



CHAPTER

6

SAFETY

AND NOISE

The Safety and Noise chapter contains information on the following topics:

- **Hazards and disaster preparedness and response** — information on existing natural and manmade hazards and policies and plans to mitigate these hazards and prepare for disasters.
- **Police, fire and emergency services** — information on police, fire and emergency services and policies and plans to continue to improve these services.
- **Noise** — information on existing and projected noise conditions with policies and programs to maintain or reduce noise from transportation, land use operations and single-event noise.



HAZARDS AND DISASTER PREPAREDNESS AND RESPONSE

GOAL SN-1 ACCEPTABLE LEVELS OF RISK FOR NATURAL AND HUMAN-CAUSED HAZARDS

ENSURE THAT NATURAL AND HUMAN-CAUSED HAZARDS ARE RECOGNIZED AND CONSIDERED IN DECISIONS AFFECTING THE COMMUNITY AND THAT LAND USES REFLECT ACCEPTABLE LEVELS OF RISK BASED ON IDENTIFIED HAZARDS AND OCCUPANCY *(Previously Seismic Safety and Safety Mission A / Adopted In 2008)*

Consideration of natural and manmade hazards in land use decisions is a critical component of the City’s planning process. By carefully balancing the community’s need for safety with other needs such as housing, employment and transportation, the City can ensure that the knowledge of existing safety hazards are reasonably considered in all planning and development review processes.

Among the hazards that should be considered are seismic, flood, fire, hazardous materials and aviation hazards. An important consideration is also the protection of vital City lifelines from hazards. Hazards and lifelines are discussed in more detail below.

POLICY SN-1.1 EVALUATE AND CONSIDER EXISTING AND POTENTIAL HAZARDS IN DEVELOPING LAND USE POLICIES. MAKE LAND USE DECISIONS BASED ON AN AWARENESS OF THE HAZARDS AND POTENTIAL HAZARDS FOR THE SPECIFIC PARCEL OF LAND. *(Previously Safety Policy A1)*

Seismic Hazards

Damaging earthquakes are infrequent; however, they pose the most significant threat in relation to the destruction they may cause to the City.

Sunnyvale is located between two active earthquake faults. See Figure 6-1, San Francisco Bay Region Earthquake Probability Map. Scientists have identified four fault segments on which they believe large earthquakes are most likely to occur. The USGS estimated that there is a 63 percent chance for at least one earthquake of magnitude 6.7 or larger to strike in the San Francisco Bay Area before the year 2037. An earthquake of this size could strike at any time.

The City has taken significant steps to reduce the risk of seismic hazards. To improve the seismic safety of buildings in the less stable soil areas of the City, geotechnical reports are now required for all developments in the City. New Building Code requirements and the continuing modernization of the City have greatly reduced the number of

structures most vulnerable to seismic events. The City actively participates in the State of California Seismic Hazards Mapping Program. In addition, the seismic safety of City buildings has received considerable attention. Many City buildings have been designated as “Essential Services Buildings.” Seismic retrofitting of the Community Center, City Hall Annex, Library, Corporation yard (stores section) has been completed, along with all six fire stations.

Other hazards of a seismic event include flooding and fire hazards. A local major earthquake could cause the failure of parts of the levee system in the San Francisco Bay and such a failure could lead to flooding in the northern parts of the City that are below sea level. Fire in the aftermath of an earthquake could also pose serious problems in Sunnyvale. Major variables that could intensify the situation include water system damage, multiple fires and isolation of some areas due to roadway over crossing failures. The following sections discuss flood hazards and fire hazards and mitigations to these effects.

See *General Plan*. In *Sunnyvale.com* for Sunnyvale’s Local Hazard Mitigation Plan for more information about likely hazards and mitigations.

Flood Hazards

Santa Clara Valley is classified as an active flood plain that has been severely altered by human activity. Approximately 1,800 acres of Sunnyvale has been designated by the Federal Emergency Management Agency (FEMA) as Special Flood Hazard Areas (SFHA). The SFHA show areas in Sunnyvale susceptible to flooding (See Figure 6-2, FEMA Flood Hazard Map). In Sunnyvale, SFHA’s are generally located in the northeast portion of the City. Flood events are generally caused by a creek topping its banks, clogged catch basins or storm drains.

