), May.

<sup>156</sup> Acting Fire Chief Robert Cavaglieri, July 27, 2005.

<sup>157</sup> Beverly Hills Annual City Council Budget – Fiscal Year 2004/05. Website: <http://www.beverlyhills.org>, May.

other materials. In 2005, the BHFD staffed one full-time employee in the CPR Program.<sup>158</sup>

The Community Emergency Response Training (CERT) is designed to assist households, neighborhoods, schools and businesses prepare for effective disaster/emergency response through training and pre-planning. The training imparts basic skills important to know when emergency services are not immediately available. Citizens are provided a 20-hour course covering subjects such as terrorism, fire suppression techniques, first aid, and light search and rescue skills. The purpose of the program is to prepare citizens to care for themselves, their families and their neighbors after events such as earthquakes, fires, floods, hazardous incidents and other life-threatening situations should emergency personnel be overwhelmed and unable to respond to every call for service.

### **Training**

Training occurs continuously in all divisions and involves the maintenance of existing skills, the investigation of and training in new skills, and the coordination of training between different divisions, departments, and agencies. An additional responsibility is to insure that all mandatory state and federal training is completed and that the required records are maintained. There is one full-time employee assigned to training.

### **Staffing, Fire Stations, and Equipment**

As of 2005, the BHFD employed approximately 89 full time positions among the five different divisions, as discussed above. Presently, there are three fire stations in the City, which are manned in three rotating shifts (A, B, or C). A three-platoon schedule is based on 24-hour shifts that start at 8 AM. Rotation is every other day for five days, and then four days off, for a total of 56 hours/week/shift.

Standard company staffing is generally as follows: a minimum of 25 personnel per shift in suppression; four personnel on each engine company; five personnel on the truck company; two paramedic firefighters on each paramedic rescue ambulance; and one battalion chief with a staff assistant on the command vehicles. Battalion Chiefs operate out of Headquarters and are in charge of operations at all three stations during each of their respective shifts.<sup>159</sup> Figure 6.6-1 identifies the locations of each fire station in the City, and Table 6.7-1 below describes the equipment and staffing for each station.

### **Fire and Medical Incidents**

In 2004, the BHFD responded to approximately 5,253 incidents. The breakdown of these incidents is summarized in Table 6.7-2.

<sup>158</sup> Beverly Hills Annual City Council Budget – Fiscal Year 2004/05. Website: <http://www.beverlyhills.org>, May.

<sup>159</sup> City of Beverly Hills, 2005. Website: [www.beverlyhills.org](http://www.beverlyhills.org), 18 May.

<i>Station No.</i>	<i>Location</i>	<i>Equipment</i>	<i>Staffing</i>
1 (Headquarters)	445 North Rexford Drive	2 engines (plus 1 reserve), 1 truck (plus 1 reserve), 2 paramedic units (plus 2 reserve), and one command vehicle (plus 1 reserve)	17-person station including 1 battalion chief and 1 staff assistant
2	1100 Coldwater Canyon Drive	1 engine (plus 1 reserve)	4-person station, including 1 captain, 1 engineer, 1 FF/paramedic and 1 firefighter
3	180 South Doheny Drive	1 engine (plus 1 reserve)	4-person station, including 1 captain, 1 engineer, 1 FF/paramedic and 1 firefighter

SOURCE: City of Beverly Hills 2005. Website: <http://www.beverlyhills.org>

<i>Type of Incident</i>	<i>Total Responses in 2004</i>
Fire-explosion	88
Overpressure Rupture, Explosion, Overheat (No Ensuing Fire)	5
EMS	3,060
Physical Rescue	182
Hazardous Conditions Standby	136
Service Calls	344
Good Intent	512
False Alarm	631
Bomb Scare	229
Natural Disaster	62
Other	4
<b>Total</b>	<b>5,253</b>
Fire/Explosion Incidents	
Property Loss	\$72,600.00
Content Loss	\$16,550.00
<b>Total Loss</b>	<b>\$89,150.00</b>
Civilian Injuries	0
Firefighter Injuries	1
Civilian Fatalities	0
Firefighter Fatalities	0

SOURCE: Beverly Hills Fire Department, 2005.

Table 6.7-2 above shows that the three fire stations serving Beverly Hills responded to a total of 5,253 incidents. Approximately 58 percent of the responses were medical emergency responses. Two paramedic ambulances are located at Station 1: Rescue 1 and

Rescue 2. In 2004, Rescue 1 responded to 2,563 medical emergencies and Rescue 2 responded to 573.

These numbers are well within the number of calls recommended by the ISO when rating a community for fire insurance rates. Specifically, the ISO recommends that a second company be put in service in a fire station if that station receives more than 2,500 calls per year. The BHFD receives over 2,500 calls and, as a result, has provided a second paramedic ambulance at Station 1. The reason for the ISO's recommendation is to assure reliability of response to a structure fire. If an engine company provides support to the paramedic ambulance by responding to medical aid calls, and this impacts the station's response to structure fire calls, it may be prudent to add another paramedic ambulance or support squad vehicle and increase staffing at that fire station with the most medical aid traffic. Due to the BHFD's two paramedic ambulances, the engine companies are free to respond to fire incidents.

Fires in Beverly Hills represent less than two percent of all calls. The City generally has a very low incidence of fire and a very low monetary loss from fire. The BHFD reports that no particular area of the City experiences an unusual number of fires and no particular factor is responsible for causing the fires. The potential threat for fire, however, is greatly influenced by factors such as age and density of structures, and narrow streets, as is the case within the City's Very High Fire Hazard Severity Zone.<sup>160</sup>

### ***Response Times and Protocol***

Response time is defined as the time between when the call is received in dispatch to the time of arrival of the first unit assigned to the call. The goal of the BHFD is to be as fast and as safe as possible, but to at least maintain their comparatively low response times despite more traffic congestion and more service calls which drain their resources. Response times average four minutes for an engine company and 3.5 minutes for an ambulance.<sup>161</sup> The BHFD has a built-in response matrix that calls for a standardized response to the various call types. For instance, the typical response for a first alarm structure fire would include four engine companies (including one automatic aid engine company from the Los Angeles County Fire Department), one truck company and a Battalion Chief. The BHFD has approximately 90 different call types for fire and other fire related and medical emergencies.

### ***Insurance Service Office Rating***

The Insurance Service Office (ISO) provides rating and statistical information for the insurance industry in the United States. To do so, ISO evaluates a community's fire protection needs and services, and assigns each community evaluated a Public Protection Classification (PPC) rating. The rating is developed as a cumulative point system, based

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<sup>160</sup> Cavaglieri, Robert, 2005. Written communication from the Beverly Hills Fire Department Deputy Chief. 21 June.

