Chapter 5

SAFETY ELEMENT

TABLE OF CONTENTS

I. PURPOSE & INTENT **194**
II. BACKGROUND **194**
III. SEISMIC & GEOLOGICAL HAZARDS **194**
- Earthquakes & Fault Zones Affecting the Planning Area **194**
- Impacts of Earthquakes **198**
- Seismic Design Requirements **199**
- Landslides **199**
- Subsidence **200**

IV. FLOOD HAZARDS **200**
- Surface Water Drainage Patterns **200**
- Flood Control Regulations **202**
- Dam Failure **202**

V. FIRE HAZARD **203**
- Fire Protection Services **203**
- Wildland Fire Protection **204**

VI. SEVERE WEATHER CONDITIONS **206**
VII. HAZARDOUS MATERIALS **206**
VIII. EMERGENCY PREPAREDNESS AND RESPONSE **207**
- Emergency Preparedness Plans **207**
- Community Preparedness and Training **209**
- Emergency Access **210**

IX. LAW ENFORCEMENT AND CRIME PREVENTION **211**
- Police Protection **211**
- Detention Facilities **212**
- Crime Prevention Through Environmental Design **212**

X. TERRORISM **213**
- Bioterrorism Planning **215**
- Emergency Medical Services **216**

XI. ACCIDENT PREVENTION **216**
XII. SUMMARY OF SAFETY PLANNING NEEDS IN THE SANTA CLARITA VALLEY **216**
XII. GOALS, OBJECTIVES, AND POLICIES **218**
XIV. IMPLEMENTATION OF THE SAFETY ELEMENT **222**

LIST OF TABLES

Table S-1: Richter Scale of Magnitude for Earthquakes **195**
Table S-2: Historic Earthquakes Affecting the Santa Clarita Valley Planning Area from 1855 to 1999 ..... **198**

Safety Element

I. PURPOSE & INTENT

Local governments are charged with the responsibility of protecting their citizens from unsafe conditions in the planning area, including natural and man-made hazards that could affect life or health, property values, economic or social welfare, and/or environmental quality. The Safety Element describes natural and man-made hazards that may affect existing and future residents, and provides guidelines for protecting public health and safety. It identifies present conditions and public concerns, and establishes policies and standards designed to minimize risks from hazards to acceptable levels. In addition, the Safety Element informs citizens about hazardous conditions in specific areas, and assists policy makers in making land use and development decisions.

Although some degree of risk is inevitable because disasters cannot be predicted with certainty, unsafe conditions may be minimized through development of plans and policies to limit the public's exposure to hazards. For those cases in which disasters cannot be avoided, the Safety Element addresses emergency response services, and includes policies intended to minimize disruption and expedite recovery following disasters.

II. BACKGROUND

Section 65302 of the California Government Code requires that the Safety Element address risks associated with ground rupture and shaking, seiche and dam failure, slope and soil instability, flooding, urban and wildland fires, evacuation routes, and any locally-identified issues, such as crime reduction, emergency preparedness, and hazardous materials incidents. The aim of the Safety Element is to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from these hazards, by providing a framework to guide local land use decisions related to zoning, subdivisions, and entitlement permits.

Many of the issues covered in the Safety Element are also addressed in other Area Plan elements. The Safety Element is consistent with the Land Use Element because hazards were identified and considered when establishing appropriate land use patterns on the Land Use Map, in order to limit public exposure to risk. The Element is consistent with the Circulation Element, because circulation policies require adequate evacuation routes and emergency access throughout the community. The Element is consistent with the Housing Element, because residential areas have been designated and are required to be designed to protect neighborhoods from hazardous conditions. The Element is consistent with the Conservation and Open Space Element, because areas identified as potentially subject to flooding, slope failure, seiche, or other hazard, have been designated as Open Space. In addition, conservation policies to protect watersheds and hillsides are also intended to limit risk from flooding and slope failures. The Safety Element is consistent with the Noise Element, because policies in both elements are intended to protect the public from unhealthful conditions.

III. SEISMIC & GEOLOGICAL HAZARDS

Earthquakes & Fault Zones Affecting the Planning Area

The planning area contains, and is in the vicinity of, several known active and potentially active earthquake faults and fault zones. The term *fault* describes a fracture or zone of closely associated fractures, where rocks on one side have been displaced with respect to those on the other side. A fault zone consists of a zone of related faults which may be braided or branching. New faults within the region continue to be discovered. Scientists have identified almost 100 faults in the Los Angeles area known to be capable of a magnitude 6.0 or greater earthquake. The January 17, 1994, magnitude 6.7 Northridge Earthquake, which produced severe ground motions causing 57 deaths and 9,253 injuries, left over 20,000 displaced from their homes. Scientists have indicated that such devastating shaking should be considered the norm near any large thrust fault earthquake in the region. Recent reports from the U. S. Geological Survey and the Southern California Earthquake Center conclude that the Los Angeles area could expect one earthquake every year of magnitude 5.0 or more, for the foreseeable future.

A major earthquake in or near the Santa Clarita Valley may cause deaths and casualties, property damage, fires, hazardous materials spills, and other hazards. The effects could

be aggravated by aftershocks and the secondary effects of fire, chemical accidents, water contamination, and possible dam failures. The time of day and season of the year could affect the number of casualties and property damage sustained from a major seismic event. In addition to impacts on human safety and property damage, a major earthquake could cause socio-economic impacts on Valley residents and businesses through loss of employment, interruption of the distribution of goods and services, and reductions in the local tax base. Disruption of transportation, telecommunications, and computer systems could further impact financial services and local government. A catastrophic earthquake could exceed the response capability of the City and County, requiring disaster relief support from other local governmental and private organizations, and from the State and federal governments.

Earthquakes are classified by their magnitude and by their intensity. The intensity of seismic ground shaking is a function of several factors, including the magnitude of the quake, distance from the epicenter, and local geologic conditions. The largest or maximum credible earthquake a fault is capable of generating is used for community planning purposes. Earthquakes are typically defined by their magnitude as measured on the Richter Scale. Each whole number step in magnitude on the scale represents a tenfold increase in the amplitude of the waves on a seismogram, and about a 31-fold increase in energy released. For example, a 7.5-magnitude earthquake is 31 times more powerful than a 6.5-magnitude quake. The Modified Mercalli Intensity Scale is a measure of the damage potential of earthquakes, and contains 12 levels of intensity from I (tremor not felt) to XII (damage nearly total). For purposes of the discussion in this section, intensity is given using the Richter Scale, which is generally described in Table S-1.

Table S-1: Richter Scale of Magnitude for Earthquakes

Richter Magnitude	Earthquake Effects
Less than 3.5	Generally not felt, but recorded
3.5-5.4	Often felt, but rarely causes damage
5.5-6.0	Slight damage to well-designed buildings, can cause major damage to poorly constructed buildings over small regions.
6.1-6.9	Can be destructive in areas up to about 100 kilometers across, in areas where people live
7.0-7.9	Major earthquake; can cause serious damage over large areas.
8 or greater	Great earthquake; can cause serious damage in areas several hundred kilometers across.

Active faults are those that have caused soil and strata displacement within the last 11,000 years (the Holocene epoch). Potentially active faults show evidence of surface displacement during the last two million years (the Quaternary period). Figure S-1 shows the general location of faults which have experienced seismic activity within the last two million years and are considered to be active or potentially active, and which are located within or in the vicinity of the planning area. Faults capable of causing major damage within the planning area are listed below, with estimated potential magnitude indicated on the Richter scale.

- The San Andreas Fault Zone extends approximately 1,200 kilometers from the Gulf of California north to the Cape of Mendocino, where it continues northward along the ocean floor. The San Andreas Fault Zone marks the boundary between the Pacific and North American geotechnical plates; it is a right-lateral strike-slip fault that occurs along the line of contact between the two plates. The Fault Zone is located north of the City of Santa Clarita and extends through the communities of Frazier Park, Palmdale, Wrightwood, and San Bernardino. In 1857, a magnitude 8.0 earthquake occurred along a 255-mile long segment of this Fault, between Cholame and San Bernardino. This seismic event is the most significant historic earthquake in Southern California history. The length of the San

Andreas Fault Zone and its active seismic history indicate that it has a high potential for large-scale movement in the near future, with an estimated Richter magnitude of 6.8 to 8.0. Along the Mojave segment, closest to the Santa Clarita Valley, the interval period between major ruptures is estimated to be 140 years.

- The San Fernando Fault Zone is a thrust fault, 17 kilometers long, generally located approximately 20 miles southeast of Santa Clarita near the communities of San Fernando and Sunland. The Fault Zone's last major movement occurred on February 9, 1971, producing a quake with a Richter magnitude of 6.6 known as the San Fernando earthquake. The ground surface ruptures during this earthquake occurred on a little-known pre-existing fault in an area of low seismicity and previously unknown historic ground placement. The zone of displacement was approximately 12 miles long and had a maximum of three feet of vertical movement. The estimated interval between major ruptures along the San Fernando Fault Zone is estimated between 100 and 300 years, with a probable earthquake magnitude of 6.0 to 6.8.

- The San Gabriel Fault Zone traverses the planning area from northwest to southeast, extending 140 kilometers from the community of Frazier Park (west of Gorman) to Mount Baldy in San Bernardino County. Within the Santa Clarita Valley, the San Gabriel Fault Zone underlies the northerly portion of the community from Castaic and Saugus, extending east through Canyon Country to Sunland. Holocene activity along the Fault Zone has occurred in the segment between Saugus and Castaic. The length of this Fault, and its relationship with the San Andreas Fault system, contribute to its potential for future activity. The interval between major ruptures is unknown, although the western half is thought to be more active than the eastern portion. The Fault is a right-lateral strike-slip fault with an estimated earthquake magnitude of 7.2.

- The Holser Fault is approximately 20 kilometers in length extending from east of former Highway 99, westward to the vicinity of Piru Creek. Nearby communities include Castaic, Val Verde, and Piru. The surface trace of the Fault intersects the San Gabriel Fault east of Saugus. The most recent surface rupture has been identified as Quaternary period. Subsurface data in nearby oil fields demonstrate that the Holser Fault is a southward dipping, sharply-folded reverse fault. Subsurface exposures of this Fault in the Metropolitan Water District's Saugus Tunnel show at least 14 feet of terrace deposits offset by this Fault, which suggest that the Fault is potentially active. This Fault could generate a maximum estimated earthquake magnitude of 6.5.

- The Sierra Madre Fault is a 55-kilometer long fault zone generally located southeast of the planning area along the north side of the San Gabriel Mountains, extending from Sunland to Glendora. The Sierra Madre Fault is a reverse fault that dips to the north. The zone of faulting is similar to, and may lie within, the same fault system as the San Fernando Fault Zone, which moved in 1971. Movement along faults in this zone has resulted in the uplift of the San Gabriel Mountains. Geologic evidence indicates that the Sierra Madre Fault Zone has been active in the Holocene epoch. The interval between major ruptures is estimated at several thousand years, and the Fault Zone has an estimated earthquake magnitude of 6.0 to 7.0.

- The Santa Susana Fault is a thrust fault, dipping to the north. The Fault is located south of the intersection of Interstate 5 and State Route 14, and extends 38 kilometers from Simi Valley to the San Fernando Valley. Nearby communities include Sylmar and San Fernando. This Fault has been classified as potentially active by geologists based on evidence suggesting that movement has occurred within the past two million years (Quaternary period). In its western portions, there is evidence that the fault plane has been folded and would, therefore, probably not have renewed movement. The interval between major ruptures is unknown. Portions of the Fault Zone have an estimated earthquake magnitude of 6.5 to 7.3.

- The Oak Ridge Fault is a thrust fault extending 90 kilometers. The Fault is located west of the City and parallels the Santa Clara River and State Route 126 from Piru to the coast. Movement along the portion of the fault between Santa Paula and Ventura has been identified in the Holocene period. At its eastern end, the Oak Ridge thrust becomes more difficult to trace and appears to be overthrust by the Santa Susana Fault. The magnitude 6.7 Northridge earthquake in 1994 is thought to have occurred along the eastern edge

of the Oak Ridge Fault. The interval between major ruptures is unknown, and the maximum earthquake magnitude is estimated to be 6.5 to 7.5.

- The Clearwater Fault is an east/west trending reverse fault, approximately 32 kilometers in length. The Fault is located approximately 10 miles northeast of the Castaic community and runs through Lake Hughes and Leona Valley, where it merges with the San Andreas Fault Zone. Evidence of movement along this Fault has been identified in the Late Quaternary period. Although an estimate of the amount and type of displacement on the Clearwater Fault is difficult to determine, the Fault is considered to be potentially active.