The City has been a participant in the FEMA Community Rating System (CRS) since 1998. In May 2003, the City of Sunnyvale was granted a Class 7 community rating by FEMA, enabling Sunnyvale Citizens and businesses to obtain discounts on their flood insurance premiums. This rating is granted based on the community’s participation in public information activities, mapping and regulating activities and flood preparedness and damage reduction activities. Sunnyvale’s program addresses flood hazards with a combination of infrastructure projects and building code requirements.

A 1 percent flood, also known as a 100 year flood, has a 1 percent probability to being equaled or exceeded in any given year.

Current Flood Control Infrastructure

Creeks and Flood Control Channels — The Santa Clara Valley Water District (SCVWD) maintains Calabazas Creek, Stevens Creek and the Sunnyvale East and West flood control channels. These channels, coupled with the City’s storm drains take the majority of surface run-off to the San Francisco Bay. The East and West Channels and Calabazas Creek were built to contain a 1percent annual chance flood.

See the Environmental Management Chapter for more information on the storm drain system.

Storm Drain System — The City of Sunnyvale owns and operates approximately 3,200 storm drain inlets, two pump stations and 150 miles of storm drains. Surface runoff from paved areas enters the storm drain system through storm drain inlets, which discharge directly to the Bay. The two pump stations collect runoff from low lying urban areas and discharge the runoff to creeks and sloughs. Since these pump stations are at a higher elevation, gravity flow conveys the stormwater to the Bay.