<sup>161</sup> Cavaglieri, Robert, 2005. Written communication from the Beverly Hills Fire Department Deputy Chief. 21 June.

on the community's fire-suppression delivery system, including fire dispatch (operators, alarm dispatch circuits, telephone lines available), fire department (equipment available, personnel, training, distribution of companies, etc.), and water supply (adequacy, condition, number and installation of fire hydrants). Insurance rates are based upon this rating. The worst rating is a Class 10, while the best is a Class 1. The BHFD has the distinction of being awarded the classification of a "class one" fire department by the ISO. Presently, there are only 41 fire departments nationwide that have received this rating.<sup>162</sup>

### **Mutual Aid Agreements**

Although the Department has the primary responsibility for fire prevention and fire suppression in the City, fire-fighting agencies generally team up and work together during emergencies. These teaming arrangements are handled through automatic and mutual aid agreements.

The BHFD has Automatic Aid agreements with the Los Angeles City Fire Department and the Consolidated Fire Protection District of Los Angeles County. These agreements authorize the exchange of resources (i.e. personnel, apparatus and equipment) to help combat emergency incidents which exceed the capabilities of either jurisdiction.

Numerous other agencies are available to assist the City if needed. These include local law enforcement agencies that can provide support during emergency situations. Several state and federal agencies have roles in fire hazard mitigation, response, and recovery, including: the Office of Emergency Services, the Fish and Wildlife Service, National Park Service, US Forest Service, Office of Aviation Services, National Weather Service, and National Association of State Foresters, the Department of Agriculture, the Department of the Interior, and, in extreme cases, the Department of Defense. Private companies and individuals may also assist.

### **Projected Needs**

Currently, Beverly Hills has no plans to add any new fire stations, as the City is almost entirely built out and the needs for fire stations are established.<sup>163</sup> The BHFD, however, is in need of six new vehicles, which the City has funds available to purchase during the 2005/06 fiscal year. Vehicles include two new ambulances, one command vehicle, one utility pickup, one fire prevention van, and one fire prevention sedan.<sup>164</sup>

According to the Initiatives for the 2005/06 FY Budget listed below, the BHFD lists several other needs and plans for the Fire Department.

- Continue providing the community with the provisions of a "Class One" Fire Department.

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<sup>162</sup> City of Beverly Hills, 2005. Website: [www.beverlyhills.org](http://www.beverlyhills.org). May.

<sup>163</sup> Marquis, Noel, 2005. Personal communication with Acting Finance Executive Officer. 18 May.

<sup>164</sup> Cavaglieri, Robert, Acting Fire Chief, July 27, 2008.

- Continue training and recertification of the Urban Search and Rescue (US&R) team which includes confined space, trench rescue certification and base training for new team members.
- Prepare staff to respond to incidents involving Weapons of Mass Destruction (WMD) with additional WMD training and the purchase of specialized equipment.
- Increase community education and preparedness with aggressive marketing of the Community Emergency Response Team (CERT) and CPR programs.
- Specification development and purchase of a new rescue ambulance.
- Streamline Fire Prevention Bureau operations by computerizing the inspection program.
- Pursue development of a Fire Department training facility.
- Implement the Firewise program
- Implement the Automated Electronic Defibrillator (AED) program.

## ■ Regulatory Context

### **Local Regulations**

Several federal, state, and local ordinances and programs affect fire protection in Beverly Hills. These are listed under the Regulatory Context of Section 6.4 (Fire Hazards) of this Technical Background Report.

## ■ Issues

- The number of EMS calls that the department handles are ever increasing while at the same time, hospitals and emergency rooms in the Southern California region continue to close. Ambulances transporting patients to those hospitals that remain open are experiencing longer wait times and are therefore out of service and unavailable for other calls for longer periods.

## ■ References

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## 6.8 EMERGENCY MANAGEMENT

This section provides information on the existing emergency response services in Beverly Hills. Information for this section was obtained from the City's 2005 Draft Multi-Hazard Functional Plan and the City's 2004-2009 Hazard Mitigation Action Plan.

### ■ Existing Conditions

While the City of Beverly Hills cannot prevent disasters from occurring, their effects can be reduced or eliminated through preparedness and a well organized public education and awareness effort. As most hazards cannot be fully mitigated, the community must be prepared to provide efficient and effective response and recovery.

The City has developed two plans designed to implement programs to facilitate emergency preparedness: the Multi-Hazard Functional Plan (MHFP) and the Hazard Mitigation Action Plan (HMAP). Specifically, the MHFP addresses the City's planned response to extraordinary emergency situations associated with all hazards such as natural disasters, technological incidents, and national security emergencies. The MHFP does not address normal day-to-day emergencies or the well-established and routine procedures used in coping with such emergencies (i.e. routine police and fire response calls). Instead, the operational concepts reflected in the MHFP focus on potential large-scale disasters which can generate unique situations requiring unusual emergency responses.

The HMAP includes resources and information to assist City departments, residents, public and private sector organizations, and others interested in participating in planning for hazards. The HMAP provides a list of activities that may assist the City in reducing risk and preventing loss from future hazard events. The strategies address multi-hazard issues, as well as activities for earthquakes, wildfires, terrorism, earth movements, flooding, and wind storms.

Both plans provide an overview of operational concepts, identify components of the City's Emergency Management Organization within the Standardized Emergency Management System (SEMS), and describe the overall responsibilities of federal, state, and local agencies for protecting life and property and assuring the overall well-being of the population.

### ***Beverly Hills Multi-Hazard Functional Plan***

The MHFP establishes emergency organization, assigns tasks, specifies policies and general procedures, and provides for coordination of planning efforts of the various emergency staff and service elements utilizing the SEMS.

Emergency operations, during peacetime or national security emergencies, could range from a minor incident, to a major earthquake, to an act of terrorism. Some emergencies will be preceded by a build-up or warning period, providing sufficient time to warn the

public and implement mitigation measures designed to reduce loss of life and property damage. Other emergencies occur with little or no advance warning, thus requiring immediate activation of the emergency operations plan and commitment of resources. All City departments must be prepared to respond promptly and effectively to any foreseeable emergency, including the provision and utilization of mutual aid. There are emergency management activities associated with the four emergency management phases: preparedness, mitigation, response, and recovery. Each of these phases is described below.

### **Preparedness Phase**

The preparedness phase involves activities taken prior to an emergency. During this phase, the City will place emphasis on emergency planning, training of personnel, public awareness and education, and assuring the adequacy and availability of sufficient resources to cope with emergencies. All City departments will prepare, complete, and maintain Standard Operation Procedures (SOP) and Emergency Operating Procedures (EOP) which include detailing personnel assignments, policies, notification rosters, and resource lists.

### **Mitigation Phase**

The City will conduct mitigation efforts both before and after disaster events in order to eliminate or reduce the impact of hazards which exist within the City, and to reduce losses from disaster which are a threat to life and property. The City's HMAP contains mitigation strategies that the City will follow.

### **Emergency Response Phase**

There are two types of emergencies, as follows:

#### ***Peacetime Emergencies***

Response to a major peacetime emergency situation will progress from local to regional, state, and federal involvement. Specific operational concepts, to include the emergency response actions of the SEMS, are reflected in this MHFP.

#### ***National Security Emergencies***

National security emergencies may range from minor inconveniences such as food and petroleum shortages to a worst case scenario involving an attack on the United States utilizing nuclear weapons. A National Security Emergency Event is declared by the President of the United States.