- The Soledad Fault is a left-lateral normal fault 20 kilometers in length, located near the communities of Acton and Soledad Canyon. The Fault is considered to be active, with surface rupture during the Quaternary period.

- The Northridge Hills Fault crosses the San Fernando Valley through Northridge and Chatsworth, disappearing under thick alluvium in the east central valley. This Fault is believed either to be more than one fault plane or a splinter of faults that align and possibly blend with the fault complex in the Santa Susanna Pass, which extends west into Simi Valley. Near Northridge in the San Fernando Valley, the Northridge Hills Fault is buried beneath the alluvium, and the Fault's location is interpreted from oil industry data and from topographic patterns. The Fault is a reverse fault, 25 kilometers in length. This portion of the Fault has had movement during the late Quaternary period. Despite its name, it is not the fault responsible for the Northridge Earthquake (which occurred along the Oak Ridge Fault).

- The San Francisquito Fault is a subsidiary fault of the San Andreas Fault Zone. Although there is no evidence of recent activity, it has experienced up to seven meters of vertical displacement in the past. Originating just north of the Bouquet Reservoir, it extends under the dam and travels southwest to San Francisquito Canyon.

- The Pelona Fault, seven kilometers in length, is located near the community of Sleepy Valley and has ruptured in the Late Quaternary period.

In addition to seismic impacts from these faults, there is a potential for ground shaking from blind thrust faults, which are low angle detachment faults that do not reach the ground surface. Recent examples of blind thrust fault earthquakes include the 1994 Northridge (magnitude 6.7), 1983 Coalinga (magnitude 6.5), and 1987 Whittier Narrows (magnitude 5.9) events. Much of the Los Angeles area is underlain by blind thrust faults, typically at a depth of six to 10 miles below ground surface. These faults have the capacity to produce earthquakes of a magnitude up to 7.5.

The Alquist-Priolo Earthquake Fault Zoning Act, adopted by the State of California in 1972, requires identification of known fault hazard areas on a map and prohibits construction of specified building types within these fault hazard areas. The primary purpose of the Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. Pursuant to this law, the State Geologist has established Special Studies Zones around active faults, as depicted on maps distributed to all cities and counties. Local agencies are required to regulate development within these Special Studies Zones, and may be more restrictive than the State law based upon local conditions. Generally, the Act requires that structures for human occupancy must be set back 50 feet from the fault trace. Areas within the Santa Clarita Valley that are designated as Alquist-Priolo Special Studies Zones are shown on Figure S-1.

The planning area has experienced shaking from several earthquakes recorded back to 1855, as listed on Table S-2. Prior to that date the historic record is incomplete. Epicenters of historic earthquakes affecting the planning area are shown on Figure S-2. One of the largest occurred in 1857 in the area of Fort Tejon. Estimated at a magnitude of 8.0, this earthquake resulted in a surface rupture scar of about 220 miles in length along the San Andreas Fault, and shaking was reported from Los Angeles to San Francisco. The strongest recent seismic event was the January 1994 Northridge earthquake. The earthquake epicenter was located approximately 13 miles southwest of the Santa Clarita Valley in the Northridge community of Los Angeles County. Estimated damages from the quake included $650 million to residential structures, $41 million to businesses, and over $20 million to public infrastructure. Although no deaths were recorded in the Santa Clarita Valley from the earthquake, the event resulted in damage to water distribution and filtration systems, natural gas service, electrical service, and roads throughout the planning area.

Damage included the collapse of a freeway bridge at the Interstate 5/State Route 14 interchange, resulting in traffic and circulation impacts to the planning area for an extended period of time. Other damage included a crude oil release from a pipeline rupture and the dislocation of many mobile homes from their foundations. The City, County, and many other agencies cooperated in disaster recovery efforts, quickly re-establishing essential services and rebuilding critical facilities.

Table S-2: Historic Earthquakes Affecting the Santa Clarita Valley Planning Area 1855-1999

Year	Location	Richter Magnitude
1855	Los Angeles, Los Angeles County	Est. 6.0
1857	Fort Tejon, Kern County	Est. 8.0
1883	Ventura-Kern County border	Est. 6.0
1893	San Fernando Valley, Los Angeles County	Est. 5.5 - 5.9
1916	Near Lebec, Kern County	5.2
1925	Santa Barbara Channel, Santa Barbara County	6.3
1933	Huntington Beach, Orange County	6.3
1941	Santa Barbara Channel, Santa Barbara County	5.9
1946	Northeastern Kern County	6.3
1947	Central San Bernardino County	6.2
1948	Near Desert Hot Springs, Riverside County	6.5
1952	White Wolf Fault, Kern County	7.5
1971	San Fernando (Sylmar), Los Angeles County	6.7
1987	Whittier Narrows, Los Angeles County	5.9
1988	Pasadena, Los Angeles County	5.0
1991	Sierra Madre, Los Angeles County	5.8
1994	Northridge, Los Angeles County	6.7
1999	Hector Mine, San Bernardino County	7.1

Impacts of Earthquakes

Ground shaking is the most significant earthquake action in terms of potential structural damage and loss of life. Ground shaking is the movement of the earth's surface in response to a seismic event. The intensity of the ground shaking and the resultant damages are determined by the magnitude of the earthquake, distance from the epicenter, and characteristics of surface geology. This hazard is the primary cause of collapsed buildings and other structures. The significance of an earthquake's ground shaking action is directly related to the density and type of buildings and the number of people exposed to its effect.

Surface rupture or *displacement* is the break in the ground's surface and associated deformation resulting from the movement of a fault. Surface rupture occurs along the fault trace, where the fault breaks the ground surface during a seismic event. Buildings constructed on or adjacent to a fault trace are typically severely damaged from fault rupture in the event of a major fault displacement during an earthquake. As this hazard cannot be prevented, known faults are identified and mapped so as to prevent or restrict new construction of structures within fault hazard areas.

Liquefaction refers to a process by which water-saturated granular soils transform from a solid to a liquid state during strong ground shaking. Liquefaction usually occurs during or shortly after a large earthquake. The movement of saturated soils during seismic events from ground shaking can result in soil instability and possible structural damage. In effect, the liquefaction soil strata behave as a heavy fluid. Buried tanks may float to the surface, and structures above the liquefaction strata may sink. Pipelines passing through liquefaction materials typically sustain a relatively large number of breaks in an earthquake.

Liquefaction has been observed to occur in soft, poorly graded granular materials (such as loose sands) where the water table is high. Areas in the Santa Clarita Valley underlain by unconsolidated alluvium, such as along the Santa Clara River and tributary washes, may be prone to liquefaction.

Dam inundation is another potential hazard from seismic shaking. Within the Santa Clarita Valley, dams are located at the Castaic Reservoir and the Bouquet Reservoir. If the Castaic Reservoir Dam were to rupture from a seismic event, potential flooding could occur in Castaic, Val Verde, and

Valencia. Failure of the two dams at the Bouquet Reservoir could result in flooding downstream in Saugus and Valencia. These potential flood hazards are further discussed in Section IV (Flood Hazards).

A *seiche* is an earthquake-produced wave in a lake or reservoir. Seiches can be triggered by ground motion from distant earthquakes or from ground displacement beneath the water body. In reservoirs, seiches can generate short-term flooding of downstream areas. Within the planning area, the Bouquet and Castaic Reservoirs may be subject to seiches due to earthquake activity.

In addition to these impacts, a City emergency plan has identified the following potential damage to vital public services, systems, and facilities which may result from a catastrophic earthquake:

- Bed loss in hospitals;
- Disruption or interruption of communications systems;
- Damage to flood control channels and pumping stations;
- Damage to power plants and interruption of the power grid;
- Fires due to downed power lines and broken gas lines, exacerbated by loss of water pressure and potential damage to fire stations and equipment;
- Damage to freeway systems and bridges, and blocking of surface streets;
- Damage to natural gas facilities, including major transmission lines and individual service connections;
- Petroleum pipeline breakage and fuel spills;
- Interruption of rail service due to possible bridge and track damage;
- Interruption of sanitary sewage treatment; and
- Interruption of water import through the State Water Project system.

Seismic Design Requirements

In order to limit structural damage from earthquakes, seismic design codes have undergone substantial revision in recent years. Earthquake safety standards for new construction became widely adopted in local building codes in Southern California following the 1933 Long Beach Earthquake, and have been updated in various versions of the California Building Code since that date. The 1994 Northridge Earthquake resulted in significant changes to building codes to ensure that buildings are designed and constructed to resist the lateral force of an earthquake and repeated aftershocks. Required construction techniques to ensure building stability include adequate nailing, anchorage, foundation, shear walls, and welds for steel-frame buildings.

Both the City and County enforce structural requirements of the Building Code. The Alquist-Priolo Special Studies Zones and sound engineering and geotechnical practices are instrumental in evaluating the structural stability of proposed new development. Policies in the Safety Element are included to ensure that proposals for new development in the planning area are reviewed to ensure protection of lives and property from seismic hazards, through analysis of existing conditions and requirements for safe building practices.

Landslides

Landslides occur when the underlying geological support on a hillside can no longer maintain the load of material above it, causing a slope failure. The term landslide also commonly refers to a falling, sliding, or flowing mass of soil, rocks, water, and debris which may include mudslides and debris flows. Landslides generated by the El Nino storms of 1998 and 1992 illustrate the hazards to life and property posed by debris flows and landslides. The size of a landslide can vary from minor rock falls to large hillside slumps. Deep-seated landslides are caused by the infiltration of water from rain or other origin into unstable material. Fast-moving debris flows are triggered by intense rains that over- saturate pockets of soil on hillsides. Landslides may result from either natural conditions or human activity. They are often associated with earthquakes although there are other factors that may influence their occurrence, including improper grading, soil moisture and composition, and subsurface geology. Soils with high clay content or located on shale are susceptible to landslides, especially when saturated from heavy rains or excessive landscape

irrigation. Much of the planning area consists of mountainous or hilly terrain, in which conditions for unstable soils and landslides may be present.

The California Division of Mines and Geology has prepared Seismic Hazard Zone Maps of the Newhall, Mint Canyon, Oat Mountain, and San Fernando 7.5-minute quadrangles. These four quadrangles include land within the City limits. The maps identify areas of liquefaction hazard and earthquake-induced landslide hazard. Figure S-3 shows areas prone to earthquake-induced landslides and liquefaction, based on these maps.

Subsidence

Subsidence is the gradual, local settling or sinking of the earth's surface with little or no horizontal motion. Subsidence usually occurs as a result of the extraction of subsurface gas, oil, or water, or from hydro-compaction. It is not the result of a landslide or slope failure. Subsidence typically occurs over a long period of time and can result in structural impacts in developed areas, such as cracked pavement and building foundations, and dislocated wells, pipelines, and water drains. No large-scale problems with ground subsidence have been reported in the planning area.

Both the City and the County have adopted ordinances requiring soil and geotechnical investigations for grading or new construction in areas with a potential for landslide or subsidence activity, in order to mitigate potential hazards from soil instability.

IV. FLOOD HAZARDS

Surface Water Drainage Patterns

The term *flooding* refers to a rise in the level of a body of water or the rapid accumulation of runoff resulting in the temporary inundation of land that is usually dry. Flooding can be caused by rivers and streams overflowing their banks due to heavy rains. Flood hazards in the planning area are related to rainfall intensity and duration, regional topography, type and extent of vegetation cover, amount of impermeable surface, and available drainage facilities.

The size, or magnitude, of a flood is described by a term called a "recurrence interval." By studying a long period of flow records for a stream, hydrologists estimate the size of a flood that would have a likelihood of occurring during various intervals. For example, a five-year flood event would occur, on the average, once every five years (and would have a 20 percent chance of occurring in any one year). Although a 100-year flood event is expected to happen only once in a century, there is a one percent chance that a flood of that size could happen during any year. The magnitude of flood events could be altered if changes are made to a drainage basin, such as by diversion of flow or increased flows generated by additional impervious surface area.

The Federal Emergency Management Agency (FEMA) has mapped most of the flood risk areas within the United States as part of the National Flood Insurance Program. Most communities with a one percent chance of a flood occurring in any given year have the floodplains depicted on a Flood Insurance Rate Map (FIRM). Figure S-4 depicts the 100-year flood event boundaries for the major watercourses in the planning area, which are generally located within and directly adjacent to the Santa Clara River and its tributaries.