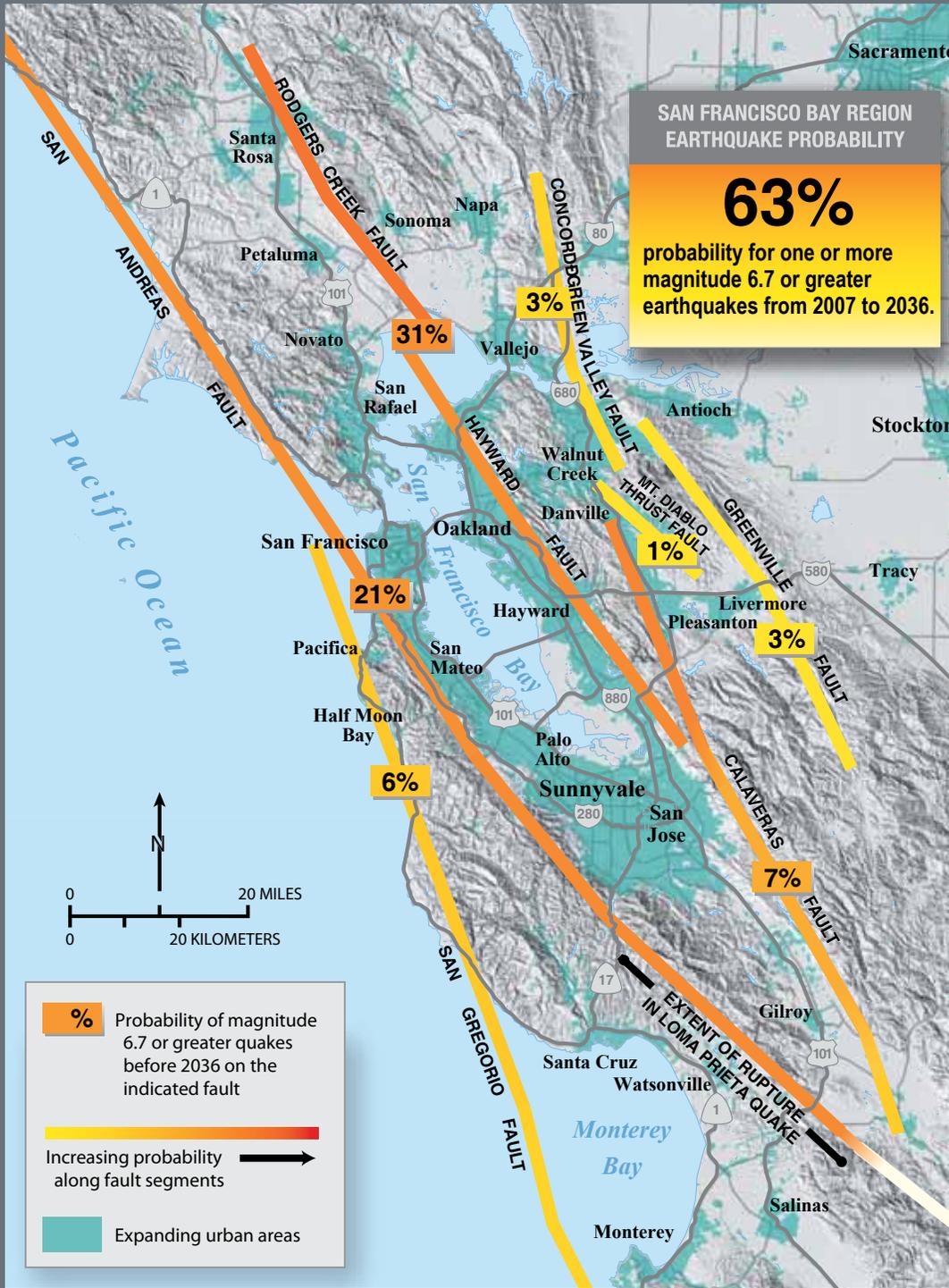


Figure 6-1. San Francisco Bay Region Earthquake Probability

Source: United States Geographic Service (USGS), 2008

Levees and Dikes — Dike and levee systems have been constructed along the San Francisco Bay, originally to form and protect the salt evaporators and concentrators that ring the southernmost arm of the bay, not as a barrier to prevent flooding a populated area. The dikes are constructed of weak, locally-derived Bay materials that are constantly undergoing settlement, erosion by the elements and damage by burrowing animals.

Without the present system of dikes and levees, a part of Sunnyvale normally would be subjected to flooding by tides. It assumed that this would still be the case if these dikes were to be topped breached or failed. To allow use of land that was subject to tidal flooding and subsidence, the levee systems have been extended and strengthened to protect these low-lying lands.

Dams — Stevens Creek Dam, located on Stevens Creek 2.5 miles south of the City of Sunnyvale corporate limits, is an earthen dam approximately 135 feet in height. Constructed in 1936, the dam's principal purpose is water supply. The waters impounded in the reservoir are released at a rate such that the waters will percolate into the ground, thus recharging the ground water aquifer.

Building Code Requirements — Sunnyvale has enforced specific building code requirements in the flood prone areas to minimize potential property damage from flooding. Specific requirements for development in these areas to reduce flood hazards include minimum foundation pad heights above the projected flood depth as specified on the Flood Insurance Rate Map. For detailed information, refer to Sunnyvale Municipal Code Chapter 16.62 and the Flood Insurance Rate Map on file in the Public Works Department.

Future Flood Control Activities

There are four sources of flooding that can threaten Sunnyvale:

Excessive Precipitation — The areas in Sunnyvale that will flood as a result of heavy rains and the resulting surface runoff border Calabazas Creek and the East and West Flood control channels. Specific street flooding will also occur from clogged storm drains and low places in some roadways.

Storm drain inlets are routinely inspected prior to the rainy season each year and cleaned, if necessary, to prevent flooding, alleviate odors and/or prevent mosquitos from breeding. Maintenance crews also clean inlets in response to citizen and business complaints. The majority of the inlets are shallow (less than three feet deep) and debris is removed manually. Deeper inlets are cleaned using a vacuum truck and flushed with water to eliminate remaining debris.

