Chapter VIII
SAFETY &
NOISE ELEMENT

8.1 INTRODUCTION

South Pasadena’s General Plan is required to address the health and well-being of its citizens and businesses. Issues related to protecting the community from natural and man-made hazards are the central focus of the Safety and Noise Element.

This Chapter considers the public health and safety from the several different perspectives of geological hazards and the potential of slope instability, structural building collapse in a seismic event, inundation from reservoir collapse or one-hundred year storms, the unrest and physical harm of civil commotion, brush or urban wildfires, emergency preparedness and disaster response, community evacuation, disease prevention and community health, hazardous waste, noise pollution and air and groundwater pollution.

The City of South Pasadena receives its health services through the County of Los Angeles - the Alhambra office. Some programs are administered through the South Pasadena Senior Center.

8.1A Purpose of The Element

The Safety and Noise Element is a combined element which formally incorporates the requirements of State Law. The Safety Element, which is intended to provide a planning framework for the protection of the community from natural and man-made hazards, and the Noise Element, which is intended to identify noise sensitive land uses and noise sources and to provide for the protection of the community from the adverse affects of excessive noise.

8.1B Scope and Authority

This Element identifies specific hazards that have the potential to impact the human population and the built and natural environments of the City of South Pasadena. Seismic activity, storm runoff and flooding, erosion, wildfires and the degradation of air and water quality are the primary natural hazards. Exposure to hazardous materials, improper sanitation and vector control, the potentials for dam inundation, the threat of civil commotion and crime, and noise pollution are pertinent man-made hazards.

Air and water quality are separately and specifically addressed by sub-regional plans prepared or being prepared by a consortium of West San Gabriel Valley cities. More within the domain of the State and County, community health risks may be minimized by establishing supportive policy at those levels of government intended to realize early intervention and mitigation of risk.
**8.1C Relationship to Other Elements**

The combined Safety and Noise Element establishes goals and policies to guide local government decision-making in noise, safety and community health-related matters. Noise conflicts may be mitigated through adoption of specific policies intended to achieve land use compatibility with respect to noise in the community. Through investigation of hazard risks, and careful land use planning to reduce or restrict development in high risk areas, the potential for disaster can be reduced.
8.2 EXISTING CONDITIONS

This portion of the Chapter discusses South Pasadena’s readiness to cope with emergencies and the major natural and man-made hazards that confront us. Local hazards are identified and goals and policies that will mitigate the hazards are proposed.

8.2A Seismic and Geological Hazards

Geologic events, and seismic activity in particular, are the primary natural hazards of the community.

Earthquakes are caused by violent and abrupt releases of strain built up along faults. When a fault ruptures, energy is released in all directions from the source, or epicenter, in the form of seismic waves. Earthquakes generate two types of hazards. Primary hazards are ground shaking and surface rupture along faults. Secondary hazards result from the interaction of ground shaking with existing ground instabilities and include liquefaction, settlement and landslides.

The City of South Pasadena is located in seismically active region, in an area of potential fault rupture, strong ground shaking and slope instability. These geologic and seismic hazards can affect the structural integrity of structures and utilities, and in turn can cause severe property damage and potential loss of life.

In California, faults are common, ranging from small breaks of an inch or less, to the San Andreas fault which extends for hundreds of miles. In addition to size, the age of a fault has a direct bearing on the likelihood of generating an earthquake. Many large faults have not moved for millions of years and are considered “dead” or inactive. The Alquist-Priolo Zones Special Studies Act defines “active” faults as those that have experienced surface displacement, or movement during the last 11,000 years. Faults classified as potentially active have moved during the last 2 million years. Faults that have not moved within the last 2 million years are considered inactive.

Effective March 1999, the State Department of Conservation will be releasing twelve new seismic hazard zone maps covering 63 cities in Los Angles and Orange County, including South Pasadena. New legal requirements for local governments mandated by the State include requiring site investigation reports for certain properties prior to permitting development and providing copies of such site investigation reports to the State Geologist.

• Regional Faults

The seismicity of the Southern California region and its relationship to the City of South Pasadena are shown in Figures VIII-1 and VIII-2. The faults identified on the map are potential sources of ground shaking within the City. Principal among them are the Sierra Madre Fault system, the Whittier Fault, and the San Andreas Fault. An earthquake anywhere on any of these faults could trigger secondary impacts in the City.

• Local Faults

Three other faults influence the City of South Pasadena, the Raymond Hill Fault, the York Boulevard Fault, and the Elysian Park Fault. Between these three faults, much of the City is subject to earthquake hazard.
• **Raymond Hill Fault**

Raymond Hill Fault is the only active fault running through South Pasadena that is designated as an Alquist-Priolo Special Study Zone. This fault is a reverse, left-slip, 12 miles in length, and extends through the southern portion of South Pasadena. The Raymond Hill Fault is believed to have moved within the past 3,000 years and is classified as an Alquist-Priolo Special Study Zone.

According to a 1973 report, an earthquake of 7.5 magnitude is assumed along the Raymond Hill-Santa Monica-Malibu Coast fault on the average of about once in every 5,000 years. This rate suggests a recurrence interval of about 500 years for a 6.5 magnitude event, and 100 years for a 5.6 magnitude event. A seismic event along the Raymond Hill fault has the potential to generate surface rupture that would affect structures on and adjacent to the fault. In addition, a seismic event could generate ground shaking and associated secondary impacts that could affect areas beyond the immediate proximity of the fault.

• **York Boulevard Fault**

The York Boulevard Fault was initially documented by the Department of Conservation, Division of Mines and Geology, in a report prepared in 1970. The fault was believed to have run through the City of South Pasadena south of the Raymond Hill Fault. The report was later rescinded in 1975 after discovering that it contained erroneous information. Today, the fault is commonly referred to as a parallel extension of the Raymond Hill Fault, and therefore, is not depicted on Figure VIII-1. It has not been designated as an Alquist-Priolo Special Studies Zone.

• **Elysian Park Fault**

The Elysian Park Fault has been identified as a seismically active plane fault buried at a depth of approximately 10 kilometers beneath the City. It underlies most of the City, including the 710 Freeway extension through South Pasadena. Because the Elysian Park Fault is buried and runs horizontally underground, it is not easily depicted on a map. As such, the fault is not included on Figure VIII-1. The Elysian Park Fault is second to the Raymond Fault, only in that since it is buried, ground rapture is not expected. In considerations of earthquake size and activity of the fault, it must be considered at least as significant as the Raymond Fault.