The following are three phases of the emergency response phase:

### *Pre-Emergency*

The receipt of a warning or the observation that an emergency situation is imminent or likely to occur soon will initiate actions for increased readiness. Increased readiness actions may include, but are not limited to, the following:

- Review and update of emergency plans, SOP/EOP, and resources listings
- Dissemination of accurate and timely emergency public information
- Accelerated training of staff
- Inspection of critical facilities
- Recruitment of additional staff and Disaster Services Workers
- Mobilization of resources
- Testing warning and communications systems
- Evacuation of threatened populations to safe areas
- Advising the Los Angeles County Operational Area of the emergency
- Identifying the need for mutual aid and requesting such through the Los Angeles County Operational Area via the West Hollywood Sheriff's Station
- Proclamation of a Local Emergency

### *Emergency Response*

Emphasis during this phase is placed on saving lives, protecting property and the environment, controlling the situation and minimizing the effects of the disaster to the City. Immediate response is accomplished by the City departments. The emergency management organization will give priority to the following operations (responsible departments in parentheses):

- Dissemination of accurate and timely emergency public information and warning to the public (Police and Communications & Marketing)
- Situation analysis (all)
- Resource allocation and control (all)
- Evacuation (Police Department) and rescue operations (Fire)
- Medical care operations (Fire)
- Coroner operations (Police)
- Care and shelter operations (Recreations & Parks)
- Access and perimeter control (Police)
- Public health operations (Fire or Public Works)
- Restoration of vital services and utilities (Public Works)

When City resources are strained to capacity, and additional resources are required, requests for mutual aid will be initiated through the Los Angeles County Operational Area. Fire and Police will request or render mutual aid directly through established channels. Any action, which involves financial outlay by the City, or a request for military assistance, must be authorized by the Emergency Operations Director (City Manager or designee).

### ***Sustained Emergency***

In addition to continuing life and property protection, mass care, relocation, registration of displaced persons, and damage assessment operations will be initiated during this phase.

### **Recovery Phase**

As soon as possible, the state OES Director will bring together representatives from federal, state, county, and city agencies, as well as the American Red Cross, to coordinate the implementation of assistance programs and the establishment of support priorities. FEMA will open their tele-registration hotline.

The recovery period has major objectives, which may overlap, including:

- Reinstatement of family autonomy
- Provision of essential public services
- Permanent restoration of private and public property
- Identification of residual hazards
- Plans to mitigate future hazards
- Recovery of costs associated with response and recovery efforts

The City's goal in this phase will be to assist the recovery of the City, both residential and business, and to recover as a body within itself. The Director of Emergency Management will oversee the process that ensures that Beverly Hills receives all emergency assistance and disaster recovery costs for which it is eligible. The Finance Department will be the lead department in cost recovery.

### **Emergency Management Structure**

The City's response to natural disasters or other incidents is dictated by the type and magnitude of the emergency. Generally, response to a major emergency situation will progress from local to regional, state, and federal involvement. For planning purposes, the City has established three levels of emergency response to emergencies. As discussed below, the emergency response and recovery operations are based on the severity of the situation and the availability of local resources.

#### ***Level One: Decentralized Coordination and Direction***

A minor to moderate incident wherein the City's resources are adequate and available. A Local Emergency may or may not be proclaimed. Key management level personnel from the principal involved departments may co-locate in a central location to provide coordination. The City EOC may or may not be activated. Off-duty personnel may or may not be recalled.

#### ***Level Two: Centralized Coordination—Decentralized Direction***

A moderate to severe emergency wherein the City's resources are not adequate and mutual aid may be required on a regional or even statewide basis. Key management level

personnel from the principal involved departments may co-locate in a central location to provide coordination. The EOC should be activated. Off-duty personnel may be recalled. A Local Emergency and a State of Emergency may be proclaimed.

***Level Three: Centralized Coordination and Direction***

A major local or regional disaster wherein resources in or near the impacted area are overwhelmed and extensive state and/or federal resources are required. A Local Emergency and a State of Emergency will be proclaimed and a Presidential Declaration of an Emergency or Major Disaster will be requested. All response and early recovery activities will be conducted from the EOC. All off-duty personnel will be recalled.

**Standardized Emergency Management System**

The Standardized Emergency Management System (SEMS) is the system required by state Government Code Section 8607(a) for managing response to multi-agency and multi-jurisdiction emergencies in California. SEMS consists of five organizational levels, which are activated as necessary, and include: field response, local government, operational area, OES Mutual Aid Regions, and state OES. In addition, SEMS incorporates the use of the Incident Command System (ICS), the Master Mutual Aid Agreement and existing mutual aid systems, the Operational Area Concept, the Operational Area Satellite Information System (OASIS), and multi-agency or inter-agency coordination. Beverly Hills has adopted SEMS for managing response to multi-department and multi-jurisdiction emergencies and to facilitate communications and coordination between all levels of the system and among all responding departments and agencies.

This will be in conjunction with a cooperative effort of all departments within the City with an emergency response role. However, the Beverly Hills Fire Department will generally be the lead agency in responding to the following emergencies:

- Earthquake
- Hazardous materials incidents
- Flooding
- Dam/Reservoir failure
- Urban interface/wildland fire
- Landslides
- Major air crash

In addition, the Beverly Hills Police Department will generally be the lead agency for emergencies involving:

- Civil unrest
- National Security
- Terrorism

**Emergency Operations Center**

Day-to-day operations are conducted from City departments stationed throughout the City. When a major emergency or disaster strikes, centralized emergency management is

needed. This facilitates a coordinated response by the Director of Emergency Management, staff and representatives from departments which are assigned emergency management responsibilities in the City. An Emergency Operations Center (EOC) is a location from which centralized emergency management can be performed during a major emergency or disaster. The City's primary EOC is located at 464 North Rexford Drive in Beverly Hills, at the location of the Police Headquarters, and the alternate EOC is located in the Fire Department Training Room at 445 North Rexford Drive or the Public Works Building at 345 Foothill Road.

The following functions are performed in the City's EOC:

- Managing and coordinating emergency operations
- Receiving and disseminating warning information
- Developing emergency policies and procedures
- Collecting intelligence from, and disseminating information to, the various EOC representatives, and, as appropriate, to County and state agencies, military, and federal agencies
- Preparing intelligence/information summaries, situation reports, operational reports, and other reports as required
- Maintaining general and specific maps, information display boards, and other data pertaining to emergency operations
- Continuing analysis and evaluation of all data pertaining to emergency operations
- Controlling and coordinating, within established policy, the operational and logistical support of departmental resources committed to the emergency
- Maintaining contact and coordination with support DOCs, other local government EOCs, and the Los Angeles County Operational Area
- Providing emergency information and instructions to the public, making official releases to the news media and the scheduling of press conferences as necessary

The Office of Emergency Management has overall responsibility of the City's EOC facility and maintaining the operational readiness of the primary EOC. Management of the EOC is shared with the Police Department Emergency Management Officer. The EOC is activated when field response needs support, a citywide perspective is needed, multi-departments need to coordinate, or an emergency situation has occurred or might occur of such a magnitude that it will require a large commitment of resources from two or more City departments over an extended period of time. Examples include an earthquake, brush fire, bombing, flooding, major hazardous material incident, civil disturbance, aircraft disaster, high rise structure fire, severe weather conditions or act of terrorism and a large scale school incident. An impending or declared "State of War Emergency" would also activate the EOC.