Three significant flooding events have occurred in Sunnyvale since the 1993 writing of the Seismic Safety and Safety Sub-element. These events occurred in 1995, 1997 and the *El Nino* flooding of 1998. These were all declared disasters throughout Santa Clara County. In the years following these storms, the SCVWD, as the agency that maintains and improves the flood control channels in SCVWD completed a project to construct wing walls along Calabazas Creek several feet higher than they were. Additional channel openings, called "boxes", were also installed under Homestead Road, Vireo Avenue and Lochinvar Avenue, expanding the creek size under these streets. As a result of this



Figure 6-2. FEMA Flood Hazard Map

improvement, in 2009, City and SCVWD staff worked together to petition FEMA to remove over 200 acres of flood zone properties in Sunnyvale along Calabazas Creek, in the vicinity of both Vinemaple Avenue and Oakmead Parkway.

The District is also in the planning and design stage of two capital projects to improve the capacity of the Sunnyvale East and West Channels. The two projects were part of the 2000 voter approved Clean, Safe Creeks Program (Measure B). Once completed, the projects will provide 100-year flood protection to 1,600 parcels along the Sunnyvale East Channel and 47 acres of industrial lands along the Sunnyvale West Channel. In August 2010, the District Board approved the Planning Study Report and its recommendation for flood protection. Currently the project is in the Design Phase. Construction is expected to commence in spring of 2014.

Tidal and Tsunamis — Earthquakes may generate flooding from a tsunami (sea wave caused by an earthquake), seiche (wave generated in an enclosed body of water), or dam failure. A tsunami off the San Francisco coast could cause Bay water to top local levees, especially if it arrived at high tide. Tidal flooding could occur if the system of dikes and levees failed or their banks overflowed. Local earthquakes could cause failure in parts of the levee system which would create problems if a tsunami were to happen as well. The Santa Clara Valley Water District’s system is put in place to help reduce damage done by all hazards discussed above whether they happen individually or simultaneously.

The problem of dike vulnerability has been compounded by the general lowering of the ground surface in this part of Santa Clara County — six to eight feet from 1916 to 1966 in the northern areas of the City. During the same time frame the ground subsided three to four feet in the areas along El Camino Real. Until ground water recharge methods were initiated in the late 1960’s, the amount of freeboard on the dikes was constantly being diminished by an accelerated subsidence rate caused by groundwater withdrawal. Although human-caused subsidence has been minimal since 1967, a certain amount of subsidence is happening naturally due to regional tectonic movements, peat decay and a three inch rise in the sea level during the last 50 years.

A Capital Improvement Project was completed by the Department of Public Works in 2006 to repair and strengthen the levees surrounding the ponds, reducing the chance that the levees would fail in the event of a major earthquake.

Dam Failure — Failure of the Stevens Creek Reservoir dam caused by an earthquake could also affect the City of Sunnyvale. Most significantly affected would be the southwest part of the City south of Remington and west of Sunnyvale-Saratoga Road. This estimated flood inundation area is based upon the maximum 3,700 acre-feet storage capacity of the reservoir. Depending upon the quantity of water released, the depth of flooding could vary from several inches to several feet. For any large release of water Interstate-280 would act as a barrier to keep some water out of Sunnyvale.

Safety improvements to the reservoir and the dam were made in the mid-2000’s. The reservoir and the dam were engineered to withstand an earthquake on the San Andreas Fault of a magnitude 8.25 on the Richter scale. Upstream and downstream berms were built and the dam was raised 10 feet. The contour of gentle slopes surrounding the dam, plus the compacted earth along the sides and the face of the dam, were designed

Freeboard — a vertical distance, or clearance, from a 1 percent flood incident. Standards set by the FEMA and the Army Corp of Engineers call for a minimum three foot freeboard.

to encourage run-off and the collection of water and to discourage landslides. The spillway was also upgraded to be capable of withstanding a flow of 15,600 cubic feet per second. As an added precaution, safety inspections are done after all earthquakes of 5.0 or greater magnitude.

Rise in Sea Level — Although changes in sea level have been gradual and constant over the past 5,000 years, the rate of sea level rise in the past 100 years has almost doubled during the past several decades. The cause of the increase in the rate of sea level rise may be due in part to climate change and high levels greenhouse gas intensities.

A rise in sea level could cause significant problems in the future: flooding, shoreline erosion and saltwater intrusion into fresh water streams and aquifers. Although subsidence is now controlled by groundwater recharge and management of pumped aquifers, it may not be feasible to control the effects of global warming on rising sea levels.