The Santa Clarita Valley contains many natural streams and creeks that function as storm drain channels, conveying surface water runoff into the Santa Clara River. From its headwaters in the San Gabriel Mountains to its mouth at the Pacific Ocean, the Santa Clara River drains a watershed of 1,643 square miles, approximately 80 miles in length and about 25 miles in width. Ninety percent of the watershed consists of mountainous terrain; the remaining portion is a mix of valley floor, floodplain, and coastal plain. Within the headwater areas of the Santa Clarita Valley, discharge during rainfall events tends to be rapid due to the steep terrain. High intensity rainfalls, in combination with alluvial soils, sparse vegetation, erosion, and steep gradients, can result in significant debris-laden flash floods.

The Santa Clara River and its tributary streams play a major part in moving the large volume of runoff that is generated from the valley and surrounding foothills and mountains. The drainage system, including natural streams as well as constructed storm drain infrastructure within City and County areas, is adequate to handle normal precipitation in the region (15 to 19 inches per year). With the rapid urbanization of the Valley since 1960, stormwater volumes have increased due to increased impervious surface area from parking lots, rooftops, and streets. Flood control facilities have been constructed to mitigate the impacts of development on drainage patterns, including flood control channels,

debris basins, and runoff control systems. Throughout the central portion of the planning area, streams have been channelized into soft bottom channels with concrete sides to allow for development in the floodplain of the Santa Clara River.

Because the channelization of stormwater can increase velocity and flows, much of the Santa Clara River has remained unchannelized and in a natural condition. Where flood control improvements have been required, the City has used buried bank stabilization as the preferred method of protecting adjacent development from flood hazards. Buried bank stabilization has been used along various reaches of the Santa Clara River, the South Fork of the Santa Clara River, and San Francisquito Creek. Stabilizing banks from erosion by use of buried reinforcement structures provides opportunities to maintain stormwater flows while protecting habitat along the river banks, providing aesthetic views of the watercourse, and creating opportunities to integrate channel improvements with trail systems.

The Los Angeles County Flood Control District (LAFCD) has constructed major flood control facilities in the planning area, including the concrete-lined portions of the Santa Clara River and its tributaries. The Los Angeles County Department of Public Works operates and maintains major drainage channels, storm drains, sediment basins, and streambed stabilization structures. Both the City and County are responsible for maintaining surface water quality through street sweeping, catch basin clearing, public education, and other measures required by the National Pollutant Discharge Elimination System (NPDES) permits issued by the Regional Water Quality Control Board.

As described in the Conservation and Open Space Element, both the City and County have acted to protect the Santa Clara River floodplain from development in order to maintain the river's natural character and to protect future development from flood hazards. The City's 1996 Santa Clara River Enhancement and Management Plan recommended an acquisition program for land adjacent to the river for open space, recreational, and flood protection uses, and the City has since acquired hundreds of acres of land along the river for these purposes. Within the County's adopted Newhall Ranch Specific Plan, land adjacent to the River was set aside for open space, floodplain and habitat protection; flood protection in this area will be achieved through bank stabilization, detention basins combined with habitat areas, rip rap, and soft-bottom channels designed to appear natural.

Localized flooding has been experienced intermittently in some areas of the Valley due to local drainage conditions. During heavy rains over the last few years some areas of Castaic, Newhall, Friendly Valley, and Bouquet Canyon have experienced mudflows or flooding. Local flooding can be exacerbated by erosion and mudslides when heavy rains occur after wildfires. Two areas of the City known to experience intermittent flooding are portions of Placerita Canyon, Sand Canyon, and Newhall Creek. During storm events, transmission of storm flows within the street right-of-way may cause localized flooding in these areas, rendering some roads impassable. Throughout most areas of the City, curbs and gutters have been designed to contain and carry storm flows into drainage structures; in these areas, stormwater water within the street that is contained by the curbs is an indication that the combined roadway-drainage system is functioning correctly.

The City has no plans to construct any new major drainage facility improvements. Engineering studies show that the current City system has adequate capacity to handle projected storm flows, provided it is properly maintained. In County areas, major drainage improvements will be constructed by developers as part of the infrastructure requirements for new master-planned communities. Portions of Sierra Highway north of the Santa Clara River are subject to flooding from Mint Canyon, and the lack of adequate flood control facilities in this area represents the last major constraint to development along this arterial corridor in Canyon Country. It is expected that new development along Sierra Highway will generate requirements for flood control improvements in this area. Within both jurisdictions, localized, short-term flooding resulting from excessive rainfall, soil erosion resulting from wildland fires, or inadequate local drainage infrastructure will be addressed by providing or requiring local improvements as needed.

As discussed in the Conservation and Open Space Element, one way to maximize use of existing flood control and drainage facilities is to limit the use of impermeable surface area on development sites. Design techniques available to increase infiltration and decrease runoff on development sites include use of permeable paving materials, eliminating

curbs that channel stormwater away from natural or landscaped areas, use of green roofs, and allowing greater building height to limit building footprints and maximize pervious site area. These and other similar techniques, collectively known as Low Impact Development (LID), were designed to enhance water quality by limiting soil erosion, sedimentation, and pollution from pavement into streams and rivers. LID principles also reduce impacts to drainage and flood control systems from increased flows generated by new development, and provide for recharge of local groundwater aquifers. Although flood protection devices and structures are necessary in some areas to preserve public safety, they will be combined with other available methods of reducing flooding by promoting infiltration of stormwater at the source through LID design principles.

Flood Control Regulations

Both the City and the County have adopted floodplain management ordinances to implement the National Flood Insurance Program and other federal requirements established by the Federal Emergency Management Agency. The County's ordinance is found in Chapter 11.60 of the County Code. In August 2008, the City adopted the Floodplain Management Ordinance (Chapter 10.06 of the City Municipal Code). The City's Floodplain Management Ordinance is based on the California Model Floodplain Management Ordinance issued by the California Department of Water Resources, which administers the National Floodplain Insurance Program for the Federal Emergency Management Agency. Both the County's and City's ordinances establish floodway maps, govern land uses and construction of structures within floodplains, and establish water surface elevations. Floodplains are divided into two types of hazard areas: 1) the "floodway," which is the portion of the stream channel that carries deep, fast-moving water (usually defined as the area needed to contain a 100-year storm flow); and 2) the "flood fringe" area, the remainder of the floodplain outside of the floodway, which is subject to inundation from shallow, slow-moving water. Drainage requirements are also addressed in other portions of the County Code and City Municipal Code, in order to ensure that stormwater flows are directed away from buildings into drainage devices to prevent flooding.

Dam Failure

Dam failure can result from natural or man-made causes, including earthquakes, erosion, improper siting or design, rapidly-rising flood waters, or structural flaws. Dam failure may cause loss of life, damage to property, and displacement of persons residing in the inundation path. Damage to electric generating facilities and transmission lines could also impact life support systems in communities outside of the immediate inundation area. Within the Santa Clarita Valley, the two major reservoirs which could have a significant impact on the Santa Clarita Valley in the event of a dam failure are located in Bouquet Canyon and Castaic. These facilities, along with potential inundation areas, are shown on Figure S-3.

The Bouquet Canyon Reservoir is located in the central portion of the planning area. The reservoir has two earth-filled dams, one on the west side overlooking Cherry Canyon, and one on the south side above Bouquet Canyon. Both these reservoirs are owned and operated by the City of Los Angeles, Department of Public Works. The Bouquet Reservoir has a maximum capacity of 36,505 acre feet of water and 7.6 miles of shoreline. Because of its two dams, two potential inundation areas have been identified in the event of a dam failure. On the Cherry Canyon side, the water would flow west for approximately two miles through the Canyon into San Francisquito Canyon, and then south for approximately 11 miles into the Santa Clara River. The Bouquet Creek dam would drain south through Bouquet Canyon for 17 miles, into the Santa Clara River.

The Castaic Dam is located on Lake Hughes Road, one mile northeast of Interstate 5, just north of the community of Castaic. This dam is operated by the State of California Resources Agency, Department of Water Resources. Castaic Dam is an earth-filled dam located at the confluence of Castaic and Elizabeth Lake Creeks. The dam facing is approximately one mile across with a maximum capacity of 350,000 acre-feet of water, covering a surface area of 2,600 acres with 34 miles of shoreline. Should a breach in the dam occur, the water will flow south in Castaic Creek for approximately five miles to the Santa Clara River.

Failure of these dams during a catastrophic event, such as a severe earthquake, is considered unlikely, due to their type of construction. However, local safety plans have considered the possibility of dam failure and have outlined a procedure for response and recovery from this type of hazard, including identification of inundation areas and evacuation routes.

V. FIRE HAZARD

Fire Protection Services

As part of the Consolidated Fire Protection District, the entire planning area receives urban and wildland fire protection services from the Los Angeles County Fire Department. Mutual aid agreements are maintained with several local, State, and federal agencies. The Fire Department also provides fire prevention services, emergency medical services, hazardous materials services, and urban search and rescue services.

In 2007, the Fire Department stations in the Santa Clarita Valley responded to 15,432 calls within the planning area, of which 594 were fire related and 10,093 were emergency medical services. The Fire Department also responded to 10 hazardous materials calls, including reports of hazardous conditions. The Fire Department has adopted a goal of responding to calls in urban areas within five minutes, in suburban areas within eight minutes, and in rural areas within 12 minutes. However, actual response times vary due to distances and road conditions. The 2007 median response times throughout the planning area were five minutes within the City limits, and less than eight minutes within unincorporated County areas.

As of December 2006 there were 10 fire stations in the planning area. Two additional stations, #75 in Chatsworth and #77 in Gorman, although outside the planning area, were able to provide support as needed and will continue to do so. In 2006, the Fire Department retained a consulting firm to analyze service levels and needs within its service area. The study concluded that there were insufficient fire stations in the Santa Clarita Valley to maintain desired service levels, and that the coverage areas were too large for the existing stations to meet target response times. Based on projected needs, the Fire Department planned construction of approximately 15 new stations in the Santa Clarita Valley by 2016. Since that time, the Fire Department has undertaken construction of Station #108 on Rock Canyon Drive, and has established temporary Stations #156 on Copper Hill Drive, #132 on Sand Canyon Road, and #104 on Golden Valley Road. Existing and planned fire stations are shown on Figure S-5.

Some fire stations in the Valley are geared toward providing urban fire protection services, while others in outlying areas respond to brush fires along the urban-wildland interface. According to Los Angeles County Fire Chief P. Michael Freeman, "The whole objective of firefighting is to try to catch the fire when it's small. The closer the station is to the location of the fire, the quicker we can get there and the better chance we'll have to keep it small." In 2007, the Fire Department opened two temporary fire stations (No. 132 on Sand Canyon Road in Stetson Ranch, and No. 156 on Copper Hill Drive in Saugus) to provide service until permanent stations are completed. The County also moved forward with plans and environmental documents to build two additional stations (No. 128 on Whites Canyon Road and No. 108 on Rock Canyon Road).

The County has adopted fire impact fees within the planning area to fund new construction of fire stations and purchase of capital fire equipment. These fees are collected from developers who are required to mitigate potential health and safety impacts from fire danger by funding construction of a new fire station or purchase of equipment. Funding is also provided by the County and the City through property tax revenue. Additionally, voters approved a special tax in 1997 to pay for essential fire suppression and emergency medical services.

In 2007, the Fire Department received funding from Los Angeles County to purchase new fire engines as part of the County's plan to phase out older fire equipment. Fire engines typically last about 15 years before they need to be replaced. Normally one or two engines are maintained within each fire station in the County. Other equipment is also planned for replacement to maintain effective operational capacity.

Fire prevention activities are headed by the County Fire Marshall, and include preparation of codes, ordinances and standards; plan checking for fire safety, sprinkler systems and fire alarms; fire inspections of structures; brush clearance compliance programs; fuel modification; education; fire investigation; establishing standards for access and fire flow in new subdivisions; and environmental review, among other activities. The Fire Department's Emergency Medical Services unit was established in 1969 to provide paramedics to respond to medical calls and implement advance life support. The Urban Search and Rescue service provides trained responders to rescue in confined spaces, by helicopter, by diving, and in other special circumstances. Hazardous material programs provided by the Fire Department are discussed in Section VII of this element.

The Peak Load Water Supply is the supply of water available to meet both domestic water and fire fighting needs during the particular season and time of day when domestic water demand on a water system is at its peak. Both the City and the County review new development plans to ensure that adequate water supply is available to provide fire flow as well as daily water supply, prior to issuance of building permits.