The City Manager (Emergency Operations Director) may increase or decrease EOC staffing as deemed appropriate. The Emergency Operations Director has the authority to direct all EOC activity and is responsible for the City's overall Emergency Management policy and coordination. This is accomplished by the joint assistance of the Policy Group (all department heads) and the efforts of all City departments, other public and private organizations (as needed) and volunteer agencies. The Disaster Manager directs all

Emergency Response efforts for the incident. Table 6.8-1 below outlines the City's three levels of activation and staffing.

<b>Table 6.8-1 Beverly Hills EOC Activation and Staff Guide</b>		
<i>Event/Situation</i>	<i>Activation Level</i>	<i>Minimum Staffing</i>
Unusual occurrences with severe potential impacts on the health and safety of the public and/or environment	ONE	Notify Emergency Operations Director or Director of Emergency Management. See note below.
Severe Weather Issuance		
Significant incidents involving 2 or more departments		
Power outages and Stage 1 and 2 power emergencies		
Earthquake Advisory/Prediction Level One		
Earthquake with damage reported	TWO	Emergency Operations Director and/or Director of Emergency Management/all Executive staff Sections Chiefs, Branches and Units as appropriate to situation Liaison/Agency representatives as appropriate Notify Los Angeles County/OEM City Council
Earthquake Advisory/Prediction Level Two or Three		
Major wind or rain storm		
Two or more large incidents involving 2 or more departments		
Major scheduled event		
Unusual occurrences with severe potential impacts on the health and safety of the public and/or environment		
Major city or regional emergency – multiple departments with heavy resource involvement		
Severe hazardous materials incident involving large scale or possible large-scale evacuations		
Large scale power outages and Stage 3 power emergencies		
Earthquake with damage		
Occurrences with severe potential impacts on the health and safety of the public and/or environment		
Wildfire affecting developed area		

SOURCE: Beverly Hills Draft Multi Hazard Functional Plan, 2005

## Mutual Aid

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation(s). The basis for the system is the California Disaster and Civil Defense Master Mutual Aid Agreement, as provided for in the *California Emergency Services Act*. The Master Mutual Aid Agreement creates a formal structure wherein the City

retains control of its own facilities, personnel, and resources but may also receive or render assistance to other jurisdictions within the state. State government is obligated to provide available resources to assist the City in emergencies. It is the responsibility of the City of Beverly Hills to negotiate, coordinate, and prepare mutual aid agreements. Mutual aid agreements exist in law enforcement, fire services, medical and public works, building and safety, and emergency management.

Six mutual aid regions numbered I-VI have been established within California. The City of Beverly Hills is within Region I, which is divided into two regions for law enforcement mutual aid: Regions I and Region IA. Each mutual aid region consists of designated counties. Region I is in the OES Southern Administrative Region.

Beverly Hills is within Region I, which is divided into two regions for law enforcement mutual aid: Regions I and Region IA. Each mutual aid region consists of designated counties. When a disaster or emergency occurs, the City will normally use its own internal assets to provide emergency services. If the City's internal assets are not sufficient to provide required services, the City will normally make a request to Area A cities, which include: Santa Monica, West Hollywood, and Culver City, for pre-arranged mutual aid. If mutual aid is not available, a request for Operational Area support will be made to the Operational Area via the West Hollywood Sheriff's Station EOC or On-Duty Watch Commander.

### **Hazard Mitigation Action Plan**

The purpose of the HMAP was to develop a plan for the mitigation of hazards in the City of Beverly Hills. Developed as a result of the *Disaster Mitigation Act of 2000*, the primary goal of the HMAP is to promote sound public policy and programs designed to protect the public, critical facilities, infrastructure, private and public property and the environment from natural and manmade hazards.

The HMAP assists the City in reducing risk from hazards by identifying resources, information, and strategies for risk reduction, while helping to guide and coordinate mitigation activities throughout the City. The five-year action plan provides an overview of the mitigation plans mission, goals, and strategies. The plan strategies address multi-hazard issues, as well as hazard-specific activities that can be implemented to reduce risk and prevent loss from future hazard events.

There are three individual parts to the HMAP, which include (1) the Mitigation Action Plan, (2) Hazard Specific Information, and (3) Resources. The Mitigation Action Plan addresses five sections which cover the introduction, community profile, risk assessment, multi-hazard goals and strategies, and plan maintenance. The Hazard Specific Information section addresses the six chronic hazards within the City. Each of the hazard-specific sections includes information on history, hazard causes and characteristics, hazard and risk assessment, area of susceptibility to the hazard and existing mitigation activities, as well as local, state, and national resources. The hazards addressed in the plan include the following: earthquake, fire, terrorism, flooding,

landslides, and windstorm. In addition, the Resources section includes, but is not limited to, all information used to gather information to assemble the entire HMAP.

The HMAP goals describe the overall direction that the City agencies, organizations, and citizens can take to minimize the impacts of hazards. The goals help to guide direction of future activities aimed at reducing risk and preventing loss from hazards. In addition, the hazards mitigation strategies, which are identified in the Regulatory Setting, are based on department goals, data collection, research and the public participation process.

## ■ Regulatory Setting

### ***Federal***

#### **Federal Emergency Management Agency**

In March 2003, the Federal Emergency Management Agency (FEMA) became part of the U.S. Department of Homeland Security. FEMA's continuing mission within the new development is to lead the effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident. FEMA also initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program and the U.S. Fire Administration.

#### **Disaster Mitigation Act of 2000**

In 2000, the *Disaster Mitigation Act* was signed into law to amend the Robert T. Stafford Disaster Relief Act of 1988. Among other things, this new legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide, and is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities. Some of the major provisions of the *Disaster Mitigation Act of 2000* include the following:

- Funding for pre-disaster mitigation activities
- Developing experimental multi-hazard maps to better understand risk
- Establishing state and local government infrastructure mitigation planning requirements (in North Carolina the program is known as AIM – Advance Infrastructure Mitigation)
- Defining how states can assume more responsibility in managing the Hazard Mitigation Grant Program (HMGP)
- Adjusting ways in which management costs for projects are funded

The mitigation planning provisions outlined in Section 322 of the *Disaster Mitigation Act* establish performance-based standards for mitigation plans and require states to have a public assistance program (Advance Infrastructure Mitigation [AIM]) to develop county government plans. The consequence for counties of failure to develop an infrastructure mitigation plan in the chance of a reduced federal share of damage assistance from 75 percent to 25 percent if the damaged facility has been damaged on more than one occasion in the preceding 10-year periods by the same type of event.