No landslides on any of the county's dams have occurred in the past decade, not even in the 1995, 1997 and 1998 "El Nino" storms or after the 1989 earthquake.

POLICY SN-1.2 TAKE MEASURES TO PROTECT LIFE AND PROPERTY FROM THE EFFECTS OF A 1 PERCENT (100 YEAR) FLOOD. *(Previously Safety Policy A2)*

- **Action SN-1.2a** Encourage the Santa Clara Valley Water District to reevaluate the capacity of Stevens Creek, Calabazas Creek, Sunnyvale East, West and El Camino Flood Control Channels in relation to a 1 percent (100 year) flood. *(Previously Seismic Safety and Safety Key Initiative A.2.1)*
- **Action SN-1.2b** Encourage SCVWD to maintain their dikes and levees at least 3 ft. above the 1 percent flood level and to provide continued inspection and repair from damage caused by burrowing animals. *(Previously Seismic Safety and Safety Key Initiative A.2.3)*
- **Action SN-1.2c** Participate in the National Flood Insurance Program. *(Previously Seismic Safety and Safety Key Initiative A.2.5)*

POLICY SN-1.2 TAKE MEASURES TO PROTECT LIFE AND PROPERTY FROM THE EFFECTS OF A 1 PERCENT (100 YEAR) FLOOD. *(Previously Safety Policy A2)*

POLICY SN-1.3 OPERATE AND MAINTAIN THE STORM DRAINAGE SYSTEM AT A LEVEL TO MINIMIZE DAMAGES AND ENSURE PUBLIC SAFETY. *(Previously Surface Runoff Policy C.1)*

POLICY SN-1.4 MONITOR AND PLAN FOR HYDRAULIC CHANGES DUE TO GLOBAL WARMING, EARTHQUAKES AND/OR SUBSIDENCE. *(Previously Surface Runoff Policy C.3)*

- **Action SN-1.4a** Budget for and construct additional storm drainage detention and pumping facilities as needed, to assure the continued ability to discharge urban runoff and stormwater into channels, creeks and San Francisco Bay. *(Previously Surface Runoff Action Statement C.3.d)*
- **Action SN-1.4b** When designing structures along shorelines, consider future sea level changes. *(Previously Surface Runoff Action Statement C.3.e)*

Fire Hazards

Sunnyvale has a relatively low risk factor for fire loss and past fire experience has demonstrated Sunnyvale to be a relatively fire-safe community. However, as in any City, the potential for serious fire events is ever present. A trained and well-equipped fire service must be ready to respond to fires and other incidents. While the potential for extraordinary disaster always exists, and while the aging process of the City and its buildings will have some adverse impact on fire loss, the overall environment is comparatively fire-safe.

Because Sunnyvale is a relatively new community and because the City has a strong facilities inspection and fire education program, the incidence of fire is low. Each year, inspections are completed at all commercial facilities, apartments, hotels and schools with an emphasis on prevention. Additionally, fire station-based education programs target school children, while the Crime Prevention Unit provides more advanced public education programs to businesses and neighborhoods.

The majority of fires experienced in Sunnyvale are kitchen fires caused by inattention while cooking. Future public education will focus on residential kitchen fires to raise awareness and provide the community with information that will help to reduce the incidence of these types of fires.

See Goal SN-5 (Effective Fire Response System) for further information and policies on fire risk and response.

Hazardous Materials

For decades, Sunnyvale has been home to many innovative high tech companies. New and emerging technology companies (e.g. solar cell companies and LED light manufacturers) whose presence here is vital to a thriving and diverse business community, require the use of a large variety of hazardous materials, including highly toxic compressed gases. The highest hazard facilities, those with larger quantities of hazardous materials or materials having greater toxicity, are located in the industrial area in the northern part of the City.