The City, Fire Department and various other County agencies are collaborating on a Joint Task Force to examine the ongoing needs of the Santa Clarita Valley for fire station development. This examination includes funding for construction and personnel and ways to assure appropriate fire staffing to meet anticipated growth, with the goal of continuing to provide the highest level of public safety services to Santa Clarita Valley residents.

Wildland Fire Protection

Wildland fire refers to a fire that occurs in a suburban or rural area that contains uncultivated lands, timber, range, watershed, brush, or grasslands, including areas in which there is a mingling of developed and undeveloped lands. For thousands of years, fires have been a natural part of the Southern California ecosystem. However, as urban development has spread throughout hillside areas of the region, wildland fires have come to represent a significant hazard to life and property.

The classic "wildland/urban interface" exists where well-defined urban and suburban development presses up against open expanses of wildland areas. Certain conditions must be present for significant interface fires to occur, including hot, dry, windy weather; the inability of fire protection forces to contain or suppress the fire; the occurrence of multiple fires that overwhelm committed resources; and a large fuel load (dense vegetation). Once such a fire has started, several conditions influence its behavior, including fuel load, topography, weather, drought, and development patterns. Southern California has two distinct areas of risk for wildland fires: 1) the foothills and lower mountain areas, typically covered with scrub brush or chaparral; and 2) the higher elevations of mountains, covered with heavily forested terrain.

Historical records kept by the U. S. Department of Forestry indicate that wildland fires occur regularly within the planning area, with large fires occurring approximately every 10 years. Fire danger rises based on the age and amount of vegetation; therefore, fire incidents tend to be cyclical in an area as vegetation intensity increases with age, and dead vegetation accumulates. The fall of 2003 was the most destructive wildfire season in California history. In a 10-day period, 12 separate fires raged across Los Angeles, Riverside, San Bernardino, San Diego, and Ventura Counties, burning almost 750,000 acres and resulting in the loss of 22 lives and 4,812 homes. The magnitude of the 2003 fires resulted from a combination of factors, including extended drought followed by thunderstorms, lightning strikes and windy conditions; an infestation of bark beetles that killed thousands of mature trees; and the practice of suppressing wildfires over the last century that has led to buildup of brush and highly flammable fuel loads.

Wildland fires can require evacuation of portions of the population, revised traffic patterns to accommodate emergency response vehicle operations, and restrictions on water usage during the emergency. Health hazards may exist for elderly or disabled persons who cannot evacuate or succumb to smoke and heat. The loss of utilities, and increased demand on medical services, can also be anticipated.

The Santa Clarita Valley planning area is susceptible to wildland fires because of its hilly terrain, dry weather conditions, and native vegetation. Steep slopes allow for the quick spread of flames during fires, and pose difficulty for fire suppression due to access problems for firefighting equipment. Late summer and fall months are critical times of the year when wildland fires typically occur, when the Santa Ana winds deliver hot, dry desert air into the region. Highly flammable plant communities consisting of variable mixtures of woody shrubs and herbaceous species, such as chaparral and sage vegetation, allow fires to spread easily on hillsides and in canyons. According to the Fire Department, 80 to 90 percent of the planning area is located in a Very High Fire Hazard Severity Zone, which is the highest classification for areas subject to wildfires. The potential wildland fire hazard areas within the planning area are shown on Figure S-6.

Areas subject to wildland fire danger include portions of Newhall and Canyon Country, Sand Canyon, Pico Canyon, Placerita Canyon, Hasley Canyon, White's Canyon, Bouquet Canyon, and all areas along the interface between urban development and natural vegetation in hillside areas. Fire hazards increase with any drought periods, and are highest

for structures at the fringe of forested or wildland areas. In addition to the damage caused directly by a foothill fire, further damage may be caused by resulting mudslides during subsequent rains.

In October 2007, wildfires again swept through Southern California, including the Santa Clarita Valley. Emergency response procedures put into place after the 2003 fires reduced losses through better notification and evacuation procedures, and through quick action by the State and Federal governments to declare an emergency and provide suppression support. Within the Santa Clarita Valley the 2007 fires included the Buckweed Fire, which burned 38,356 acres; the Magic Fire, which burned 1,750 acres; and the Newhall Fire, which burned 40 acres. The Ranch Fire, which burned 55,756 acres, started near Castaic and burned primarily wildland areas. To respond to these fires, the City set up a telephone bank that handled thousands of phone calls, and transformed Central Park into a Fire Department base camp for firefighters. Local Assistance Centers were set up to help residents file FEMA claims, and the nonprofit Santa Clarita Valley Disaster Coalition solicited and disbursed funds for fire victim relief. Twenty-one homes were destroyed and 15 homes damaged by the Buckweed Fire, but no lives were lost.

Local fire response resources include those of the Los Angeles County Fire Department, the Fire Services mutual aid system, the California Division of Forestry, and the United States Forest Service (USFS). The combination of forces applied will depend upon the severity of the fire, other fires in progress, and the availability of resources. Suppression efforts can involve fire equipment, heavy construction equipment, and air fire bombardment aircraft, in addition to hand crews.

The Fire Department operates 10 fire suppression camps assigned to the Air and Wildland Division, of which four camps employ paid personnel and six camps are staffed with inmate crews from detention facilities. Wildland fire crews are used for fire protection, prevention, and suppression activities. They control wildland fires by cutting a control line around the perimeter of a fire, coordinating activities of bulldozers, and use of water-dropping helicopters and fixed wing aircraft, as deemed appropriate. The Fire Department also oversees vegetation management for fuel reduction, and provides response to other emergency incidents as required.

Under a mutual aid agreement covering federal forest lands, responsibility for non-structure fires within the National Forest belongs to the USFS, while the Fire Department has the responsibility for suppressing structure fires. In practice, each agency cooperates in fighting both wildland and structural fires during actual fire emergencies. There are five USFS fire stations located within the planning area.

In addition to suppression activities, the Fire Department has adopted programs directed at wildland fire prevention, including adoption of the State Fire Code standards for new development in hazardous fire areas. Fire prevention requirements include provision of access roads, adequate road width, and clearance of brush around structures located in hillside areas. In addition, proof of adequate water supply for fire flow is required within a designated distance for new construction in fire hazard areas. The Fire Department also provides fire safety training to County residents and youth education programs on fire safety and prevention. The City teams with the County to provide training to residents on fire prevention and response, through the Community Emergency Response Training (CERT) program, and other educational programs described in Section VIII of this element (Emergency Preparedness and Response).

Residents with homes located in urban/wildland interface areas must bear some of the responsibility for preventing the spread of wildland fires. Houses surrounded by brushy growth rather than cleared space allow for greater continuity of fuel and increase the fire's ability to spread. Homeowners should also consider whether their home is located near a fire station, has adequate access for fire suppression vehicles, has adequate water supply for fire flow, is located away from slopes or canyons which act to draw fires upward, and is constructed with fire-resistant materials and design features, such as non-combustible roofing and boxed eaves. The California Department of Forestry and Fire Protection has issued guidelines for fuel reduction and other fire safety measures in urban/wildland interface areas.[1] These guidelines were issued in response to recent changes to Public Resources Code Section 4291 that increased the defensible space clearance requirement from 30 feet to 100 feet around structures. For fire protection purposes, "defensible space" means the area within the perimeter of a

1 California Department of Forestry and Fire Protection, *General Guidelines to Implement Performance Based on Defensible Space Regulations under PRC 4291*, 2005.

parcel where basic wildfire protection practices are implemented. This area is characterized by adequate emergency vehicle access, emergency water reserves, street names and building identification, and fuel modification measures. Fuel reduction through vegetation management around homes is the key to saving homes in hillside areas. The City, County and Fire Department will continue to provide public education programs about fire prevention strategies for residents in interface areas.

After a fire has been suppressed in a wildland area, the work of restoration begins. The Burned Area Emergency Response (BAER) Team is a group of specialists in fields such as hydrology, soil sciences and wildlife management who evaluate damage to habitat areas from fires, and from firebreaks which may have been constructed to contain fires by cutting and clearing vegetation with earthmovers. In order to prevent erosion and re-establish vegetation consistent with native plant communities, appropriate planting and other management techniques must occur as soon as possible after a fire is extinguished.

VI. SEVERE WEATHER CONDITIONS

Severe weather threats for Santa Clarita Valley residents were identified in the City's Natural Hazard Mitigation Plan as including extreme heat and high-velocity winds. Extreme heat results in excessive demands on the regional power grid to supply electricity for air conditioners. Long periods of extreme summer heat can affect the local water table levels and soil quality, increasing the risk of flash floods if rain occurs. In addition, extreme heat for extended periods increases the risk of wildland fires and exacerbates formation of ozone, resulting in impaired air quality. Exposure by humans to excessive heat can result in heat exhaustion or heatstroke; each year, about 175 Americans die as a result of summer heat waves.

The planning area is also subject to strong winds, with hot dry Santa Ana winds often reaching a velocity of 60 miles per hour between the months of October and March. These winds may overturn trees, create unsafe driving conditions for motorists, and damage utility lines. They also create ideal conditions for the origin and spread of wildfires, by drying out vegetation and spreading sparks. High wind events occur from 5 to 10 times per year in the planning area.

The Natural Hazard Mitigation Plan addressed these potential safety hazards with goals focused on public education regarding precautions against exposure to high heat and poor air quality; tree trimming programs to address falling limbs and trunks during high winds; participation in regional notification programs regarding power black-outs; debris management after windstorms; and undergrounding of utility lines.

VII. HAZARDOUS MATERIALS

Hazardous materials include any substance or combination of substances which, because of quantity, concentration, or characteristics, may cause or significantly contribute to an increase in death or serious injury, or pose substantial hazards to humans and/or the environment. These materials may include pesticides, herbicides, toxic metals and chemicals, liquefied natural gas, explosives, volatile chemicals, and nuclear fuels.

Within the planning area, a hazardous materials release or spill would most likely involve either transportation of materials by railroad or truck, use of hazardous materials at a business, or illegal dumping of hazardous wastes. Hazardous materials are transported to and through the planning area by vehicles using Interstate 5, State Routes 14 and 126, and the Union Pacific Railroad.

California law provides a general framework for regulation of hazardous wastes by the Hazardous Waste Control Law (HWCL), passed in 1972. The Department of Toxic Substances Control (DTSC) is the State's lead agency for implementing the HWCL, which regulates hazardous waste facilities and requires permits for facilities involved in the generation, treatment, storage, and disposal of hazardous wastes. In 1986 the State passed the Tanner Act (AB 2948) which governs the preparation of hazardous waste management plans and siting of hazardous waste facilities. Under this Act each County must adopt a Hazardous Waste Management Plan. The Los Angeles County Hazardous Waste Management Plan provides direction for the proper management of all hazardous waste in the County and 38 contract cities, including data on hazardous waste generation, existing treatment facilities, household and other small generator waste, and siting criteria for hazardous waste management facilities. Any such facility is required to consider protection of residents, surface and

groundwater quality, air quality, environmentally sensitive areas, structural stability, safe transportation routes, social and economic goals.

Within Los Angeles County, the Fire Department has the responsibility of regulating hazardous waste management through its Health Hazardous Materials Division (HHMD). The County's Public Works Department assists through implementation of the underground storage tank program. There are three County fire stations that handle hazardous materials incidents (known as Haz Mat Stations); Station 76 is located in Valencia and serves the Santa Clarita Valley. Emergency response to accidents associated with hazardous material is generally undertaken by the Fire Department and its HHMD Division, pursuant to the Los Angeles County Fire/Health Haz Mat Administering Agency Plan. The transport of hazardous materials and explosives through the planning area on State highways and freeways is regulated by the State Department of Transportation (CalTrans).

The U. S. Environmental Protection Agency maintains a list of all sites in the nation that are contaminated with hazardous substances. This list is known as the CERCLIS Database. The Department of Toxic Substances Control (DTSC) also maintains a list of contaminated sites in the State for which it is providing oversight and enforcement of clean-up activities, known as the Cal-Sites Database. As of 2003, there were nine sites in the planning area on which clean-up was either on-going or completed. Of these, the most significant in terms of area and potential for redevelopment is the Whittaker-Bermite property, a 988-acre site previously used for explosive and flare manufacture. Today the site is largely vacant and is undergoing clean-up of perchlorate and other chemicals released by previous industrial users. The DTSC is responsible for overseeing the soil and groundwater remediation activities at the site.