## **State**

### **Office of Emergency Services**

The OES serves as the lead state agency for emergency management in California. OES coordinates the state response to major emergencies in support of local government. The primary responsibility for emergency management resides with local government. Local jurisdictions first use their own resources and, as they are exhausted, obtain more from neighboring cities and special districts, the county in which they are located, and other counties throughout the state through the Statewide Mutual Aid System. In California, SEMS provides the mechanism by which local government requests assistance. OES serves as the lead agency for mobilizing the state's resources and obtaining federal resources; it also maintains oversight of the state's mutual aid system.

During an emergency, OES coordinates the state's response efforts. It is also responsible for collecting, verifying, and evaluating information about the emergency, facilitating communication with local government and providing affected jurisdictions with additional resources when necessary. If necessary, OES may task state agencies to perform work outside their day-to-day and statutory responsibilities.

### **California Code of Regulations, Title 19**

Title 19, Chapters one through six, of the California Code of Regulations (CCR) establishes regulations related to emergency response and preparedness under the OES.

## **Local**

The Beverly Hills Municipal Code Sections 2.4-101 and 2.4-201 established the Beverly Hills Disaster Board which has the powers, duties and responsibilities to act as the local disaster council as set out in the *California Emergency Services Act*. The Office of Emergency Services is responsible for preparing the City's Emergency Services Plan and implementing the plan in the event of a proclaimed emergency.

### **Beverly Hills Multi-Hazard Functional Plan (MHFP)**

The City's MHFP addresses the City's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. It provides operational concepts related to various emergency situations, identifies components of the local emergency management organization, and describes the City's overall responsibilities for protecting life and property during an emergency. The plan also identifies possible sources of outside support (through mutual aid and specific statutory authorities) from other jurisdictions, and the private sector.

### **Beverly Hills Hazard Mitigation Action Plan**

As discussed above, the City's 2004 Hazard Mitigation Action Plan provides a list of mitigation strategies that may assist the City in reducing risk and preventing loss from

future hazard events. The strategies address multi-hazard issues, as well as activities for earthquakes, wildfires, terrorism, earth movements, flooding and wind storms. Mitigation strategies recommended by City departments for above-identified hazards are discussed below:

- Earthquake
  - › Evaluate and implement suggested mitigation strategies produced by the two reports, “Structural Assessment of Commercial and Multi-family Residential Structures” and “Structural Assessment of Commercial and Multi-family Residential Structures – Policy Considerations” (2004, by Melvyn Green & Assoc.)
  - › Improve seismic deficiencies by retrofitting piping, valves, tanks and pump stations
  - › Replace vehicle shop and three additional buildings of Operations Service Center Building for seismic retrofitting
- Fire
  - › Implement Firewise Program mitigation strategies in Very High Fire Hazard Severity Zone
  - › Establish a Wildland Interface Task force to implement Firewise programs and develop additional training needs
  - › Review and update existing City codes to reflect recommendations set forth by the Firewise assessment, the Joint Wildland Interface Task Force, and ordinances in high rise buildings
  - › Increase water pressure and access to water in Zone 9 (Closed water Pressure Zone) for conflagrations in the vicinity of Coldwater Canyon and areas contiguous to the City and the City of Los Angeles’ Franklin Canyon Reservoir. It will also improve distribution of water supply and reduce energy costs at the Monte Cielo pump station for domestic service into Zone 9.
- Terrorism
  - › Train and equip all police officers to operational level
  - › Train and equip all first responders and field personnel to awareness level
  - › Assist City staff with critical facilities assessment and target hardening
  - › Upgrade city facilities to improve security
  - › Participate in Terrorism Early Warning Group
  - › Provide community outreach and education in preparation for terrorist events
  - › Upgrade Information Technology Security Infrastructure and disaster recovery
- Flood
  - › Locate facilities throughout the City that will facilitate mitigation deficiencies defined in the Storm Drain System Master Plan.
  - › Update Flood Ordinance
- Landslide
  - › Conduct additional geotechnical investigation to update landslide hazard maps
  - › Encourage application of designs and construction technologies for steep slopes to reduce potential adverse impacts from development
  - › Educate residents to prevent landslide on hillside slopes
- Windstorm
  - › Provide public education materials to residents and School District staff, parents and students to protect life and property before, during and after a windstorm

- › Create local City and utility awareness of tree pruning and Fire Code Sections relevant to wind-resistant utility operations.
- › Encourage Critical City Facilities to purchase and/or test backup power facilities for use during a power failure
- Multi-Hazard
  - › Educate community about water conservation so water resources are available as demands increase and/or supply decreases
  - › Purchase, install, and integrate additional equipment to make the necessary upgrades to the Emergency Alert System to allow cable TV warning systems to be capable of notifying all cable television subscribers
  - › Provide education on Hazard Mitigation and preparedness to business community
  - › Expand City's Citizen Corps Program
  - › Identify safe evacuation routes in high-risk areas
  - › Promote the importance of maintaining private property foliage abutting alleyways to limit fire ignition potentials while improving emergency related service vehicle response access

## ■ Issues

- The impact of incremental new development needs to be considered and mitigated by current emergency and hazard management systems. This includes the location and impact of new structures, land uses, and people.

## ■ References

- Beverly Hills, City of. 2004. *Hazard Mitigation Action Plan 2004-2009*, 19 October.
- . 2005. *Draft Multi-Hazard Functional Plan*, March.

## 6.9 NOISE

This section describes the environmental noise conditions within the City of Beverly Hills. Data used in the preparation of this section is based upon various federal and state sources and existing traffic data provided by KAKU Associates, and were quantified by measuring existing noise levels throughout the City.

### ■ Fundamentals of Sound and Environmental Noise

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Since the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound. A typical noise environment consists of a base of steady “background” noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major roadway. Table 6.9-1, Representative Environmental Noise Levels, lists representative noise levels for the environment.

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The  $L_{eq}$  is a measure of ambient noise, while the  $L_{dn}$  and CNEL is a measure of community noise. Each is applicable to this analysis and defined as follows:

- $L_{eq}$ , the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the  $L_{eq}$  of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- $L_{dn}$ , the Day-Night Average Level, is a 24-hour average  $L_{eq}$  with a 10 dBA “weighting” added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24 hour  $L_{eq}$  would result in a measurement of 66.4 dBA  $L_{dn}$ .
- *CNEL*, the Community Noise Equivalent Level, is a 24-hour average  $L_{eq}$  with a 10 dBA “weighting” added to noise during the hours of 10:00 P.M. to 7:00 A.M. and an additional 5 dBA weighting during the hours of 7:00 P.M. to 10:00 P.M. to

account for noise sensitivity in the evening and nighttime. The logarithmic effect of these additions is that a 60 dBA 24 hour  $L_{eq}$  would result in a measurement of 66.7 dBA CNEL.

- $L_{min}$  the minimum instantaneous noise level experienced during a given period of time.
- $L_{max}$  the maximum instantaneous noise level experienced during a given period of time.