As of 2010, more than 900 businesses in the City of Sunnyvale store or use hazardous materials in quantities requiring a permit. By serving as a Certified Unified Program Agency (CUPA) the City's Department of Public Safety is able to conduct inspections of hazardous materials facilities and to review and certify risk management plans to prevent accidental releases of hazardous materials. The City also maintains a hazardous materials response team, which is specially trained and equipped to mitigate emergencies that result in hazardous materials spills, releases and discharges. This team is relied upon to maintain the safety of all citizens when confronted with an emergency involving hazardous materials. The City has also improved Hazardous Materials response by maintaining a Type II HazMat Response Unit.

New hazardous materials threats continue to emerge in research and development activities, as well as terrorist initiated use of chemical, biological, radiological, nuclear and explosive (CBRNE) (also known as weapons of mass destruction (WMD)) agents. The City will continue to evaluate the need for collaborating between hazardous materials inspectors and first responders.

The State of California recognized and responded to the need for increased sharing of hazardous materials information by passing Assembly Bill 2286 which requires all businesses handling regulated quantities of hazardous material to electronically report inventories and site maps to the jurisdiction by 2013. Similarly, the City will be required to report hazardous materials inventories and compliance inspection data to the state by 2013.

POLICY SN-1.5 PROMOTE A LIVING AND WORKING ENVIRONMENT SAFE FROM EXPOSURE TO HAZARDOUS MATERIALS. *(Previously Safety Policy A3)*

- **Action SN-1.5a** Maintain the City's status as a Unified Program Agency as certified by the Environmental Protection Agency. *(Previously Seismic Safety and Safety Key Initiative A.3.3)*

Certified Unified Program Agency —
A certification awarded by the California Environmental Protection Agency that allows the City to implement several important state environmental programs locally.

POLICY SN-1.6 OPERATE A RESPONSE SYSTEM THAT WILL PROVIDE EFFECTIVE CONTROL AND INVESTIGATION OF HAZARDOUS MATERIALS EMERGENCIES. *(Previously Fire Services Policy 4.2B.2)*

- **Action SN-1.6a** Provide a specially trained and equipped response team capable of mitigating emergencies resulting from hazardous materials leaks, spills and discharges and conduct related inspections and permit activities. *(Previously Fire Services Action Statement 4.2B.2a)*
- **Action SN-1.6b** Consider electronic technology to provide Hazardous Materials Management Plan (HMMP) information “on-line” at emergency scenes. *(Previously Fire Services Action Statement 4.2B.2c)*
- **Action SN-1.6c** Consider regional hazardous materials response system. *(Previously Fire Services Action Statement 4.2B.2d)*
- **Action SN-1.6d** Study potential impacts of emerging bio-technology on response capabilities and related inspection and permit activities. *(Previously Fire Services Action Statement 4.2B.2e)*

Aviation Hazards

Sunnyvale lies in the landing pattern of Moffett Federal Airfield and, during south winds, planes take off over heavily-developed areas. Risk of future accidents exists even though the Navy’s usage of Moffett Field as a Naval Air Station ended in 1994.

Compatible land uses for and around NASA Ames/Moffett Field have been the subject of intense debate for many years. Other than the potential of aircraft accidents, noise is the most significant concern of area residents. The noise levels at Moffett Federal Airfield have dropped significantly since the Navy was operating the field. Stage III aircraft are now required for aircraft landing at Moffett. This is the lowest level for both noise and emission levels. Both the level of activity and noise levels are more closely examined in the Noise subsection of this chapter.

NASA/Ames has recently explored and initiated the leasing of airfield usage to large private companies as part of corporate collaborations. Close monitoring of increased usage and potential growth of Moffett Field is warranted. While Sunnyvale has no direct authority over NASA/Ames, NASA has been responsive to the cities of Sunnyvale and Mountain View regarding noise/traffic levels.

See **Goal SN-11 (Maintained or Reduced Transportation Noise)** for further discussion and policies about Moffett Field noise.