A number of options are provided to help residents and businesses safely dispose of hazardous waste. The City's residential waste hauler (Waste Management) provides bulky item pickup service, which includes electronic waste (e-waste) such as old computers and televisions. Residents may also drop off e-waste items at the waste hauler's yard. The City also has a door-to-door Household Hazardous Waste pick-up program run through Curbside, Inc., under which limited amounts of antifreeze, automobile batteries, motor oil and filters, house paint, and e-waste will be picked up upon receiving telephone notification. Programs for disposal of e-waste and small amounts of hazardous waste generated from businesses in the City are also available through Curbside, Inc., while larger quantities generated from businesses must be disposed of through a qualified hauler.

The County offers weekly household hazardous waste collection events at various locations throughout the County, including the Santa Clarita Valley, at which residents can drop off their hazardous waste for disposal. The County also maintains several permanent collection facilities; for Santa Clarita Valley residents, the closest permanent hazardous waste collection facility is located in Palmdale (1200 W. City Ranch Road). County residents may also use City of Los Angeles hazardous waste collection centers; the closest of these facilities is in Sun Valley (11025 Randall Street). Hazardous waste collection for businesses located in County areas must be arranged with private waste haulers. All hazardous waste collected is disposed of in a hazardous waste landfill.

Information on City and County programs for disposal of hazardous waste is available on the websites of each agency.

VIII. EMERGENCY PREPAREDNESS AND RESPONSE

Emergency Preparedness Plans

In an emergency, local governments must provide emergency response services in addition to maintaining normal day-to-day duties, to the extent possible. The California Code of Regulations establishes the standard response structure and basic procedures to be used by local governments for emergency response and recovery. As required by State law, both the County and City have adopted the Standardized Emergency Management System (SEMS) for managing response to multi-agency and multi-jurisdictional emergencies, and to facilitate communications and coordination among all levels of government and affected agencies. SEMS establishes organizational levels for managing emergencies, standardized emergency management methods, and standardized training for responders and managers. When fully activated, SEMS activities occur at five levels: field response, local government, operational areas (county-wide), Mutual Aid Regions, and at the State level.

Both City and County emergency plans provide operational concepts, describe responsibilities, and outline procedures for emergency response. The County has adopted an Operational Area Emergency Response Plan, which describes the planned responses to emergencies associated with natural and man-made disasters and technological incidents. The City's 2003 *SEMS Multihazard Functional Plan* addresses planned response to emergencies associated with natural disasters and technological incidents, including both peacetime and wartime nuclear defense operations. Along with all the hazards discussed above, the Plan addresses response procedures for a major airplane crash, train derailment, truck incident, Metrolink incident or collision, civil unrest, terrorism, and nuclear attack. Emphasis is given to emergency planning; training of full-time, auxiliary and reserve personnel; public awareness and education; and assuring the adequacy and availability of sufficient resources to cope with emergencies. The Plan also identifies appropriate land use, design, and construction regulations to reduce losses from disasters. The City's SEMS Plan addresses the following four phases of emergency response:

1. Preparedness phase, requiring increased readiness for emergency through preparation of emergency plans and procedures, providing information and training, inspection of critical facilities, recruitment of disaster personnel, mobilization of resources, and testing of systems.

2. Response phase, which may require evacuation of threatened populations, dissemination of public information about the disaster, coordination with other agencies, obtaining mutual aid, declaration of a Local Emergency, evaluation of damage, establishment of care and shelter operations, and restoration of vital services and utilities.

3. Recovery phase, which may include coordinating assistance programs and support priorities, rejoining affected families, providing essential services, restoring property, identifying residual hazards, mitigating future hazards, and recovering costs.

4. Mitigation phase, designed to mitigate impacts after the disaster through updating local ordinances and codes, upgrading structures, recovering costs, providing information and training, and revising land use plans as needed.

In addition to the SEMS Plan, in 2004 the City adopted a five-year Natural Hazard Mitigation Action Plan as a collaborative effort between City staff and citizens, public agencies, non-profit organizations, the private sector, and regional and State agencies. The Plan provides a list of activities that may assist the City in reducing risk and preventing loss from natural hazard events, including earthquakes, floods, hazardous material spills, landslides and earth movement, severe weather, and wildland fires. The Plan contains a five-year action matrix based on the following mission statement: "To promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards. This can be achieved by increasing public awareness, documenting the resources for risk reduction and loss-prevention, and identifying activities to guide the City toward building a safer, more sustainable community." The Natural Hazard Mitigation Plan also identifies all critical facilities and infrastructure and establishes goals to increase emergency response and enhance recovery.

In 2006, the City of Santa Clarita adopted and implemented the National Incident Management System (NIMS) to comply with Federal Department of Homeland Security requirements, based on Homeland Security Presidential Directive 5 (HSPD-5), Management of Domestic Incidents. This directive required a phased-in adoption and implementation of NIMS by State and local governments as a condition of receipt of federal preparedness funding, including Homeland Security grants. HSPD-5 requires all federal, State, local and tribal jurisdictions to adopt NIMS and use it in their individual domestic incident management, emergency prevention, preparedness, response, recovery, and mitigation activities. NIMS does not replace SEMS, but will rather be integrated into SEMS by emergency personnel. Because the federal government modeled NIMS after SEMS, the two systems use similar terminology and procedures, although NIMS also includes new requirements for reporting and qualifications.

The City has implemented a regional telephone notification system that will be able to send information to residents and businesses within the Santa Clarita Valley affected by, or in danger of, the impacts of an emergency or disaster. Emergency response personnel can use the system to notify those homes and businesses that are at potential risk with information on the events and/or actions (such as evacuation) that the City and local public safety officials are asking

them to take. The City's notification system includes the incorporated City limits as well as areas outside the City. The school districts have separate notification systems, and the County is preparing to implement a Countywide call system. In the event of evacuations, the Fire Department directs the Sheriff's Department regarding areas that need to be evacuated. That information is then shared with the City's Emergency Operations Center, and emergency notification is then conveyed to residents.

Another method of relaying emergency-related information is through the City's e-alert. This phone-based tool allows residents to receive mobile phone text alerts concerning emergencies affecting the community. Residents can subscribe and automatically receive emergency-related text alerts (eAlerts) from the City by texting the term "SCEMERGENCY" to 41411 from any mobile phone device and mobile service provider.

Community Preparedness and Training

The County and City both implement comprehensive programs for emergency preparedness, including community involvement and training. To educate the public about emergency response, the City and County cooperate to offer residents training through the Community Emergency Response Training (CERT) program, which focuses on effective disaster/emergency response techniques. The CERT program is designed to help families, neighborhoods, schools and businesses prepare for effective disaster and emergency response through training and pre-planning. Program material covers earthquakes, fires, floods, hazardous materials incidents, and other life-threatening situations. Participants attend seven weekly classes designed to help them recognize potential hazards and take appropriate actions; identify, organize, and utilize available resources and people; and treat victims of life-threatening conditions through Simple Triage and Rapid Treatment (START). A second class is also offered to graduates of the basic CERT course, which provides more in-depth training on critical incident stress management, handling animals during disasters, community traffic safety, and the Incident Command System. From 1997 through 2007, more than 1,100 Santa Clarita Valley residents were trained in the CERT program.

In 2001, the CERT program was expanded with another level of training, CERT II. The training provided in this second CERT program was developed and implemented based on the emergency response issues of the Santa Clarita Valley, and includes modules on Community Traffic Safety; Psychological First Aid (Critical Incident Stress Management); SEMS, NIMS, and Incident Command; and Animal Preparedness.

Once a year the City also presents an Emergency Expo, attended by several thousand residents, at which residents are provided with information materials on emergency preparedness. Over 60 agencies and vendors participate in this event, in an effort to provide relevant information with an interactive approach. The City promotes the CERT program at the Emergency Expo by using CERT-trained volunteers to provide information at various booths and activities.

Through its emergency management program, the City also provides ongoing training and outreach to schools, businesses, faith-based institutions, seniors, and the special needs community. The City uses its website, City Hall, and local libraries as locations to distribute information on disaster preparedness and response to residents.

Since 2006, the City has collaborated with the College of the Canyons, the Los Angeles County Department of Public Health, the Sheriff's Department, and CERT volunteers to develop and adopt a Point of Dispensing (POD) plan to respond to bioterrorism, pandemic flu epidemics, or similar public health threats. The plan is based on a multi-agency approach using the NIMS model, and included conducting a drive-through medication dispensing exercise to be used in the event a mass quantity of medications needs to be distributed to the public within a short period of time. In 2006 and 2007, trained student nurses from College of the Canyons worked side by side with Public Health personnel administering flu shots, in order to test the drive-through model.

The Santa Clarita Emergency Communications Team is a local chapter of the County Disaster Communication Service and is registered as a civil defense organization under the Radio Amateur Civil Emergency Service (RACES). The team's primary purpose is to supply emergency communications for the Los Angeles County Sheriff's Department and the City of Santa Clarita. Members are volunteer amateur radio operators who assist other emergency responders by enhancing communications services. Members also assist with the Santa Clarita Fire Watch program and the School

Emergency Communication Plan. In addition to emergency response, the group assists with community events such as the Santa Clarita Marathon, Cowboy Poetry Festival, and Fourth of July Parade.

In spite of these programs and the outreach efforts by the City and County, many residents are not adequately prepared for emergencies. A 2007 County Department of Public Health Report found that more than 20 percent of households in the County did not have emergency supplies on hand, and only 41 percent of the respondents said they had an emergency plan for their family. In a major disaster each household may need to survive on its own resources for several days before help arrives. It is necessary for each family and head of household to proactively prepare for emergencies by developing a plan and stockpiling adequate supplies. Information on how to prepare for disasters is available on the City's website and through the training programs described in this section.

Emergency Access

The Santa Clarita Valley has freeway access along only three routes – Interstate 5 and State Route 14 going north and south, and State Route 126 going west – to use for evacuation purposes in the event of an emergency such as fire or earthquake. Residents in some areas, such as Stevenson Ranch and Castaic, will need alternate evacuation routes in case Interstate 5 is closed during an emergency incident. City and County staff have developed alternate evacuation routes along surface streets to provide alternate travel routes through and out of the Santa Clarita Valley. Opening of the new Cross Valley Connector will also provide an effective east-west route for use in the event of an emergency.

In addition to addressing evacuation routes, detour routes have been implemented through the Santa Clarita Valley in the event that the local freeways are closed. The Santa Clarita Valley has been affected by major highway closures that, like the 1994 Northridge Earthquake, cut off the Santa Clarita Valley from the San Fernando Valley and beyond. One of the most recent incidents occurred when a big rig crashed inside a truck route tunnel under the Interstate 5. The result was a 30-plus big rig and car pile up that cost three lives and caused the two-day closure of the north and southbound lanes of Interstate 5. Interstate 5 is California's main north/south highway, and locally, handles in upwards of 250,000 cars per day. The resulting impacts to local streets put the City of Santa Clarita's Emergency Operations Center into action, along with its state-of-the-art traffic monitoring and control technology.

The Los Angeles County Sheriffs Traffic Division, City of Santa Clarita, California Highway Patrol, and Caltrans developed a traffic plan that included three alternate routes (A, B, and C as noted in Figure S-7) through the City of Santa Clarita from Interstate 5 to State Route 14. In addition, the City of Santa Clarita worked with Metrolink to add additional commuter trains and parking at the City's three Metrolink stations. City staff also personally directed commuters to the newly expanded parking lots for the Monday morning commute and provided shuttle service for quick access to the stations. Residents were also able to stay informed of unforeseen changes to their specific route through U-Text, a text messaging service that allows commuters to subscribe and receive mobile phone text alerts when there are urgent changes to a commuter route.

The 1994 Northridge Earthquake toppled the Interstate 5/State Route 14 interchange, and the same interchange also collapsed during the 1971 Sylmar earthquake. Since that time, the interchange has been rebuilt to enhanced seismic standards. Caltrans has also tested all freeway bridges and interchanges in Los Angeles and Ventura Counties to ensure they meet current seismic standards for structural safety.

During the development review process, emergency access is evaluated for all pending development projects. Two means of ingress and egress are required for all major development projects, including subdivisions and commercial/industrial sites. Adequate road and driveway widths are required to provide access to fire trucks, along with turnouts and turnaround areas where deemed necessary. Traffic control during evacuation procedures will be based upon the nature of the emergency and the condition of the roads. Temporary signage will be placed by the City and County Public Works Departments to ensure that evacuation routes are clearly marked for motorists.