Table 6.9-1 Representative Environmental Noise Levels		
Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

SOURCE: California Department of Transportation 1998

Noise environments and consequences of human activities are usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are

urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). Some people may consider louder environments adverse, but most accept the higher levels associated with more noisy urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA).

When evaluating changes in 24-hour community noise levels, a difference of 3 dBA is a barely perceptible increase to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness.

Noise levels from a particular source decline as distance to the receptor increases. Other factors, such as the weather and reflecting or shielding, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically “hard” locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically “soft” locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

## ■ Existing Noise Environment

### **Sources of Noise**

Land uses within the City of Beverly Hills include a range of residential, commercial, institutional, and recreational open space areas. As the City does not contain certain facilities such as airports, heliports, or rapid transit, the primary source of noise is vehicular traffic. Noise in the City also occurs from various stationary sources, such as mechanical equipment associated with building structures, the operation of various types of businesses, and sources produced at residential locations. These sources of noise in the City are further described below.

### **Arterial Roadways**

The dominant noise sources throughout the City of Beverly Hills are transportation related. As there are no freeways running through the City, the major source of traffic noise is generated on major streets. Motor vehicle noise generated by automobiles, motorcycles, trucks, and buses commonly causes sustained noise levels and is often in close proximity of sensitive land uses.

Major streets in Beverly Hills that have high noise readings include Coldwater Canyon, Beverly and Doheny Drives, and La Cienega, Sunset, Santa Monica, Wilshire, and Olympic Boulevards. Residential uses near arterial roadways do not have attenuation from noise other than the presence of any large scale commercial structures separating the residential area from those arterials and the distance between the roadway and the residential structures. The noise attenuation features of new residential uses are reviewed on a project-by-project basis as part of the City's development review process. As new residential projects are proposed near major roadways or other potential noise sources, future noise levels can be evaluated and noise mitigation strategies required as appropriate to meet City noise standards.

### **Stationary Sources**

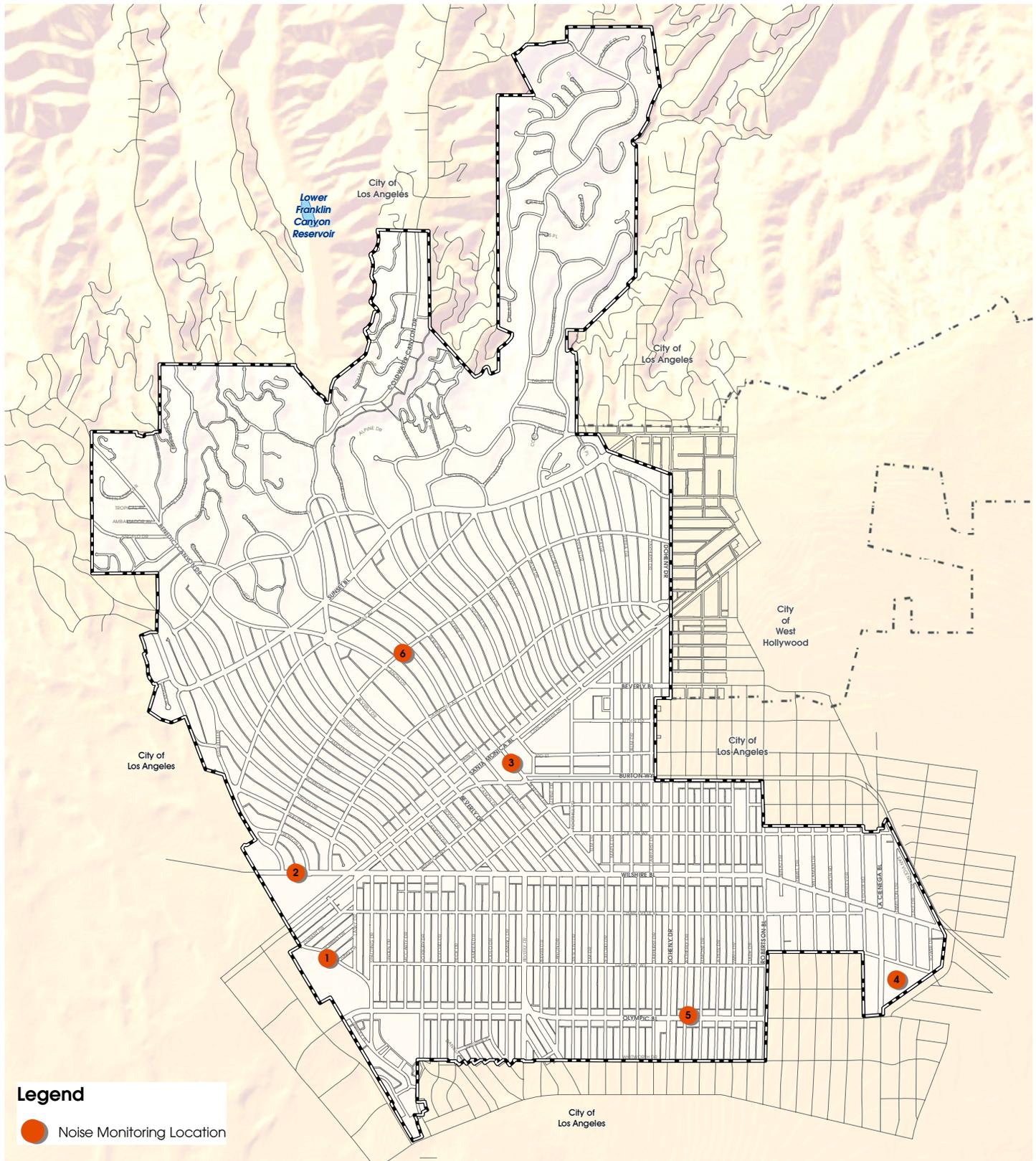
A wide variety of stationary sources that are typical of an urban setting are present in Beverly Hills. The City contains many different uses (e.g., commercial, residential, institutions, public facilities, utilities, etc.), all of which can produce noise. Residential areas can generate noise through the use of heating and cooling equipment, and through landscape maintenance activities such as gasoline-powered lawnmowers and illegal gas-powered leaf blowers. Commercial uses can generate noise through the operation of rooftop heating and cooling equipment, and other operational activities such as trash deposit and collection in alleys, noise emanating from within businesses, and deliveries. Outdoor sports facilities that attract large numbers of spectators, such as high school football fields, can produce noise that affects nearby receptors. The level of noise produced depends on the size of the facility and the attendance for a specific event. Maximum noise levels of about 90 dBA at 50 feet from the field have been measured at football fields seating 4,000 to 5,000 people with amplified public address systems.

### **Existing Noise Levels**

#### **Monitored Locations**

Existing ambient daytime noise levels were measured at six locations in the City in order to characterize existing daytime noise conditions caused by various noise sources. As the City does not contain unique noise sources such as freeways, industrial facilities, airport, railroads, etc., ambient noise levels were monitored at general locations where noise levels are representative of typical uses within the City. The locations where ambient noise levels were monitored include a high school, hotel, fire department, park (recreational field), multi-family residential neighborhood, and single-family residential neighborhood. The noise monitoring locations are shown in Figure 6.9-1.