Further policies addressing NASA/Ames Moffett Field are available in the Council Policy Manual, available at www.sunnyvale.ca.gov

POLICY SN-1.7 MAKE PLANNING DECISIONS THAT ESTABLISH AND/OR MAINTAIN A SAFE MIX OF AVIATION AND LAND USE FOR THE AREAS AFFECTED BY NASA/AMES MOFFETT FIELD. *(Previously Safety Policy A4)*

- **Action SN-1.7a** Oppose any effort to promote Moffett Field for civil/general aviation. *(Previously Safety Key Initiative A.4.1)*

Lifelines

Lifelines are essential services that are necessary for the continued functioning of the community following a disaster. They include utilities (gas, electricity, water, sewer and communications), City streets, major highways, bridges and railways lines. Information on age, service, condition and location help emergency preparedness planners assess the likelihood of failure.

Electric Power — PG&E provides the natural gas and electrical power for Sunnyvale. The severity of damage to these utilities resulting from an earthquake and what effects it will have is very difficult to forecast. PG&E has three electrical sub-stations in the Sunnyvale area — along with a backup power supply network comprised of multiple transmission lines. If power is interrupted, service from other sources can be obtained.

Water Service — Sunnyvale has four sources of potable water in the City: San Francisco's Hetch Hetchy system, the Santa Clara Valley Water District (SCVWD), 10 City wells and Cal Water. This system supplies both domestic and emergency water for the City. Projects were completed in the 1990's that provide the grid connections in Sunnyvale's water delivery system that will allow water from any supply source to be distributed to any area of the City, along with additional backup supply sources.

Sanitary Sewer — The Water Pollution Control Plant (WPCP) is a large facility that processes all of the City's sewage. The WPCP has two separate generators normally used every day that supply approximately 90 percent of the electrical needs of the plant. Operators of the plant have participated in a thorough training program in plant operations and emergency incidents (including chemical spills, leaks and containment procedures).

Roadways and Overcrossings — Sunnyvale has 46 major roadway over-crossings and bridges on streets and freeways within City limits. Sunnyvale has completed seismic retrofitting for all over-crossings in the City of Sunnyvale. The Mathilda overcrossing at Evelyn is scheduled for modernization and widening to be completed with the most recent seismic safety standards by 2011.

See **EM-1, EM-2, EM-3 and EM-4 (Water Resources)** for further discussion and policies in the Environmental Management Chapter.

POLICY SN-1.8 MAINTAIN LIFELINES IN GOOD OPERATING CONDITION TO LESSEN DAMAGE AND INCREASE SURVIVABILITY AFTER A MAJOR DISASTER. *(Previously Safety Policy A5)*

For more information about the levee system, see the Flood Hazards discussion.

- **Action SN-1.8a** Study, evaluate and fund the improvements needed to the levee system at the Water Pollution Control Plant to increase its ability to survive a major earthquake. *(Previously Seismic Safety and Safety Key Initiative A.5.3)*
- **Action SN-1.8b** Actively pursue funding for the undergrounding of utilities in accordance with the principals and guidelines of Public Utilities Commission and PG&E Tariff Rule 20-A. *(Previously Seismic Safety and Safety Key Initiative A.5.4)*

**GOAL SN-2
EFFECTIVE DISASTER PREPAREDNESS**

ENSURE THAT THE CITY, ITS COMMUNITY MEMBERS, BUSINESS, FAITH-BASED ORGANIZATIONS, COMMUNITY ORGANIZATIONS AND SPECIAL NEEDS POPULATIONS ARE PREPARED TO EFFECTIVELY RESPOND AND RECOVER FROM MAJOR DISASTERS AND EMERGENCIES *(Previously Seismic Safety and Safety Mission B and C Combined / Adopted in 2008)*

There is a difference between the day-to-day response to emergencies and the response needed to meet the demands of a disaster. City Departments respond to the routine emergencies of the community. However, disasters pose a different set of demands that the normal resources and established levels of service cannot meet. In general terms, a disaster is defined as an emergency event which exceeds the capacity of the City to handle it in the same manner as it handles the day-to-day emergencies that occur. Effective emergency management requires the City to use all of its resources to meet emergency needs.

The overall strategy of emergency management is to provide for an integrated approach to preventing, planning, responding, preparing and mitigating disasters.