IX. LAW ENFORCEMENT AND CRIME PREVENTION

Police Protection

Communities within the planning area are served by the Los Angeles County Sheriff's Department, which is housed within the Department's Santa Clarita Valley Station located in Valencia. The Station's service area covers 656 square miles, including both City and County areas and portions of the Angeles National Forest. The Sheriff's Department oversees general law and traffic enforcement within the City, while the California Highway Patrol (CHP) has jurisdiction over traffic on State highways and in unincorporated County areas. The location of law enforcement facilities is shown on Figure S-5.

The Santa Clarita Sheriff's Station was designed to house a staff of about 90 personnel, and space is insufficient to meet current staffing and future needs. In the year 2008, there were a total of 242 budgeted personnel housed at the station, including deputies, sergeants, and support staff. The Sheriff's Department also operates two storefront substations, one in Newhall and the other in Canyon Country. Storefront stations are staffed 8 to 12 hours per day, sometimes with civilian personnel. The Department provides helicopter air support, search and rescue coordination, and the Career Offenders Burglary Robbery (COBRA) unit, which handles juvenile and gang-related crimes. Special programs offered in conjunction with community members and other organizations include the Anti-Gang Task Force, Citizens' Option for Public Safety (COPS) grants, drug education, the Family Violence Task Force, gang education, graffiti abatement, local law enforcement block grants, and emergency response programs. The station also has an extensive off-road enforcement team that spends considerable time working complaint areas in the rural portions of both City and County jurisdictions.

The Sheriff's Department is planning for expansion of the main station, and is also planning to expand staffing levels to meet the needs of the Santa Clarita Valley's growing population. Although there is no adopted law enforcement staffing level standard, the Sheriff's Department strives to maintain one officer per 1,000 people, and this service level is being met within the Santa Clarita Valley.

Response times for law enforcement calls vary by time of day, number of officers on duty, traffic conditions, and call volume. Calls for service are classified as *Routine*, *Priority*, or *Emergent*. Routine calls, such as vandalism reports, do not require a priority response from field units. Priority incidents, such as domestic disturbances, require an immediate response but not a "code three" response. Emergent incidents, such as a traffic accident or shooting, require an automatic code three response. From 1990 to 1999, the total volume of calls for service increased by about 35 percent (from 35,031 to 47,470); however, response times for priority and emergent incident calls remained approximately the same.

For the purpose of compiling crime statistics, the term *Part I Crimes* is used to describe the most serious offenses, including homicide, rape, robbery, aggravated assault, burglary, larceny, theft, grand theft auto, and arson. According to annual reports compiled by the Sheriff's Department, the rate of Part 1 Crimes in the Santa Clarita Valley has remained fairly constant since year 2000. In 2006, the California Department of Justice ranked the City of Santa Clarita as the third safest city in California for cities with a population of 150,000 or more (following Irvine and Glendale). The Sheriff's Department and City credit proactive law enforcement and crime prevention programs with achieving this ranking.

In addition to providing law enforcement and response services, the Sheriff's Department uses community-oriented policing strategies to prevent crime, and engages citizens in crime prevention efforts through a number of programs. The Community Relations Unit at the Sheriff's Station oversees community-oriented policing programs, including Neighborhood Watch, Business Watch, vacation security, and other crime prevention programs. Sheriff's deputies hold regular meetings throughout the Santa Clarita Valley to educate the public on crime prevention and provide information about gangs, personal safety, vehicle security, and teen and parent survival. The Sheriff's Department also includes a Teen Resource page on its website listing information about substance abuse, suicide prevention, gang membership, sexual assault, pregnancy and birth control, and AIDS.

According to the Sheriff's Department, "the Neighborhood Watch Program is a working network of concerned and proactive citizens throughout the Valley. Meetings

are conducted in neighborhoods to establish an effective crime prevention plan. Each neighborhood in the program has developed relationships with each other and with Law Enforcement to protect them against crime." Through the Neighborhood Watch Training Program, the Sheriff's Department trains citizens on techniques to protect themselves and their properties from auto theft, identity theft, burglary, graffiti, and "senior scam protection."

In 2007, the Santa Clarita Valley Sheriff's Station and the City, in conjunction with the Santa Clarita Valley Chamber of Commerce, launched the first Business Watch program in the Santa Clarita Valley. This program provides information to business owners about strategies to enhance building security, ensure security for employees, prevent loss from theft and forgery, minimize the risk of identity theft, and other crime prevention techniques. The program provides training for both employers and employees on how to develop emergency procedures and prevent loss from crime.

The primary planning issue for the Sheriff's Department at this time is expansion of space, both at the main station and at additional substations, in order to meet existing and projected needs for law enforcement programs and services in the Santa Clarita Valley. In 2008, the Sheriff's Department adopted a funding program for capital facilities needed to meet the law enforcement needs of expected growth in the Santa Clarita Valley, through collection of a law enforcement impact fee. Both the City and the County collect the law enforcement fee on new development permits, to fund future facilities.

Detention Facilities

The Peter J. Pitchess Detention Center (Pitchess) in Castaic is the largest jail complex in the County, and serves the entire planning area, as well as other County areas. The jail consists of four facilities, but only three are currently operated. The North Facility is a maximum-security facility with a housing capacity of 1,556. The East Facility, the oldest operational jail in the County, has been renovated and houses a maximum capacity of 1,974 inmates. The North County Correctional Facility is a maximum security complex housing a maximum capacity of 3,928 inmates. This facility also includes vocational training programs in the areas of computer sign production, clothing manufacturing, and printing. As of 2007, Pitchess had a housing capacity of 7,500 inmates. The location of this facility is shown on Figure S-5.

In 2007, plans were developed to expand the barracks at Pitchess to house more than 1,000 female inmates. The County Board of Supervisors approved the $136.6 million expansion project to serve female inmates from throughout the County, in order to relieve overcrowding and improve safety and security. Construction is slated for 2008, and the project, which also includes construction of a new cogeneration power plant, was completed in 2009.

The Los Angeles County Probation Department provides secure detention for delinquent minors in juvenile halls, and control and rehabilitations programs in Camp Scott and Camp Scudder. Juvenile halls provide confinement to minors ranging in age from 8 to 18 who await adjudication and disposition of legal matters. Camps provide treatment, care, custody, and training for the rehabilitation of delinquent minors as wards of the juvenile court.

Crime Prevention Through Environmental Design

One of the ways in which land use planning can assist law enforcement and promote public safety is through incorporating crime prevention techniques into development site designs. This concept was promoted by the U. S. Department of Housing and Urban Development in its 1996 publication *Creating Defensible Space* by Oscar Newman.[2] Newman first published his theories about defensible space in 1972 and they were successfully adopted in many communities. The use of environmental design features to prevent crime has been called CPTED (Crime Prevention Through Environmental Design). In 1995 the City of Los Angeles issued CPTED Design Guidelines based on the premise that "proper design and effective use of the built environment can lead to a reduction in the incidents and fear of crime, reduction in calls for police services, and to an increase in the quality of life."[3] The County uses similar guidelines for public housing facilities administered by the Community Development Commission.

2 Newman, Oscar. *Creating Defensible Space.* U.S. Department of Housing and Urban Development, Office of Policy Development and Research. April, 1996.
3 *Design Out Drime: Crime Prevention Through Environmental Design Guidelines*, City of Los Angeles, 1995.

According to Newman, "Defensible space operates by subdividing large portions of public spaces and assigning them to individuals and small groups to use and control as their own private areas…All defensible space programs have a common purpose: they restructure the physical layout of communities to allow residents to control the areas around their homes. This includes the streets and grounds outside their buildings and the lobbies and corridors within them."[4] In his studies of St. Louis and other cities, Newman found that when residents had some control over public space around their homes they maintained these areas in a clean, safe condition. However, when common areas were open to many dwelling units and to the public, with no oversight or supervision by residents, these areas were subject to vandalism, dumping, and crime. Newman found that crime was also influenced by building height and design. High-rise residential buildings (over four stories) were found to be unsuitable for families with children, although they could be effective for senior communities if properly designed. Within public housing for families, he found that project size and the number of dwelling units sharing common entries correlated to crime rates. Large building size also affected residents' fear of crime, and resulted in high rates of residential turnover and vacancy.

Defensible space is an important consideration in residential development, particularly in high-density, multiple family residential areas. Other CPTED principles include the following:

- **Surveillance.** Areas that are accessible to the public but are not readily visible, such as dead-end alleys and drive aisles, often attract crime. Surveillance is a design concept directed at keeping intruders under observation by locating windows overlooking common areas.

- **Access control.** Controlling access to a site protects users from crime by creating a perception of risk for potential offenders.

- **Territorial reinforcement.** The physical design of a site can contribute to a sense of territorial "ownership" by site users. Areas that are not clearly under the supervision of adjacent buildings are subject to trespass and illicit activities.

CPTED design strategies include provision of adequate lighting; grouping common activity areas together to promote surveillance; providing clear travel paths with avoidance of dead-end pathways or drive aisles; provision of security devices such as fencing and cameras; clearly delineating public and private spaces; avoidance of "no man's land" areas on the site; providing secure, lighted storage areas; avoidance of long corridors shared by all and owned by none; encouraging neighborhood watch programs; use of landscaping to avoid graffiti; and elimination of hiding places within landscaped areas.

Although neither the City nor County have formally adopted CPTED guidelines, safety issues are addressed through the development review process in both agencies. Policies have been added to the Safety Element to promote crime prevention through site design in future development decisions.

X. TERRORISM

Terrorism is defined as the use of fear for intimidation. Terrorism is a crime where the threat of violence is often as effective as the commission of the violent act itself. Terrorism affects us through fear, physical injuries, economic losses, psychological trauma, and erosion of faith in government. Terrorism is a strategy used by individuals or groups to achieve their political goals.

Terrorists espouse a wide range of causes. They can be for or against almost any issue, religious belief, political position, or group of people of one national origin or another. Because of the tremendous variety of causes supported by terrorists and the wide variety of potential targets, there is no place that is truly safe from terrorism. Throughout California there is a nearly limitless number of potential targets, depending on the perspective of the terrorist. Some of these targets include: abortion clinics, religious facilities, government offices, public places (such as shopping centers), schools, power plants, refineries, utility infrastructure, water storage facilities, dams, private homes, prominent individuals, financial institutions and other businesses.

In March 2002, Presidential Directive 3 established a Homeland Security Advisory System to provide a comprehensive and effective means to disseminate information regarding the risk of terrorist acts to Federal, State, and local authorities and citizens. The system provides warnings in the

4 Newman, page 2.

form of a set of graduated "Threat Conditions" that would increase as the risk of the threat increases. This system creates a common vocabulary, context, and structure for an ongoing discussion about the nature of the threats that confront the homeland and the appropriate measures that should be taken in response. It seeks to inform and facilitate decisions appropriate to different levels of government and to private citizens at home and at work.

The Homeland Security Advisory System (HSAS) is binding at the Executive Branch level and is suggested, although voluntary, at other levels of government and within the private sector. There are five Threat Conditions, each identified by a description and corresponding color. Higher Threat Conditions indicate a greater risk of a terrorist attack. Risk includes both the probability of an attack occurring and the potential gravity. Threat Conditions are assigned by the Attorney General in consultation with the Secretary of Homeland Security. Threat Conditions may be assigned for the entire nation, or they may be set for a particular geographic area or industrial sector. Assigned Threat Conditions are reviewed at regular intervals to determine whether adjustments are warranted. The assignment of a Threat Condition will prompt the implementation of an appropriate set of Protective Measures. Protective Measures are the specific steps an organization will take to reduce its vulnerability or increase its ability to respond during a heightened alert.

Treat Condition Levels and corresponding Protective Measures are listed below:

Low Condition (Green)
This condition is declared when there is a low risk of terrorist attack. Emergency Operations Center activation level is inactive.

- Ensure staff receives proper training on Homeland Security Advisory System, and protective measures
- Regularly assess facilities for vulnerabilities and take measures to reduce them
- Refine and exercise as appropriate preplanned protective measures

Guarded Condition (Blue)
This condition is declared when there is a general risk of terrorist attacks. Emergency Operations Center activation level is inactive.

- Review and update emergency response procedures
- Provide the public with any information that would strengthen its ability to act appropriately
- Check communications with designated emergency response or command locations

Elevated Condition (Yellow)
An elevated condition is declared when there is a significant risk or terrorist attacks. This condition may or may not activate the Emergency Operations Center depending on a regional/local assessment.