Two independent modelings of the strong ground motions on the Elysian Park Thrust System/93, Sacci/94, Heatman Wall, the behavior of the Thrust System is not well understood. However, if the 1994 Northridge Earthquake, which occurred on a similar structure, is an indication earthquakes and magnitudes of 6.5 to 7.0 range are reasonable.

• **Other Seismic Hazards**

Liquefaction of the soil, occurring during a quake and often caused by high water table, is of secondary concern. The Los Angeles County Safety Element, however, indicates that South Pasadena is at low risk for liquefaction.
Figure VIII-1 – Local Fault Rupture Hazards
8.2B Unreinforced Masonry Buildings
The principal threat in an earthquake is the potential for injuries or threat to human life due to damage or collapse of structures, such as buildings, freeways, bridges, and other infrastructure. Pursuant to Section 8876 of the California Government Code, cities and counties located within this Seismic Zone 4 are required to identify all potentially hazardous buildings and establish a program for their mitigation. All potentially hazardous buildings and mitigation programs have been reported to the Seismic Safety Commission by January 1, 1990.

Hazardous buildings, according to the General Plan Guidelines, are structure that are hazardous to life in the event of an earthquake because they were constructed prior to the adoption and enforcement of building codes requiring earthquake resistant building design; are constructed of unreinforced masonry; or include features that are not capable of resisting or withstanding a seismic event.

The City of South Pasadena adopted Ordinance 1912, Earthquake Hazard Reduction in Existing Buildings. This Ordinance establishes minimum standards for structural seismic resistance. The Ordinance also provides systematic procedures and standards for the identification and classification of unreinforced masonry buildings. Priorities, time periods and standards are also established under which these buildings are required to be structurally analyzed and anchored. An updated inventory of hazardous buildings was conducted in January 1992. The report identified 12 buildings in the City, including three within the Mission West Historical District, that require structural reinforcement.

According to the 1996 Annual Report, four buildings still remain within the Mission West Historic District that have not been structurally reinforced and six unreinforced buildings in the remainder of the City.

8.2C Runoff and Flood Control

Flooding Hazards

As part of the National Flood Insurance Program, floodplain studies have been conducted for various communities in Los Angeles County, including the City of South Pasadena. The results of these studies are presented on Flood Insurance Rate Maps (FIRM), which identify 100 and 500-year floodplain boundaries.

The City of South Pasadena is located on Panel No. 0650671 of the FIRM maps. The entire City is located within Zone C, which designates areas of minimal flooding. As there are no floodplain areas within the City, there are no pertinent flood hazards.

Flood Inundation from Man-Made Structures

Reservoir or dam failure generally occurs for one of three reasons: as the result of ground shaking from an earthquake in excess of design assumptions; structural instability; or from heavy rains in excess of design capacity. In addition, reservoirs and dams located in seismically active regions may overtop due to seiche during seismic activity or from seismically-induced landsliding. The resulting disaster could affect downstream communities and neighborhoods located in the inundation area.

California Government Code § 8589.5 (1972) requires dam owners to submit to the Office of Emergency Services maps showing inundation zones for catastrophic dam failure. The Office of Emergency Services is responsible for designating areas with potential for loss of life and for reviewing procedures for population control and evacuation below dams in the event of a dam failure.

Devils Gate Dam is located approximately 5 miles north of the northwesterly City boundary. This dam is part of the Los Angeles County Flood Control District and is a concrete gravity dam. The dam has a capacity of 2,709 acres feet, and is 103 feet in height. However, the Dam has not retained its maximum capacity since the 1971
San Fernando earthquake. Extensive retrofitting was completed in early 1998 and approved by the California Department of Water Resources, Division of Safety of Dams.
8.2D Police and Fire Protection

The South Pasadena Police and Fire Departments are the two city agencies responsible for public safety. These services are funded through revenues generated by property tax. The Fire Department has a volunteer group and an auxiliary group which supplement the Fire Department.

- Fire Services

The South Pasadena Fire Department provides fire protection and medical emergency response service within the City. Additionally, the Department provides annual business fire inspections, residential fire inspection of three units or more, weed abatement of hazardous brush areas and fire sprinkler inspections. The Department also has a hazardous materials coordinator and a full disclosure program.

The Fire Department operates one fire station located at 817 Mound Avenue. The Department on duty personnel currently consists of nine dual role paramedic/firefighters. Current citywide departmental resources include two front-line triple combination pumpers, one having a 65 foot telescuit ladder; one back-up paramedic ambulance; one salvage/overhaul vehicle with mobile air compressor; one back-up paramedic squad; and one reserve triple combination pumper.

The City maintains a full service Fire Department, including 24 sworn personnel, one chief, and one fire prevention specialist. Additionally, the Department maintains a volunteer program and an auxiliary program composed of 10 volunteer firefighters and 14 auxiliary firefighters who are trainees intending to pursue a career in fire service.

The majority of the personnel are Urban Search and Rescue (USAR) trained. The Department also maintains a trailer outfitted for USAR operations. Additionally, most of the personnel are trained in Swift Water Rescue which specializes in water related rescue operations.

The emergency response time of the Department ranges from three to six minutes for calls within the City boundaries. The number of personnel responding depends on the type of incident. Types of incidents range from a basic medical call with two responding personnel, to a structure fire call with eight responding personnel. A second station is being considered for the southwestern portion of the City. This station would lower response time, create better freeway access, and provide stronger regional support.

The City of South Pasadena is currently a signatory to automatic aid agreement with the Pasadena Fire Department, City of Los Angeles Fire Department, and San Marino Fire Department. Automatic aid means that the South Pasadena Fire Department, if available, would respond to another jurisdiction as the first due unit, or as part of the first alarm response. In most instances this means that the closest unit responds regardless of jurisdiction. The City also is a signatory to statewide and countywide mutual aid program whereby agencies with depleted resources may call upon others for assistance during major emergencies. The City is a signatory to the Verdugo Dispatch Center in Glendale along with Glendale, Burbank, Pasadena, South Pasadena, and San Marino.
Police Services

The South Pasadena Police Department (SPPD) is a full service police agency serving the community. The Department is currently undergoing a full organizational transformation to a Neighborhood Oriented Policing Philosophy. Under this operating philosophy, the Department and all of its operations will be closely linked to specific neighborhoods throughout the city. All of the Police Department’s efforts are coordinated with and developed in cooperation with a very active, committed citizenry.