The noise levels were measured using a Larson-Davis Model 814 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. The average noise levels and sources of noise measured at each location are identified in Table 6.9-2. These daytime noise levels are characteristic of a typical urban area.



**Legend**  
 Noise Monitoring Location

Source: EIP Associates, May 2005

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Figure 6.9-1



	<i>Location</i>	<i>Primary Noise Sources</i>	<i>Hourly L<sub>eq</sub></i> <i>(dBA)</i>	<i>L<sub>min</sub></i> <i>(dBA)</i>	<i>L<sub>max</sub></i> <i>(dBA)</i>
1	Beverly Hills High School	Students congregating after school; school-related traffic	60.6	50.9	78.7
2	The Beverly Hilton Hotel	Water fountain in front of hotel; vehicles arriving and departing hotel	61.8	60.2	71.3
3	Beverly Hills Fire Department Headquarters (Civic Center)	Vehicular traffic; fire truck entering garage	64.5	51.5	78.4
4	La Cienega Park	Children at softball practice; ambient traffic noise	63.3	55.8	74.6
5	Multi-family residential neighborhood	Traffic	70.2	54.7	82.8
6	Single-family residential neighborhood	Traffic	62.1	47.8	72.1

SOURCE: EIP Associates, 2005. Noise monitoring records are provided in Appendix B. Noise levels were monitored for 15 minutes at each location on May 16, 2005.

### **Roadway Noise Levels**

Existing 24-hour noise levels have been calculated for various roadways throughout the City using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels.

Existing roadway noise contours are shown in Figure 6.9-2. Noise levels were modeled for the roadways with the highest traffic volumes in the City. The calculated roadway noise levels are presented in Table 6.9-3 along with the distances to various noise level contours. Based on this formation, Santa Monica, Sunset, Wilshire, La Cienega, and Olympic Boulevards are the greatest sources of roadway noise within the City. Existing residential uses in close proximity to these roadway segments could be exposed to high noise levels on a regular basis.

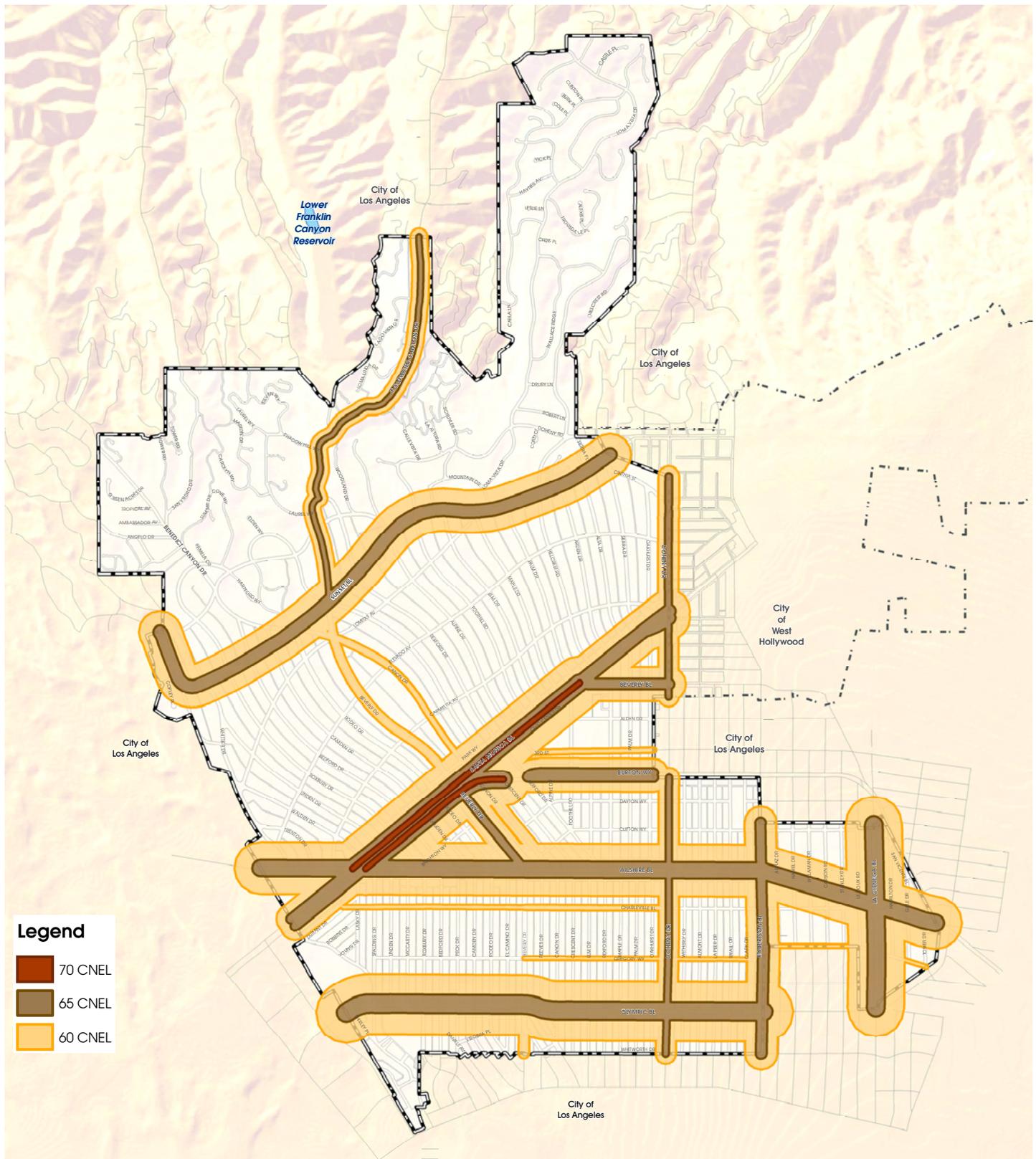
**Table 6.9-3 Existing Roadway Noise Levels**