- Increase surveillance of critical locations whose loss will have an adverse effect on the City's and County's ability to provide service to the public and/or accomplish its primary mission
- Coordinate emergency plans as appropriate with nearby jurisdictions
- Assess preplanned protective measures within the context of the current threat
- Keep staff aware of what procedures are taking place

High Condition (Orange)
A high condition is declared when there is a high risk of terrorist attacks. This condition may or may not activate the Emergency Operations Center depending on local/regional assessment.

- Take additional precautions at public events
- Review building evacuation plans
- Review mail handling/package delivery procedures
- Review information technology system security issues including remote capabilities
- Review emergency reporting procedures

- Be prepared to have someone monitor the Emergency Management Information System (EMIS) if directed
- Restrict public access to buildings if threat assessment is credible regionally/locally
- Coordinate necessary security effort with law enforcements agencies, including the Los Angeles County Sheriff and California Highway Patrol
- Prepared to execute contingency procedures
- Test staff notification procedures/systems

Severe Condition (Red)

A severe condition reflects a severe risk of terrorist attacks. Emergency Operations Center activation may activate from monitoring to full activation; this will depend on the local/regional assessment.

- Stand ready to increase or redirect personnel to address critical emergency needs
- Monitor, redirect, or constrain transportation systems
- Consider closing public facilities based on Terrorism Early Warning Group threat guidance
- Consider canceling large scale public events if their security cannot be enhanced, based on Terrorism Early Warning Group threat guidance
- Activate Emergency Operations Center, level of activation determined by threat assessment from Terrorism Early Warning Group threat guidance
- Direct staff to monitor EMIS
- Ensure all staff are kept informed

Bioterrorism Planning

Bioterrorism is the threatened or intentional release of biological agents (virus, bacteria, or air toxins) for the purpose of influencing the conduct of government or intimidating or coercing a civilian population. These agents can be released by way of air (as aerosols), food, water, or insects. Since the terrorist attacks of September 1, 2001, and the subsequent anthrax incidents, there has been a great concern about bioterrorism in the United States. With this concern, there is growing recognition that the unique characteristics of a bioterrorist attack, in contrast to a conventional attack, would require additional response preparation and coordination.

An integral part of bioterrorism response is mass prophylaxis. Mass prophylaxis is the capability to protect the health of the population through administration of critical intervention (e.g., antibiotics, vaccinations, antivirals) to mitigate the development of disease among those who are exposed or potentially exposed to public health threats.

Every public health jurisdiction in the country is charged with the responsibility to develop and maintain the capability to carry out first response and ongoing mass antibiotic dispensing and vaccination campaigns tailored to its local population.

There are two conceptual approaches to mass prophylaxis: "push" and "pull" approach; one is utilizing the U.S. Postal Service to bring medications directly to individuals or homes in an affected community. The "pull" approach requires that individuals travel to centers where they can receive medications or vaccinations. Points of Dispensing (POD) are an example of the "pull" approach.

In preparation for a unique response to a bioterrorism attack, the City of Santa Clarita, the Los Angeles County Department of Health, and the College of the Canyons (COC) have collaborated to coordinate and respond with a drive-thru POD models to assist those potentially exposed to a biological agent. Utilizing the drive thru POD, the City, COC and Department of Health Services have tested the model by operating an influenza vaccination clinic. Since 2006, this yearly exercise serves as an opportunity to test the POD model while providing a vital real-world service to the general population.

COC is a designated POD site because it has a school of nursing and an Emergency Medical Technician (EMT) program that support the medical operations component of the POD. In addition, COC's site has the capacity to handle the vehicle traffic flow. The Community Emergency Response Training (CERT) team, volunteers, and City staff

from emergency management, recreation and community services, traffic engineering, and public works also support the POD operations.

Emergency Medical Services

Los Angeles County Department of Health Emergency Services Agency developed a Disaster Resource Center (DRC) program to address issues related to healthcare surge capacity. There are 13 DRCs geographically located in Los Angeles County. In the Santa Clarita Valley, Henry Mayo Newhall Memorial Hospital (HMNMH) is one of the designated DRCs. As the designated DRC site, HMNMH is the lead for 11 other hospitals.

DRCs are hospitals that address surge capacity in a disaster through procurement, storage, maintenance and security of extra medical equipment, supplies and pharmaceuticals. Each DRC works with hospitals, clinics and other healthcare providers in their geographic location to plan, train, exercise and facilitate regional disaster preparedness. Each DRC also has capability to mobilize storage trailers outfitted with equipment and supplies to set up a mobile triage area with inflatable surge tents.

HMNMH has a medical cache and a pharmaceutical cache, ventilators, patient monitors, communication equipment, security equipment for crowd control, evacuation equipment and staff to manage the program. HMNMH also has the capability to expand and provide care with surgery beds, isolation areas, pharmaceuticals, personal protective equipment for chemical, biological, radiological, nuclear and explosive events, and decontamination facilities. In addition, HMNMH has a certified trained decontamination team, and staff trained in psychological first aid and trauma burn care.

When a disaster strikes and it is beyond the capability of the local jurisdictions, the affected area would contact Los Angeles County Medical Alert Center (MAC). MAC then would survey other DRC's for items requested.

XI. ACCIDENT PREVENTION

Safety issues related to accident prevention overlap some of the other areas addressed in the Area Plan. As with crime prevention, design features can be used to forestall accidents from trip-and-fall hazards on development sites through provision of adequate lighting, clearly delineated pathways, well-marked building entrances, and appropriate selection and maintenance of landscape material. Accidental injuries on trails and bikeways can be prevented through planning and design as well, including illumination, signage, traffic markings, adequate trail width and surface material, removal of hazardous landscaping and other obstructions, and safe crossings at intersections. Accidents involving vehicles, pedestrians and bicyclists within the public right-of-way can be minimized through installation of traffic control devices and implementation of other policies contained in the Circulation Element. Through the design review process, the layout of parking lots and driveways on new development projects is evaluated for potential conflicts between vehicles, delivery trucks, and pedestrians, in order to avoid potentially hazardous areas on the site. Both the City and County continually monitor traffic accident data in order to determine if additional traffic control devices are needed to maintain public safety, and traffic improvements are installed where warranted.

XII. SUMMARY OF SAFETY PLANNING NEEDS IN THE SANTA CLARITA VALLEY

Based on the existing conditions and issues outlined in the background sections of the Safety Element, safety planning needs for the Santa Clarita Valley are summarized below. Policies and objectives in the following section have been developed to address these needs.

1. Reduce risks to public safety and property from seismic activity and related hazards, through identification of seismic hazard zones and requirements for seismic design.

2. Identify and mitigate hazards from soil instability, including landslides and subsidence, through identification of hazard areas and requirements for design mitigations to address unstable soils.

3. Plan for and ensure construction and maintenance of adequate flood control facilities to protect existing and future residents from flood hazards.

4. Identify risks from, and plan for emergency response, in the event of dam failure from the Castaic or Bouquet Canyon Reservoirs.

5. Address drainage improvement needs to mitigate localized flooding problems.

6. Require Low Impact Development techniques in planning and construction, to reduce stormwater runoff, promote infiltration, and reduce the need for costly flood control infrastructure.

7. Control and regulate new development and construction in identified floodplains by applying appropriate development standards, and implement federal floodplain management policies to protect public safety and property.

8. Promote planning for and coordination with the Los Angeles County Fire Department to construct new fire stations as needed throughout the Santa Clarita Valley.

9. Adopt and implement policies for fire-safe development in urban/wildland interface areas.

10. Require adequate emergency access, street identification, and address numbers in all development, to ensure timely response to emergencies.

11. Identify, sign, maintain, and provide public information regarding evacuation routes through and out of the Santa Clarita Valley, in the event of a major disaster.

12. Continue coordinating with other agencies to provide information and training to residents about maintaining adequate firebreaks in wildland interface areas.

13. Ensure provision of adequate fire flow for new development.

14. Continue providing tree maintenance services for trees on public property as part of the urban forestry management program, to limit damage during windstorms from falling limbs.

15. Protect residents from the harmful effects of hazardous materials through appropriate zoning and development standards, and coordinate with other agencies as needed on clean-up efforts for contaminated areas.

16. Continue to prepare, update and implement emergency preparedness procedures and response plans.

17. Continue to provide training to public officials and residents on emergency preparedness and response.

18. Cooperate with the Los Angeles County Sheriff's Department to expand facility space in the Santa Clarita Valley to meet current and projected law enforcement needs.

19. Promote crime prevention through public education and support of Neighborhood Watch, Business Watch, and CPTED (Crime Prevention Through Environmental Design) programs.

20. Promote measures to prevent accidental injury by ensuring adequate lighting, addressing trip and fall hazards, analyzing traffic accident data and providing traffic safety improvements where needed, promoting walkable neighborhoods, ensuring safe trails, and other similar programs.

21. Cooperate with appropriate agencies and the public to create a plan to prepare for and respond to potential terrorist activities.

XII. GOALS, OBJECTIVES, AND POLICIES

The goals, objectives, and policies which apply to safety are:

Goal S-1: Geologic Hazards

Protection of public safety and property from hazardous geological conditions, including seismic rupture and ground shaking, soil instability, and related hazards.

Objective S-1.1

Identify and map areas in the Santa Clarita Valley that are susceptible to geological hazards, for use by the public and decision makers in considering development plans.

- **Policy S-1.1.1:** Maintain maps of potentially active faults and fault zones, based on information available from the Alquist-Priolo Special Studies Zone maps, United States Geological Survey, State Board of Geologists, State Mining and Geology Board, and other appropriate sources.
- **Policy S-1.1.2:** Maintain maps of areas subject to liquefaction and landslides, based on data provided by the State and other appropriate sources.
- **Policy S-1.1.3:** In the event of significant incidents of soil subsidence, compile data and prepare maps showing areas with potential for this hazard..
- **Policy S-1.1.4:** Maintain maps showing potential inundation areas from dam failure.

Objective S-1.2

Regulate new development in areas subject to geological hazards to reduce risks to the public from seismic events or geological instability.

- **Policy S-1.2.1:** Implement requirements of the Alquist-Priolo Earthquake Fault Zoning Act.
- **Policy S-1.2.2:** Restrict the land use type and intensity of development in areas subject to fault rupture, landslides, or liquefaction, in order to limit exposure of people to seismic hazards.
- **Policy S-1.2.3:** Require soils and geotechnical reports for new construction in areas with potential hazards from faulting, landslides, liquefaction, or subsidence, and incorporate recommendations from these studies into the site design as appropriate.
- **Policy S-1.2.4:** Enforce seismic design and building techniques in the County Building Code.
- **Policy S-1.2.5:** Consider the potential for inundation from failure of the Castaic or Bouquet Canyon Reservoir dams when reviewing development proposals within potential inundation areas.

Objective S-1.3

Reduce risk of damage in developed areas from seismic activity.

- **Policy S-1.3.1:** Identify any remaining unreinforced masonry buildings or other unstable structures, and require remediation or seismic retrofitting as needed to meet seismic safety requirements.
- **Policy S-1.3.2:** Increase earthquake safety in all public facilities through bracing of shelves, cabinets, equipment and other measures as deemed appropriate.
- **Policy S-1.3.3:** Provide informational materials to the public on how to make their homes and businesses earthquake safe.
- **Policy S-1.3.4:** Cooperate with other agencies as needed to ensure regular inspections of public infrastructure such as bridges, dams, and other critical facilities, and require repairs to these structures as needed to prevent failure in the event of seismic activity.

Goal S-2: Flood Hazards

Protection of public safety and property from unreasonable risks due to flooding.

Objective S-2.1

Plan for flood protection as part of a multi-objective watershed management approach for the Santa Clara River and its tributaries.

- **Policy S-2.1.1:** On the Land Use Map, designate appropriate areas within the floodplain as open space for multi-use purposes, including flood control, habitat preservation, and recreational open space. Development in the floodplain will require mitigation as deemed necessary by the reviewing authority.
- **Policy S-2.1.2:** Promote Low Impact Development standards on development sites, including but not limited to minimizing impervious surface area and promoting infiltration, in order to reduce the flow and velocity of stormwater runoff throughout the watershed.
- **Policy S-2.1.3:** Promote the use of vegetated drainage courses and soft-bottom channels for flood control facilities to the extent feasible, in order to achieve water quality and habitat objectives in addition to flood control.
- **Policy S-2.1.4:** Cooperate with other agencies, as appropriate, regarding the related issues of flood control, watershed management, water quality, and habitat protection.
- **Policy S-2.1.5:** Promote the joint use of flood control facilities with other beneficial uses where feasible, such as by incorporating detention basins into parks and extending trails through floodplains.