The Police Department has an authorized strength of 34 sworn police officers and 18 civilian employees. These individuals are deployed in such a way as to provide top quality policing service 24 hours a day, seven days a week to the residents of South Pasadena. In addition to the full time employees, the SPPD has a long standing reserve program. Through this program, the size of the uniformed force is almost doubled, with over 30 individuals volunteering large blocks of time to the Department and the community.

The Department is committed to a high quality of service with a strong emphasis on the traditionally very rapid response to demands for police service (within 3 minutes for in-progress calls, under 10 minutes for most requests for police service) coupled with high quality service once the officers arrive on the scene. There is regular cooperation and coordination with surrounding police agencies (Pasadena, San Marino, Alhambra, LAPD). This offers the best opportunities for apprehension of criminals and reduction of losses and crime in South Pasadena.

8.2E Emergency Preparedness and Disaster Response

The City has an adopted Disaster Response Plan, administered by the City Manager’s Office. The Disaster Response Plan, incorporated by reference into the General Plan, details responsibilities and roles of the City staff and supporting entities in the event of a major natural or man-made disaster. The maintenance of the Disaster Response Plan is important to meet the emergency protection needs of the General Plan buildout population. Additionally, the Public Safety Commission has developed a program that complements the Disaster Response Plan by supporting it with the Community Emergency Response Team.

The City’s Emergency Operations Center (EOC) is located in the City Hall. The Emergency Operations Activation Procedures set forth responsibilities, personnel, and information necessary to establish the Emergency Operations Center and respond to disasters.

8.2F Violence Prevention

The City currently sponsors and actively supports such programs as D.A.R.E., Neighborhood Watch, the Safety Fair and the Coalition Against Neighborhood Violence. A public health approach considers four elements in violence prevention:

- The HOST of violence or intentional injury -- the at-risk adult or youth who may be injured or who may injure him/herself or another person.
- The AGENT of intentional injury -- usually a gun, knife, blunt object or fist.
- The PHYSICAL ENVIRONMENT -- home, neighborhood, school or work-place.
- The SOCIAL ENVIRONMENT -- shaped by racism, the media, alcohol, other drugs, family disarray and despair.
8.2G Hazardous Waste Storage and “Hazmat” Transport

A material is considered hazardous when it exhibits corrosive, poisonous, flammable and/or reactive properties, and has the potential to harm human health and the environment. Hazardous materials are generally substances used to produce high technological products. In contrast, hazardous wastes are chemical remains. These substances are no longer usable and need treatment and/or disposal. Storage, transport and disposal of these materials require careful and sound management practices.

Hazardous materials are utilized by a number of businesses in South Pasadena, and several facilities are actual hazardous waste generators. Any number of common household products - motor oil, old paints, cleaners, aerosols, and pesticides - contain hazardous materials, potentially destined for disposal in landfills where they could leach through the soil and contaminate groundwater. Current truck routes pass over streets on which are located schools, hospitals and residential areas, perhaps not the most suitable routes for the transport of hazardous materials.

State legislation requires local jurisdictions to do one of the following:

1) Adopt a City Hazardous Waste Management Plan containing all of the required elements [per California Health and Safety Code, Section 25135.1(d)] that shall be consistent with the approved County Hazardous Waste Management Plan;

2) Incorporate applicable portions of the approved County Plan, by reference, into the City’s General Plan; or

3) Enact an ordinance which requires that all applicable zoning, subdivision, conditional use permits and variance decisions are consistent with the portions of the approved County Plan which identify general areas or citing criteria for hazardous waste facilities.

South Pasadena has presently adopted the County of Los Angeles’ Hazardous Waste Management Plan into its plans and processes by reference.

Safe and responsible management of hazardous waste is critical to the protection of the public health and environment and to economic growth. All segments of society generate hazardous waste, including service industries, small businesses, hospitals, medical facilities, schools and households. It is anticipated that the community will continue to produce hazardous waste, and therefore, require continued diligent management of the material or waste.

8.2H Sanitation and Vector Control

Los Angeles County Health Department inspects and/or cites food-service establishments as well as any possibly unhealthful condition within the City that may harbor rodents and disease.

The City of South Pasadena contracts for solid-waste collection and disposal throughout the community. Hazardous waste is collected and disposed through special multiple-city drives. City sewer lines are connected to the City of Los Angeles and County of Los Angeles Sewer System.

The City of South Pasadena has experienced resource limitations with regards to sanitary sewers. In the late 1980’s, the City of Los Angeles imposed a moratorium that directly affected the building potential for multi-family in the west side of the City of South Pasadena. Although there are no current moratoriums on sewer
limitation and hook-ups, the development potential for the City will be directly impacted by the available sanitary sewer resource in the future.
8.2I Noise and the Community

Land use compatibility with noise is an important consideration in the planning and design process. Some land uses are more susceptible to noise intrusion than others, depending on the nature of activities expected with that use. For instance, at educational facilities it is important to concentrate and to communicate. An interior noise level in excess of 50 dBA may interfere with these activities. Similarly, interference with sleep may occur at 45 dBA from external noise sources, so the planning of residential land uses should address this as a standard.

Some land uses are more tolerant. These uses typically include activities that generate loud noise levels or those that do not require verbal interaction, concentration or sleep. Commercial and retail facilities require very little speech communications and therefore are generally allowed in noisier environments. Industrial areas can generate loud noises that would interfere more with communications than any exterior transportation-related noise.

In the future, the community may be exposed to significant unmitigatable noises due to major construction of infrastructures and road improvements. Extensive grading by the use of heavy equipment will present a negative impact to the community during the course of the construction. Although construction projects are considered short term, mitigation measures and monitoring will need to occur in order to extend the greatest level of protection to the community from excessive noise. The City will need to exercise great caution in addressing projects with significant noise impacts to the community.