Roadway Segment	Reference CNEL at 100 Feet <sup>a</sup>	Distance to Noise Contour (feet) <sup>b</sup>		
		70 CNEL	65 CNEL	60 CNEL
Coldwater Canyon Dr., north of Sunset Blvd..	62.3	—	54	171
Beverly Dr., between Sunset Blvd.. and Santa Monica Blvd.	59.9	—	—	98
Beverly Dr., between Santa Monica Blvd. and Wilshire Blvd.	64.3	—	84	266
Beverly Dr., south of Olympic Blvd.	60.3	—	—	107
Sunset Blvd.	66.2	—	131	415
Canon Dr., between Sunset Blvd. and Elevado Avenue	59.0	—	—	80
Canon Dr., between Elevado Ave. and Santa Monica Blvd.	58.0	—	—	62
Canon Dr., between Santa Monica Blvd. and Wilshire Blvd.	61.0	—	—	126
Foothill Road, between Sunset Blvd. and Santa Monica Blvd.	53.5	—	—	71
Santa Monica Blvd., north of Beverly Blvd.	64.6	—	91	286
Santa Monica Blvd., between Wilshire Blvd. and Beverly Blvd.	67.2	53	167	527
Santa Monica Blvd., north of Beverly Blvd.	66.2	—	133	420
Beverly Blvd., east of Santa Monica Blvd.	65.3	—	107	339
Wilshire Blvd.	67.1	—	164	518
West 3 <sup>rd</sup> Street	57.3	—	—	53
Burton Way	64.5	—	89	281
Dayton Way	51.6	—	—	—
Doheny Dr.	63.0	—	64	202
Robertson Blvd.	65.0	—	99	313
La Cienega Blvd.	67.5	—	176	558
Charleville Blvd., between Santa Monica Blvd. and Beverly Dr.	56.8	—	—	48
Charleville Blvd., between Beverly Dr. and Doheny Dr.	57.5	—	—	57
Charleville Blvd., between Doheny Dr. and Robertson Blvd.	54.9	—	—	—
Charleville Blvd., between Robertson Blvd. and La Cienega Blvd.	53.8	—	—	—
Gregory Blvd., between Spalding Dr. and Beverly Dr.	54.2	—	—	—
Gregory Blvd., east of Beverly Dr.	56.0	—	—	40
Olympic Blvd.	67.8	—	189	598

SOURCE: EIP Associates, 2005. Calculation data and results are provided in Appendix B.

<sup>a</sup> Distances are in feet from roadway centerline. The identified noise level at 100 feet from the roadway centerline is for reference purposes only as a point from which to calculate the noise contour distances. It does not reflect an actual building location or potential impact location.

<sup>b</sup> Noise contour is located within the roadway lanes.



Source: SCAG & EIP Associates GIS Program, August 2005

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Figure 6.9-2



### ***Sensitive Land Uses***

Various standards have been developed to address the compatibility of land uses and noise levels. The applicable standards are presented in the following discussion. Special emphasis is placed on land uses that are considered to be sensitive to high noise levels.

Sensitive land uses are those uses that have associated human activities that may be subject to stress or significant interference from noise. Potentially sensitive land uses in Beverly Hills include residences (including residences for the elderly), schools, churches, and libraries.

### ***Federal Regulations***

There are no federal noise requirements or regulations applicable to local actions of the City of Beverly Hills. However, there are federal regulations that influence the audible landscape, where federal funding is involved. The Federal Highway Administration (FHWA) requires abatement of highway traffic noise for highway projects through rules in the Code of Federal Regulations (23 CFR Part 772), and the Federal Transit Administration (FTA) and Federal Railroad Administration (FRA) each recommend thorough noise and vibration assessments through comprehensive guidelines for any mass transit or high-speed railroad projects that would pass by residential areas. For housing constructed with assistance from the U.S. Department of Housing and Urban Development, minimum noise insulation standards must be achieved (24 CFR Part 51, Subpart B). The FAA has prepared guidelines for acceptable noise exposure in its FAR Part 150 Noise Compatibility Planning program for airports. According to the Part 150 guidelines, exterior aircraft exposures of 65 dBA CNEL or less and an interior exposure 45 dBA CNEL or less are considered acceptable for residential uses.<sup>165</sup>

### ***State Regulations***

The state of California, Governor's Office of Planning and Research has published recommended guidelines for the preparation and content of the noise element of a general plan. Each jurisdiction is required to consider these guidelines when developing the general plan noise element and determining acceptable noise levels within the community. The purpose of the noise element is to limit the exposure of the community to excessive noise levels. A noise element must identify and appraise noise problems in the community by analyzing and quantifying current and projected noise levels for all stationary and mobile noise sources in the community. Noise contours are then developed and shown for all the noise sources in the community, and are eventually used as a guide for establishing a pattern of land uses that minimizes the exposure of community residents to excessive noise.

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<sup>165</sup> Although the noise standards identified by the FAA are based on  $L_{dn}$  levels, CNEL is used in this EIR. Noise levels based on CNEL are generally less than 1.0 dBA less than  $L_{dn}$ .

Title 24 of the California Code of Regulations includes Sound Transmission Control requirements that establish uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family units. Specifically, Title 24 states that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new dwellings. Dwellings are to be designed so that interior noise levels will meet this standard for at least ten years from the time of building permit application.

### ***Beverly Hills Municipal Code***

Chapter 1, Noise Regulations, under Title 5, Public Health, Welfare, and Sanitation, of the Beverly Hills Municipal Code includes limitations on unnecessary, excessive, and annoying noises within the City. Section 5-1-104 of the City Municipal Code establishes the general standards relative to disturbance of peace as follows:

...It shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

The factors which shall be considered in determining whether such noise violates the provisions of this section shall include, but not be limited to, the following:

- A. The volume of the noise;
- B. The intensity of the noise;
- C. Whether the nature of the noise is usual or unusual;
- D. Whether the origin of the noise is natural or unnatural;
- E. The volume and intensity of the background noise, if any;
- F. The proximity of the noise to residential sleeping facilities;
- G. The nature and zoning of the area within which the noise emanates;
- H. The density of the inhabitation of the area within which the noise emanates;
- I. The time of the day or night the noise occurs;
- J. The duration of the noise;
- K. Whether the noise is recurrent, intermittent, or constant;
- L. Whether the noise is produced by a commercial or noncommercial activity.

Article 2 in Chapter 1 addresses specific noise sources in the City and their respective regulations, including noise generated by electronic devices, machinery, motor vehicles, sound amplifying equipment, construction activity, musical instruments, and animals. In regards to restrictions on construction activity, Section 5-1-206 of the City Municipal Code states the following:

- A. No person shall engage in construction, maintenance or repair work which requires a city permit between the hours of six o'clock (6:00) P.M. and eight o'clock (8:00) A.M. of any day, or at any time on a Sunday or public holiday unless such person has been issued an after hours construction permit issued

pursuant to subsection C of this section. In addition, no person shall engage in such work within a residential zone, or within five hundred feet (500') of a residential zone, at any time on a Saturday unless such person has been issued an after hours construction permit issued pursuant to subsection C of this section.

## ■ Issues

- New development will likely further increase the number of noise sources within the City. The primary source of increased noise levels will be motor vehicles associated with this new development.
- Noise generated by new development can be addressed through building siting, design, and construction.
- Increased noise levels at existing noise sensitive uses, particularly residential units located in close proximity to roadways, can be addressed through the implementation of measures to mitigate these impacts. This could include use of construction methods such as wall insulation and double-glazed windows in new construction or remodeled units.
- Encourage alternative solutions to sound walls.
- In any planning for future improvements to Santa Monica Boulevard, take into consideration ways to mitigate any increases in noise levels or opportunities to reduce existing noise levels, in ways that are aesthetically compatible with Beverly Gardens Park and the residential area immediately to the north.

## ■ References

- Barry, T.M. and J.A. Reagan. *FHWA Highway Traffic Noise Prediction Model* (FHWA-RD-77-108). 1978.
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