Objective S-2.2

Identify areas in the Santa Clarita Valley that are subject to inundation from flooding.

- **Policy S-2.2.1:** Prepare and maintain maps of floodways and floodplains based on information from the Federal Emergency Management Agency (FEMA) and other appropriate sources in order to qualify for FEMA's National Flood Insurance Program.
- **Policy S-2.2.2:** Identify areas subject to localized short-term flooding due to drainage deficiencies.

Objective S-2.3

Plan for and construct adequate drainage and flood control infrastructure to ensure flood protection.

- **Policy S-2.3.1:** Implement drainage master plans designed to handle storm flows from the 100-year storm.
- **Policy S-2.3.2:** Include funding for drainage and flood control improvements in the annual County Budget.

Objective S-2.4

Implement flood safety measures in new development.

- **Policy S-2.4.1:** Require that new development comply with FEMA floodplain management requirements.
- **Policy S-2.4.2:** On the Land Use Map, restrict the type and intensity of land use in flood-prone areas, or require flood-proof construction, as deemed appropriate.

Objective S-2.5

Limit risks to existing developed areas from flooding.

- **Policy S-2.5.1:** Address drainage problems that cause flooding on prominent transportation corridors by working with multi-jurisdictional agencies and stakeholders to construct needed drainage improvements.
- **Policy S-2.5.2:** Provide for the maintenance of drainage structures and flood control facilities to avoid system malfunctions and overflows.

Goal S-3: Fire Hazards

Protection of public safety and property from fires.

Objective S-3.1

Provide adequate fire protection infrastructure to maintain acceptable service levels as established by the Los Angeles County Fire Department.

- **Policy S-3.1.1:** Coordinate on planning for new fire stations to meet current and projected needs.

- **Policy S-3.1.2:** Program adequate funding for capital fire protection costs and explore all feasible funding options to meet facility needs.

- **Policy S-3.1.3:** Require adequate fire flow as a condition of approval for all new development, which may include installation of additional reservoir capacity and/or distribution facilities.

Objective S-3.2

Provide for the specialized needs of fire protection services in both urban and wildland interface areas.

- **Policy S-3.2.1:** Identify areas of the Santa Clarita Valley that are prone to wildland fire hazards and address these areas in fire safety plans.

- **Policy S-S 3.2.2:** Enforce standards for maintaining defensible space around structures through clearing of dry brush and vegetation.

- **Policy S- 3.2.3:** Establish landscape guidelines for fire-prone areas with recommended plant materials, and provide this information to builders and members of the public.

- **Policy S -3.2.4:** Require sprinkler systems, fire resistant building materials, and other construction measures deemed necessary to prevent loss of life and property from wildland fires.

- **Policy S- 3.2.5:** Ensure adequate secondary and emergency access for fire apparatus, which includes minimum requirements for road width, surface material, grade, and staging areas.

- **Policy S-3.2.6:** For areas adjacent to the National Forest, cooperate with the United States Forest Service regarding land use and development issues.

- **Policy S-3.2.7:** Continue to provide information and training to the public on fire safety in wildland interface areas.

Objective S-3.3

Maintain acceptable emergency response times throughout the planning area.

- **Policy S-3.3.1:** Plan for fire response times of five minutes in urban areas, eight minutes in suburban areas, and 12 minutes in rural areas.

- **Policy S-3.3.2:** Require the installation and maintenance of street name signs on all new development.

- **Policy S-3.3.3:** Require the posting of address numbers on all homes and businesses that are clearly visible from adjacent streets.

Goal S-4: Hazardous Materials

Protection of public safety and property from hazardous materials.

Objective S-4.1

Identify sites that are contaminated with chemicals and other hazardous materials, and promote clean-up efforts.

- **Policy S-4.1.1:** Continue to support clean-up efforts and re-use plans for the Whittaker-Bermite property in the City of Santa Clarita.

- **Policy S-4.1.2:** Coordinate with other agencies to address contamination of soil and groundwater from hazardous materials on various sites, and require that contamination be cleaned up to the satisfaction of the County and other responsible agencies prior to issuance of any permits for new development.

Objective S-4.2

Cooperate with other agencies to ensure proper handling, storage, and disposal of hazardous materials.

- **Policy S-4.2.1:** On the Land Use Map, restrict the areas in which activities that use or generate large amounts of hazardous materials may locate, to minimize impacts to residents and other sensitive receptors in the event of a hazardous materials incident.

- **Policy S-4.2.2:** Through the development review process, ensure that any new development proposed in the vicinity of a use that stores or generates large amounts of hazardous materials provides adequate design features, setbacks, and buffers to mitigate impacts to sensitive receptors in the event of a hazardous materials incident.

- **Policy S-4.2.3:** Require businesses to verify procedures for storage, use, and disposal of hazardous materials.

- **Policy S-4.2.4:** Cooperate with other agencies to hold regular events to promote safe disposal of small amounts of household hazardous waste, including e-waste, by Santa Clarita Valley residents.

Goal S-5: Law Enforcement

Protection of public safety through the provision of law enforcement services and crime prevention strategies.

Objective S-5.1

Cooperate with the Los Angeles County Sheriff's Department's plans for expansion of facility space to meet current and future law enforcement needs in the Santa Clarita Valley.

- **Policy S-5.1.1:** Participate in a multi-jurisdictional task force to evaluate alternatives for combining public safety services with administrative services within a centralized government complex serving the entire Santa Clarita Valley.

- **Policy S-5.1.2:** Provide staff assistance to assess future law enforcement needs, and work together with the City of Santa Clarita, the Sheriff's Department, and other partners to develop and implement plans for meeting these needs.

- **Policy S-5.1.3:** Cooperate on implementation of funding mechanisms for law enforcement services.

Objective S-5.2

Cooperate with the Sheriff's Department on crime prevention programs to serve residents and businesses.

- **Policy S-5.2.1:** Promote and participate in the Business Watch program to assist business owners in developing and implementing crime prevention strategies.

- **Policy S-5.2.2:** Promote and support Neighborhood Watch programs to assist residents in establishing neighborhood crime prevention techniques.

- **Policy S-5.2.3:** Provide code enforcement services to maintain minimum health and safety standards and as a deterrent to crime.

Goal S-6: Accidents

Reduced risk to public safety and property damage from accidental occurrences.

Objective S-6.1

Reduce damage from high winds through effective urban forest management.

- **Policy S-6.1.1:** Continue tree trimming and maintenance programs for trees in the right-of-way and on public property, to limit damage from falling limbs.

- **Policy S-6.1.2:** Promote the planting of tree types appropriate to the local climate, to avoid breakage by brittle, non-native trees.

Objective S-6.2

Increase public safety through the design of public facilities and urban spaces.

- **Policy S-6.2.1:** In reviewing development plans, ensure that lighting levels are adequate to provide safe and secure nighttime use of each site, while limiting excessive or unnecessary light and glare.

- **Policy S-6.2.2:** In reviewing development plans, consider Crime Prevention Through Environmental Design (CPTED) principles to increase public safety through establishing defensible space, clearly delineated public and private areas, and effective surveillance of common areas.

- **Policy S-6.2.3:** In reviewing development plans, ensure that pedestrian pathways, stairs, steps and ramps are designed to provide clear and unimpeded passage in order to avoid trip hazards and conflicts with vehicles.

- **Policy S-6.2.4:** Continue to monitor traffic accident data in order to evaluate and address any traffic control needs to enhance public safety.

- **Policy S-6.2.5:** Use traffic calming devices and reduced street widths to slow traffic speeds and reduce accidents, where deemed appropriate.

Objective S-6.3

Provide for the safety of disadvantaged persons.

- **Policy S-6.3.1:** In cooperation with other agencies, ensure adequate shelter for homeless persons to limit their exposure to accidental injury and illness.

- **Policy S-6.3.2:** Implement the provisions of the Americans with Disabilities Act to ensure safe travel paths and accommodations for persons with disabilities.

Objective S-6.4

Minimize damage resulting from aircraft accidents near the Agua Dulce Airpark.

- **Policy S-6.4.1:** Require all new development in the vicinity of the Agua Dulce Airpark to comply with the Airport Land Use Plan and applicable Federal Aviation Administration (FAA) regulations.

Goal S-7: Emergency Planning

Protection of the public through planning for disaster response and recovery, in order to minimize damage from emergency incidents or terrorist activities.

Objective S-7.1

Maintain and implement plans and procedures to prepare for disaster response and terrorist activities.

- **Policy S-7.1.1:** Regularly update emergency preparedness and response plans that are consistent with State plans.

- **Policy S-7.1.2:** Continue to provide regular training to public officials and the public on emergency procedures.

- **Policy S-7.1.3:** Ensure that evacuation routes are clearly posted throughout the Santa Clarita Valley.

- **Policy S-7.1.4:** Strengthen communication and cooperation between agencies, citizens and non-profit groups to plan for disaster response.

Objective S-7.2

Plan for ways to minimize economic and social disruption, and expedite recovery from emergency incidents.

- **Policy S-7.2.1:** In cooperation with other agencies, plan for temporary shelters for residents displaced by disasters and emergency incidents.

- **Policy S-7.2.2:** Plan for expedited plan check, permitting, and inspection programs to aid recovery efforts involving the rebuilding of damaged structures.

- **Policy S-7.2.3:** Ensure that proper record-keeping procedures are in place for purposes of obtaining reimbursement from State and Federal agencies.

- **Policy S-7.2.4:** Purchase disaster and recovery supplies locally to assist local businesses in their recovery efforts.

XIV. IMPLEMENTATION OF THE SAFETY ELEMENT

The County of Los Angeles will implement the goals, objectives and policies of the Safety Element of the Santa Clarita Valley Area Plan through the following actions:

- **Action 1:** On the Land Use Map, designate areas that are subject to potential damage from natural or man-made hazards for appropriate land uses, such as open space or low-density residential, in order to reduce exposure of persons and property to hazardous conditions.

- **Action 2:** Revise the County Zoning Ordinance and Map, including Community Standards Districts, as deemed necessary to ensure consistency with the goals and policies of the Safety Element.

- **Action 3:** Through the review process for new discretionary development applications, require consistency with the goals and policies of the Safety Element, including requirements to mitigate hazards from seismic, geotechnical, soils, flooding, fire, crime, or other unsafe conditions as appropriate.

- **Action 4:** Review any proposed Area Plan Amendments to ensure compliance with the goals and policies of the Safety Element, and coordinate such amendments with the City of Santa Clarita as appropriate.

- **Action 5:** Ensure compliance with seismic safety standards through plan review and inspection procedures on all new construction, pursuant to the Los Angeles County Code.

- **Action 6:** Consider the goals and policies of the Safety Element when updating master plans for flood control, highways, and other County infrastructure and facilities, and include projects in Capital Facilities Plans as appropriate.

- **Action 7:** Periodically review the Safety Element and other elements of the Santa Clarita Valley Area Plan. Update these documents in cooperation with the City of Santa Clarita as deemed necessary to reflect changing conditions, needs, and policies.

- **Action 8:** Through the Fire Department, work cooperatively with the City of Santa Clarita to ensure provision of fire protection services and facilities throughout the Santa Clarita Valley, with adequate funding for facilities, operations and maintenance.

- **Action 9:** Through the Sheriff's Department, work cooperatively with the City of Santa Clarita to ensure provision of law enforcement services throughout the Santa Clarita Valley, with adequate funding for facilities, operations and maintenance.

- **Action 10:** Continue cooperating with the City of Santa Clarita and other appropriate entities on control of hazardous substances, addressing the safe use, storage, and disposal of these substances as appropriate.

- **Action 11:** Implement policies and guidelines for hillside development within the Santa Clarita Valley that are compatible with City of Santa Clarita policies and guidelines, to protect the public from landslides and other geotechnical hazards.

- **Action 12:** Implement policies and guidelines for flood control and drainage improvements within the Santa Clarita Valley that are compatible with City of Santa Clarita policies and guidleines, to protect the public from regional and local flooding (including dam inundation).

- **Action 13:** Implement policies for wildland fire safety that are compatible with City of Santa Clarita policies, including but not limited to policies related to fuel reduction and defensible space, building materials and design, emergency access and evacuation routes, and fire flow requirements, to protect the public from wildfires.

- **Action 14:** Continue to cooperate with the City of Santa Clarita and other agencies as needed to coordinate disaster response plans, and respond to emergencies throughout the Santa Clarita Valley.

THIS PAGE INTENTIONALLY LEFT BLANK