• Sound Propagation

Noise sources may either be a “line source’ (e.g. a heavily traveled highway) or a “point source” (e.g. a stationary engine or compressor). Highway traffic noise on high volume roadways simulates a “line source” and the drop-off rate of sound with distance approaches “cylindrical spreading,” wherein a nominal 2.0 dBA drop occurs with each doubling of distance between the noise source and the noise receiver.

Environmental factors such as the wind direction and speed, temperature gradients, the characteristics of the ground (hard or soft) and the air (relative humidity), the presence of grass, shrubbery, and trees, often combine to increase the actual attenuation achieved outside laboratory conditions to 4.5 decibels per doubling of distance. Thus, a noise level of 74.5 decibels at 50 feet from a highway centerline would attenuate to 70.0 decibels at 100 feet, 65.6 decibels at 200 feet, and so forth. This is particularly true where the view of the roadway is interrupted by isolated buildings, clumps of bushes or scattered trees, or the intervening ground is soft or covered with vegetation and the source or receiver is located more than 3 meters above the ground.

In an area which is relatively flat and free of barriers, the sound resulting from a single “point source” of noise spreads in a spherical manner away from the source, and drops by a 6 decibels for each doubling of distance or 20 decibels for each factor of ten in distance. This applies to fixed noise sources and mobile noise sources which are temporarily stationary such as an idling truck or other heavy duty equipment operating within a confined area (such as industrial processes).

Sound attenuation from a train resembles a line source near the railroad tracks and a point source at distances beyond three-tenths of the train length.

• Motor Vehicle Noise

Noise levels adjacent to roadways vary with the volume of traffic, the mean vehicular speed and the truck mix. It takes a 26 percent increase in the traffic volumes on a given route to increase the adjacent noise levels by 3.0 dBA.
Changing the vehicle speed or truck mix has a more dramatic effect. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust system. As vehicle speed increases, so does the noise from these areas of the vehicle. The noise level adjacent to a roadway is highly dependent on vehicle speed, especially at lower speed levels. The highest speeds are typically measured midlink, where traffic lights, stop signs and cross traffic provide less interference. In most areas, the average speed is generally just below the posted speed limit.

• Significant Noise Sources

Noise in South Pasadena is primarily generated by vehicular traffic. Traffic noise comes from traffic on surface streets, from truck traffic on truck routes through town and from the Pasadena Freeway. Land uses adjacent to these roadways in the City are affected by motor vehicle generated noise.

Secondary sources of noise in the City are generated by construction and maintenance activities associated with both public and private works and development projects. In the future, the community may be exposed to significant unmitigatable noise due to major construction of infrastructures and road improvements. Extensive grading by the use of heavy equipment will present a negative impact to the community during the course of the construction. Although construction projects are considered short term, mitigation measures and monitoring will need to occur in order to extend the greatest level of protection to the community from excessive noise. A long term source of significant construction noise would result in the event the 710 Freeway extension is approved. While the City has gone on record as opposing the 710 Freeway extension, the City does support the Multi-Mode Low Build alternative that would result in minimal and short term construction noise.

The City will need to exercise great caution in addressing projects with significant noise impacts to the community. South Pasadena has taken a strong proactive position against this type of noise pollution by establishing an ordinance in 1991 to prohibit the use of “gas powered leaf blowers” in the City. Also, noise generated by aircraft, especially hovering helicopters, can be localized and temporary.

Current noise levels were monitored at six “sensitive receptor” locations in the City during a typical weekday in September of 1993, encompassing both single-family and multi-family residential units and a convalescent hospital. Measurements were made during the peak traffic hour to record maximum noise levels or during off-peak conditions and then modified to reflect peak conditions. The “ambient environment” includes noise emanating from the Pasadena Freeway (SR-110) and the local roadway network.

The findings are presented in Table VIII-1. Existing ambient noise levels range from 63.4 dBA to 70.6 dBA. Noise levels exceeded 65 dBA, a typical standard for “sensitive locations”, at four of the six locations monitored.
Table VIII-1
Ambient Noise Levels

<table>
<thead>
<tr>
<th>Location</th>
<th>Measured Leq.</th>
<th>Adjusted Leq.</th>
<th>Day</th>
<th>Time</th>
<th>Land Use</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>61.6</td>
<td>63.6</td>
<td>8/19</td>
<td>2:50 p.m.</td>
<td>SFD</td>
<td>East side of Orange Grove, two houses down from Columbia; primarily residential area.</td>
</tr>
<tr>
<td>2</td>
<td>63.4</td>
<td>63.4</td>
<td>8/19</td>
<td>2:25 p.m.</td>
<td>SFD</td>
<td>Grevelia at Fremont Avenue, at grade Railroad Crossing; primary source is freeway, which is depressed in this location.</td>
</tr>
<tr>
<td>3</td>
<td>68.7</td>
<td>70.6</td>
<td>8/19</td>
<td>2:05 p.m.</td>
<td>Hosp.</td>
<td>Mission near Meridian; convalescent hospital on Mission near rail; high truck mix.</td>
</tr>
<tr>
<td>4</td>
<td>64.6</td>
<td>66.3</td>
<td>8/19</td>
<td>3:15 p.m.</td>
<td>MFD</td>
<td>Fair Oaks near Rollin; multi-family area with school opposite.</td>
</tr>
<tr>
<td>5</td>
<td>64.3</td>
<td>65.6</td>
<td>8/19</td>
<td>3:45 p.m.</td>
<td>MFD</td>
<td>Huntington near Marengo Avenue; multi-family on both sides.</td>
</tr>
<tr>
<td>6</td>
<td>65.9</td>
<td>65.9</td>
<td>8/19</td>
<td>4:05 p.m.</td>
<td>SFD</td>
<td>Alhambra Road: single-family area with park to southwest</td>
</tr>
</tbody>
</table>

Source: The Planning Center: data from September 19, 1993

Five of the monitoring locations were located at residential sites; one measurement was at a convalescent facility. The residential noise measurement locations consisted of single family residences along major roadways or abutting freeways, with front yards and front doors often facing and at grade with the roadway. The noise level measured at the convalescent hospital on Mission Street was 68.7 dBA in front of patient rooms facing the roadway and therefore, outside the limits considered acceptable for this type of sensitive land use.

The measurement on Fair Oaks Avenue is representative of conditions at the middle school across the street, and the measurement on Alhambra Road is representative of conditions at the park across the street and to the southwest. The noise level measured near schools exceeded 65 dBA, which is not considered an acceptable exterior environment for the playgrounds and classrooms of educational facilities.
8.3  FUTURE CONDITIONS

8.3A  Slope Instability

Slope stability is dependent on a number of interrelated factors such as rock type and degree of porosity, and slope characteristics. In addition to geologic processes, climatic conditions, man-induced topographical alterations and earthquakes also trigger failure of unstable slopes.

According to the Los Angeles County Safety Element, landslide areas exist in the Repetto Hills just inside the western City boundary. The Monterey Road Landslide area, in the southwest portion of the City, is a particular area of concern. Although small in geographic extent, the landslide area is extremely unstable in certain portions. The extent of the landslide area is shown in Figure 3 below.

8.3B  Structural Failure

Being an older City with numerous historic structures, South Pasadena has the potential for impacts associated with the collapse of unreinforced masonry. A number of the structures are concentrated within the Fair Oaks Corridor and Mission Street Specific Plan area, although a large number of unreinforced masonry residential structures are scattered throughout the City. Many older residential structures also lack adequate foundations and foundation anchorage. Building codes in use in the City need to be assessed to determine if they are sufficient for the level of ground shaking anticipated in proximity to major faults.

8.3C  Flood and Inundation

Because of the City’s situation on a sloping plateau above the Arroyo Seco, no real concern exists about flooding on any significant scale. Heavy runoff from rain in hillside areas will continue to occasion localized flooding and soil erosion.

There is a risk of dam inundation in the Arroyo Seco Valley in the event of the failure of the Devil’s Gate Dam. Some consideration should also be given to the impact on homes below should the City’s water tower and reservoirs be damaged in a seismic event.

8.3D  Civil Commotion

The South Pasadena Police Department has long-standing operational procedures for dealing with civil commotions of either a localized or widespread nature. For purposes of this document, a civil commotion can be defined as any unlawful civil disruption or criminal disorder requiring the response of the majority of the available on-duty police force.

Local civil commotions can generally be handled through the use of on-duty police personnel. For protracted situations, including those that might extend beyond the city’s boundaries, the South Pasadena Police Department has mutual aid agreements with neighboring cities (Pasadena, San Marino, Alhambra and Los Angeles), or the South Pasadena Police Department has a plan for the organization to be divided in two and placed on 12 hour shifts until the end of the civil commotion.
8.3E Brush and Urban Wildfire
• **Brush Fires**

The major potential sources of wildland fire in South Pasadena are the Monterey Hills and Repetto Hills and the natural brushlands of the Arroyo Seco. The steeper slopes of the San Gabriel Mountains on the north of Pasadena and the vegetated Puente Hills slopes on the south pose a secondary threat to the City in that windborne embers may travel long distances in the wind and ignite rooftops and/or areas of dry grasses.

The threat of wildland fire to the City is generally low. A small portion of the southwestern corner of the City is identified in the Los Angeles County General Plan as having a high wildland fire hazard potential.

• **Urban Fire**

Urban fire is always a potential threat to property and life. Certain development patterns pose more difficult fire problems. These include multi-story, wood frame, high density apartment development; multi-story research development; large continuous developed areas with combustible roofing materials; and facilities that use and/or store hazardous materials. These situations exist in the City.

Features that affect fire control include type and use of structure, area of building, number of stories, roofing materials, and exposure to the building.

### 8.3F Community Evacuation

The City has enjoyed a relatively risk-free past from severe natural or man-made catastrophes where community evacuation has not been required. On a yearly basis, the City continues its participation with area wide and county earthquake preparedness drills that would generate the greatest possible potential for community wide mobilization. The primary agencies within the City that would be responsible for this task would be the Police and Fire Departments, in conjunction with any local or state agencies that may be mobilized after the episode.

The Fire Department has particular concern regarding the evacuation of the older part of the Monterey Hills from brush and structure fires. Due to the limited width of certain streets, effective community evacuation in that area would be hindered. The City will need to explore various means of increasing the accessibility of resident evacuation and emergency vehicle response.

### 8.3G Pollution Prevention and Disease Control

The primary threats of pollution that effect the City come in air and water pollution. Although no major generators of air pollution exist within the City, its geographic location in relationship to the Southern California air basin places the area in a non-obtainment area. Pollution from industrial thick sources and mobile sources will be the continuing air quality issues in the future. The City will need to take every and all available efforts to reduce the admissions of air pollution caused by mobile sources.

The City draws its primary water sources from the upper San Gabriel water basin that historically has had acceptable water quality. Increased urbanization and sub-surface discharge of contaminants will ultimately have an effect on the groundwater supply. Isolated instances of groundwater pollution have been experienced within South Pasadena (i.e., removal of gas stations and appropriate remediation processes have occurred). The City does have a cooperative agreement with the Metropolitan Water District to acquire additional water upon demand.

In conjunction with other county and state services, the City will need to be vigilant regarding its living environment so as to not foster the spread of contagious disease. Controlling the internal and external conditions that perpetuate vermin and unsanitary conditions will greatly assist in accomplishing this goal. Programs to facilitate community awareness of personal hygiene and proper food preparation will greatly reduce
the health risk. In the future, the City should consider adding a community-health component to its Public Works Department to provide the oversight that is continually required.

8.3H Noise Impacts and Mitigations

Noise impacts on the South Pasadena of the future will be largely the same as today.

Based upon the empirical data provided by noise measurements, the highway traffic noise prediction model developed by the Federal Highway Administration (RD-77-108) was used to evaluate existing noise conditions in the study area. This model utilizes various parameters including the traffic volume, vehicle mix and speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening and nighttime hours. The restaurant noise levels are then weighted and summed over 24 hourly periods to determine the CNEL value. Contours are derived through a series of computerized iterations to provide the 60, 65, and 70 CNEL locations. These contour locations can be used as a planning tool to locate noise sensitive receptors away from major noise generations. They apply only to first line receptors, as receptors set back further from the noise source will benefit from the shielding provided by intervening land uses. The contours do not assume the presence of any sound walls or barriers. In addition, the contours do not account for the fact that the Pasadena Freeway is depressed throughout the City. However, it can be assumed that the depression would result in a dBA reduction from levels identified in the table.

Land uses sensitive to noise will continue to include residences, schools, libraries, hospitals and convalescent homes, and recreational receptors. Certain areas in the City will continue to be subject to noise levels higher than is considered appropriate for these sensitive uses. For example, noise measurements showed that noise levels currently exceed 65 dBA at South Pasadena Middle School on Fair Oaks Avenue, which is considered only conditionally acceptable for outdoor classroom areas. A number of residential areas and perhaps some hospital facilities will likely remain subject to higher than optimal noise levels as a result of traffic on adjacent streets.

The light rail system of the Blue Line may eventually replace the terminated Santa Fe rail service, a previously significant noise source. Residential areas exist along the Blue Line’s route through the City, however, and residences along the rail right-of-way may still experience noise levels in excess of acceptable levels. For these reasons, the future noise contours would look the same as the existing noise contours.
Impact of Pasadena Freeway (SR-110)

The City of South Pasadena is impacted by noise from the Pasadena Freeway (State Route 110). The freeway is located adjacent to primarily residential areas in the northern portion of the City of South Pasadena. With a daily
traffic volume of 81,000 vehicles, the 65 dBA contour is projected to be located 343 feet from the centerline of the freeway with noise modeling. The noise measurement indicated 63.4 in proximity to the freeway in a residential area.

- **Impact of Designated Truck Routes**

Truck routes are so designated to direct large trucks onto roadways constructed for that purpose. In South Pasadena, local and regional growth patterns over time have directed trucks into these routes. Recently-approved projects have taken the additional noise into account; older development may not be constructed to appropriately attenuate the higher noise levels.

Truck routes within the City of South Pasadena have been designated for the following roadways:

- Pasadena Avenue (West City limits to Mission Street)
- Mission Street (Pasadena Avenue to Fair Oaks Avenue)
- Fair Oaks Avenue (North City limits to Huntington Drive)
- Huntington Drive (South City limits to Garfield Avenue)
- Fremont Avenue (Huntington Drive to South City limits)

Traffic noise generation varies according to the number and types of trucks as a percentage of the total vehicles using the roadway on a daily basis. Approximately 6 percent of the traffic along these routes are trucks, of which 50 percent are medium trucks. Medium-duty trucks are those with two axles and heavy-duty trucks are those with three or more axles. Since heavy-duty vehicles create much higher noise levels during a pass-by, the percentage of these trucks of the total mix is equally important.

Truck circulation is an important component of traffic flow in a City’s street network and provision of adequate, well placed truck routes is essential to maintaining the smooth circulation of traffic flow. Truck routes should be located such that truck travel on streets near residential areas is minimized, while facilitating the efficient transport of commodities throughout the City.

- **Noise Standards**

New development within the existing fabric can be subject to new noise standards. The following discussions address those standards.

---

1 Caltrans, 1990 Traffic Volumes on California State Highways.
The City of South Pasadena developed a Noise Element for its General Plan (1975) for use in local project planning. The goal of the Noise Element is to identify present noise levels and set forth a program for the control of noise levels that would be harmful to the health, safety and general welfare of the community. Some general objectives of the Element include limiting the noise levels within residential areas, establishing compatible land use adjacent to transportation facilities, and maintaining an ambient noise level within the City that will not be physically or psychologically detrimental to the residents of South Pasadena. Lastly, it is the objective of the element to establish appropriate standards and criteria for desirable sound levels and the identification of means available to achieve the sound levels in the community.

The League of California Cities has suggested that community ambient (average noise level of all background sounds) noise levels stay below the following levels identified in Table VIII-3.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Time</th>
<th>Quiet</th>
<th>Slightly Noisy</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-1 &amp; R-2</td>
<td>10:00 p.m. - 7:00 a.m.</td>
<td>45 dBA</td>
<td>50 dBA</td>
</tr>
<tr>
<td></td>
<td>7:00 a.m. - 7:00 p.m.</td>
<td>55 dBA</td>
<td>60 dBA</td>
</tr>
<tr>
<td></td>
<td>7:00 p.m. - 10:00 p.m.</td>
<td>50 dBA</td>
<td>55 dBA</td>
</tr>
<tr>
<td>R-3</td>
<td>10:00 p.m. - 7:00 a.m.</td>
<td>50 dBA</td>
<td>55 dBA</td>
</tr>
<tr>
<td></td>
<td>7:00 a.m. - 10:00 p.m.</td>
<td>55 dBA</td>
<td>60 dBA</td>
</tr>
<tr>
<td>Commercial</td>
<td>10:00 p.m. - 7:00 a.m.</td>
<td>55 dBA</td>
<td>60 dBA</td>
</tr>
<tr>
<td></td>
<td>7:00 a.m. - 10:00 p.m.</td>
<td>60 dBA</td>
<td>65 dBA</td>
</tr>
<tr>
<td>Industrial</td>
<td>anytime</td>
<td>70 dBA</td>
<td>75 dBA</td>
</tr>
</tbody>
</table>

Source: League of California Cities, Technical Papers.

The City of South Pasadena has a noise ordinance that provides noise guidelines and standards for significant sound generators. Chapter 19A of the South Pasadena Municipal Code, Noise Regulations, limits building construction activities including the operation of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist between the hours of 7 p.m. and 8 a.m. on Mondays through Saturdays, and on Sundays before 10 a.m. and after 7 p.m. within a residential zone or within a radius of 500 feet therefrom. These standards are provided to limit noise during sensitive time periods.

### State of California

Land Uses deemed noise sensitive by the State of California include schools, hospitals, rest homes, long-term care and mental care facilities. Many jurisdictions consider residential uses particularly noise sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some variability in standards for noise sensitivity may apply to different densities of residential development, and single family uses are frequently considered the most sensitive. Jurisdictions may identify other uses as noise sensitive such as churches, libraries, day care centers, hospitals and parks.
Table VIII-4 - Noise/Land Use Compatibility Matrix
Land uses that are relatively insensitive to noise include office, commercial and retail developments. There is also a range of insensitive noise receptors that include uses that generate significant noise levels or uses where the level of human occupancy is typically low.

Table VIII-4 diagrammatically identifies “normally acceptable,” “conditionally acceptable,” “normally unacceptable” and “clearly unacceptable” noise levels for various land use types. As shown therein, multiple family residential land use is “normally acceptable” in exterior noise environments up to 65 CNEL and “conditionally acceptable” up to 70 CNEL. Single family residential areas are “normally acceptable” up to 60 CNEL and “conditionally acceptable” up to 70 CNEL. Schools, libraries and churches are “normally acceptable” up to 70 CNEL, as are office buildings and business, commercial and profession uses. Recreational uses, such as water recreation, are “normally acceptable” up to 75 CNEL and “normally unacceptable” from 70 to 80 CNEL.

A “conditionally acceptable” designation implies that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use type is made and needed noise insulation features are incorporated in the design. By comparison, a “normally acceptable” designation indicates that standard construction can occur with no special noise reduction requirements.

8.3I Metro Blue Line Safety Impacts

The proposed MetroBlue Line extension through South Pasadena has potential safety impacts. The pending construction of the rail line along the MTA right-of-way will run from Union Station in downtown Los Angeles through South Pasadena to a terminus in east Pasadena. As a result, the South Pasadena Police and Fire Departments have determined that there may be public safety issues that may arise should the rail line proposal be implemented.

The MTA plans permanent street closures on Fairview Avenue and Magnolia Avenue. Street closures are expected to slow down the response time of the Fire Department by approximately 90 seconds, from an average 3 minute to 4.5 minute response time.

The proposal to construct a Blue Line rail station on Mission Street will result in a 90 second traffic blockage on Mission Street during transition periods when trains are concurrently operating en route from Pasadena to Los Angeles and to Pasadena from Los Angeles. During this time period, safety vehicles will not be able to cross on Mission Street and must use alternative routes to cross the right-of-way.
8.4 ISSUES

The primary public safety and noise issues of concern in South Pasadena are:

8.4A Seismic and Geological Hazards

The City of South Pasadena is located within a seismically active region. South Pasadena is likely to experience a strong earthquake sometime within the next 30 years which will be many times more powerful than the recent Whittier and Sierra Madre quakes. Faults shown in Figure 1, addressing local and regional seismicity, should be evaluated and a determination made of limitations to be imposed on any development in these areas. Although few of these faults are within the City boundaries, in the event of major seismic activity the City has the potential for landslides and severe ground shaking.

Land uses, such as hospitals, schools, fire stations and large auditoriums are most critical from a safety standpoint, and may warrant high levels of planning precaution. Secondary consequences such as slope instability, soil erosion, subsidence and groundwater contamination can impact hillside development.

8.4B Unreinforced Masonry Buildings

Being an older City containing a historic fabric, South Pasadena has the potential for impacts associated with the collapse of hazardous structures. Unreinforced masonry commercial buildings, as well as residential structures with unreinforced foundations or inadequate foundation anchorage, are scattered throughout the City. Building codes in use in the City need to be assessed to determine if adequate protection exists for the level of ground shaking anticipated in proximity to major faults.

8.4C Brush and Urban Wildfires

Brush and urban wildfires and adequate fire protection are matters of concern in both hillside areas, where dry brush can abound, and the balance of the City, where natural wood roofs and compact conditions are common.

8.4D Community Protection and Disaster Preparedness

Police and fire protection is vital to a resident’s feeling of well being in a community. Residents in the community pride themselves on the safe environment of their City. This environment is maintained by the adequate provision of police and fire personnel, proper and maintained equipment and well-located facilities.

8.4E Violence Prevention

Preventing violence is vital to creating and securing a nurturing community for every person, regardless of age. Violence in America is a major public health problem with alarming rates of rape, abuse, suicide and homicide being recorded annually, both nationwide and in our neighboring cities of Los Angeles and Pasadena. In the majority of reported cases, firearms are the instruments of death and youth are the main victims. Hand guns are the leading cause of death among California’s youth -- more than drugs, car crashes, or any single disease. We must deal with youth violence in South Pasadena through a proactive public health approach rather than by relying exclusively on a reactive criminal justice-oriented strategy.

8.4F Hazardous Waste Storage and “Hazmat” Transport
Hazardous materials are utilized by a number of businesses in South Pasadena every day. Large amounts of hazardous materials are transported over California’s highways. Any number of common household products contain hazardous materials. Serious environmental problems occur when hazardous and household chemicals are improperly disposed and these hazardous substances can leach through the soil to contaminate groundwater. Storage, transport and disposal of these materials require sound management practices at all levels.

8.4G Noise Considerations

The planning process has not traditionally been concerned with noise. In many instances, noise problems have been identified only after the noise sources have been allowed to establish in a community. It is now evident that these situations can be avoided by considering noise generators and sensitive noise receptors as part of the comprehensive planning process.

8.4H Community Wellness

The City of South Pasadena’s authority over public safety also includes public health.

City government should become observant of unhealthful conditions and be responsible for reporting them to proper authorities for verification and possible correction.

Community wellness is improved whenever local governments and community organizations actively develop positive relationships with county, state, and federal public health services, as well as with nearby emergency rooms, established clinics and hospitals.

Health education for all ages and services for pre-natal care and for adult screening are available through public and private agencies, and should be actively pursued and sponsored by the City.
8.5 GOALS AND POLICIES

GOAL 1: To minimize personal and property damage resulting from seismic hazards, including earthquakes and landslides.

Policies:

1.1: Closely monitor the geologic special studies zones, which extend 350 feet on both sides of known and suspected faults (see Figure 1). Prior to development in any such zone, continue to require a study by a registered geologist or certified engineering geologist to determine exact location and nature of the fault and the probability and probable extent of earthquake damage.

1.2: Pursue funding and programs to retrofit buildings in need of structural reinforcement.

1.3: Include earthquake preparedness in all regular building inspections by the fire department.

1.4: In all new residential construction, require that water heaters be bolted to the wall. Encourage owners of existing homes to bolt water heaters to the wall and encourage the use of tankless water heaters.

1.5: Review and update the Disaster Response Plan on a regular basis, including incorporation of evacuation routes into the Disaster Response Plan.

GOAL 2: To minimize risk to life and property from brushfires.

Policies:

2.1: Map and identify areas of wildfire hazard.

2.2: Maintain maximum standards for fuel modification zones between developed areas and natural areas in the Monterey Hills and Arroyo Seco. Fuel Modification Zones shall be maintained at private expense and on private property according to the applicable standards and regulations of South Pasadena Fire Department.

2.3: Maintain annual inspection of hillside properties to reduce the potential for wild fire hazards.

2.4: Maintain publicly owned properties to the same fuel modification standards as required for private property.
GOAL 3: To ensure the protection of all residents from geologic and groundwater hazards.

Policies:

3.1: Encourage critical structures that exist or may be built in the city (e.g., hospitals), to incorporate site-specific seismic design into the structure design.

3.2: Promote opportunities for aquifer recharge, encouraging developers to minimize paved areas in new developments and requiring these areas to be interspersed with landscaping.

3.3: Encourage, where feasible, use of turf block, decomposed granite, grasscrete or similar permeable surfaces rather than conventional pavement.

GOAL 4: To protect citizens and property from use, transport and disposal of hazardous materials.

Policies:

4.1: To the extent required by state and federal law, require an environmental audit for all new commercial and industrial development, including submittal of a site inspection report describing any pre-existing contamination of land, groundwater and structures. The site inspection report shall also specify steps to be taken to correct the problem prior to development.

4.2: Promote informational brochures summarizing hazardous waste management plans, including any updates of the plans and encourage organizations to share the plans with their members.

4.3: Develop programs to inform residents of the types of household hazardous wastes and the proper manner of disposal.

4.4: Explore the feasibility of a City-sponsored household hazardous waste collection program.

GOAL 5: To adequately protect indoor and outdoor living areas, and noise-sensitive uses such as schools and convalescent homes, from transportation noise impacts.

Policies:

5.1: Consider the noise impacts of new projects involving increases in noisy activities or traffic. An increase of 3 dBA or noise in excess of 65 dBA in sensitive areas shall be considered significant.

5.2: Work with neighborhoods affected by high traffic noise levels to determine and implement the appropriate types of noise mitigation.

5.3: Promote programs to enforce the Noise Ordinance. Review the Noise Ordinance for any needed updating on a regular basis.
GOAL 6: To promote public/community health.

Policies:

6.1: Promote wellness of all citizens.
6.2: Promote healthful air-quality and water-supply.
6.3: Ensure adequate disposal of sanitary-waste and solid waste.
6.4: Ensure enforcement of public health law.

GOAL 7: To continue efforts to protect South Pasadena residents from violence through outreach programs.

Policies:

7.1: Create a secure and nurturing community for all age groups.
7.2: Work with community organizations and institutions to empower and mobilize the community by educating residents concerning the roots of violence, and by advocating strategies that reverse the cycle of violence within families, neighborhoods and the community as a whole.
7.3: Stimulate and support innovative programs patterned on strategies that have succeeded in reducing youth violence in other communities through proactive public health approaches instead of relying on reactive criminal-justice approaches only.

GOAL 8: To provide and sustain the highest quality public safety facilities and services consistent with sound economic and fiscal responsibility.

Policies:

8.1: Continue financial support of police and fire services to maintain up to date and sufficient levels of personnel.
8.6 IMPLEMENTATION

8.6A The Safety Hazards and Noise Component

8.6B Strategies

POLICY 1: Minimize personal and property damage resulting from seismic hazards, including earthquakes and landslides.

Strategies:

1.1: Require all development in a geologic special studies zone to be setback 50 feet from each side of a mapped active fault trace.

1.2: Require structural reinforcement of all inventoried unreinforced masonry structures.

POLICY 2: Minimize risk to life and property from brushfires.

Strategies:

2.1: Require fire-resistant building materials for all structures in hillside areas and encourage use of fire resistant landscaping, such as iceplant.

2.2: Require house sprinklers where determined necessary by the Fire Department.

2.3: Require adequate fire flow and emergency access as a condition of approval for discretionary entitlements within Hillside areas.

POLICY 3: Ensure the protection of all residents from geologic and groundwater hazards.

Strategies:

3.1: Require a full site-specific geologic study of any hillside site within the purview of the hillside ordinance. The study shall adequately address site-specific questions such as slope stability, erosion, subsidence, groundwater effects and earthquakes.

3.2: Adopt and maintain regulations controlling grading and geologic study prior to construction.
POLICY 4: Protect citizens and property from use, transport and disposal of hazardous materials.

Strategies:

4.1: Enforce the “right-to-know” laws governing the disclosure of hazardous materials used by businesses located in South Pasadena.

4.2: Require that the transport of hazardous materials in the city be restricted to the routes designated for such transport.

4.3: Adopt, by reference, the Los Angeles County Hazardous Waste Management Plan.

POLICY 5: Adequately protect indoor and outdoor living areas, and noise-sensitive uses such as schools and convalescent homes, from transportation noise impacts.

Strategies:

5.1: Coordinate with CalTrans, Los Angeles County and adjacent cities to implement noise mitigating measures associated with the “Multi-Mode/Low Build” Route 710 Alternative and Pasadena’s Traffic Diversion Program.

5.2: Requires the inclusion of appropriate noise mitigation measures in the design as a condition of approval for projects involving a significant increase in noise.

5.3: Review truck routes for noise impacts on residential areas and sensitive land uses such as schools and hospitals. If changes in truck routes could reduce noise impacts on sensitive receptors, consider changing the routes.

5.4: Require the inclusion of appropriate noise mitigation measures in the design of any roadway projects.

5.5: Require sound insulation of all new development adjacent to high noise areas, including arterials and the freeway, to reduce interior noise levels to 45 dBA.

5.6: Promote the use of technology that minimizes the noise generated by the warning horns on the Blue Line System as it crosses public rights-of-way.
POLICY 6: Promote public/community health.

Strategies:

6.1: Create opportunities to all citizens for health education and provide information on free health clinics (or health services).

6.2: Monitor available water-supply periodically for contaminants and participate in regional policies reducing-air pollution.

6.3: Maintain available sanitary-sewer resources and monitor periodically for capacity and deterioration.

6.4: Provide periodic solid waste-collection and disposal.

6.5: Identify unhealthy conditions within the City and pursue enforcement of laws through the Los Angeles County Health Department.

POLICY 7: Continue to implement community outreach programs related to public safety and awareness.

Strategies:

7.1: Work with other community organizations to establish public policies regarding access to alcohol and other drugs which contribute to youth violence.