Isolation after a Disaster

Neighborhood and/or community isolation after a disaster such as a major earthquake is likely as some normal transportation routes and communication lines may be damaged during such an event. Internal isolation occurs when the City's ability to receive reports of emergencies, relay emergency information and respond to citizen's requests for help is limited by destroyed or damaged lifelines. External isolation occurs when the City's ability to communicate emergency conditions and the ability to request or receive outside emergency resources is lost due to destroyed or damaged lifelines. When these effects delay or prevent the delivery of emergency services into affected areas it increases the level of risk to persons and property.

See Goal SN-1 (Acceptable Levels Of Risk For Natural And Human-Caused Hazards) for a discussion of lifelines.

Emergency Planning and Coordination

Responsibility for preparing for emergencies lies both with the City and the members of the community. No government agency has all the resources needed to respond to all the needs of its community members in or after a disaster. The City has established an emergency management program to coordinate emergency planning for neighborhoods, schools and businesses. When City resources are exhausted and a local emergency has been declared, outside assistance can be requested through an established network of local, operational area, regional, state and federal mutual aid.

Community and Staff Notification Systems

Public Safety has automated a notification system that uses two different methods to rapidly notify personnel for emergencies. The first method is the rapid, automatic notification of specific groups of staff members identified as having certain needed skills sets, such as SWAT, Hazardous Materials, Accident Investigation teams and DPS administration. Santa Clara County also has a web base that allows any subscriber in the county to enter their phone number, usually cell number, and e-mail address. Santa Clara County is currently exploring the implementation of a system which includes this web based “reverse 911” type system.

Community Resources

One of the City’s greatest resources is its people. When a disaster — natural or man-made — strikes a community, spontaneous, unaffiliated volunteers — neighbors and residents — often arrive on-site at a disaster ready to help. As seen in previous disasters (e.g. Loma Prieta Earthquake, September 11 tragedy, Hurricane Katrina, etc.) affiliated and unaffiliated volunteers willingly and in unprecedented numbers, will do anything to provide assistance in recovery efforts including office work, treating the injured, looking for the missing, making signs, removing debris from collapsed structures and interviewing other volunteers. In Santa Clara County, specifically in Sunnyvale, the City is providing the means beforehand to identify and train affiliated volunteers and have in place an Emergency Volunteer Plan to address the needs of unaffiliated volunteers.

Unaffiliated volunteers are not part of a recognized voluntary agency and often have no formal training in emergency response. They are not officially invited to become involved but are motivated by a sudden desire to help others in times of trouble. They come with a variety of skills. They may come from within the affected area or from outside the area.

Volunteer and resource programs include:

- **Sunnyvale Neighborhoods Actively Prepare (SNAP)** — a program to educate and train our residents to take care of themselves in the aftermath of a major disaster.
- **Project Ark** — a disaster shelter program that involves emergency containers called “ARKS” placed at eight school sites around the City.

Affiliated volunteers are attached to a recognized voluntary organization and are trained for specific disaster response activities. Their relationship with the organization precedes the immediate disaster and they are invited by that organization to become involved in a particular aspect of emergency management. An example of affiliated volunteers is Sunnyvale Amateur Radio Emergency Services (SARES).

- **Sunnyvale Amateur Radio Emergency Services (SARES)** — an organization of more than 100 amateur radio operators in the community that provide assistance to the City at both routine special events, when additional radio communications are needed and during emergencies/disasters.
- **Volunteer Emergency Response Team (VERT)** — a team created by the City of Sunnyvale to organize emergency volunteers.
- **Volunteer Center** — a countywide workgroup sponsored by the Volunteer Center of Silicon Valley and the Emergency Manager’s association to plan and coordinate volunteers during a major disaster or emergency.
- **City Disaster Workers (DSW)** — a training given to all City employees to enable them to remain at, or report back to work in the event of a disaster.
- **Other City Volunteering Efforts** — the City allows employees to volunteer for disaster relief efforts during normal work hours with City approval.

For more information on the City’s emergency preparedness and volunteer programs and other resources, see oes.inSunnyvale.com

Post Disaster Recovery

The recovery from a disaster needs to be as well planned as the initial emergency response. When a community has been devastated by a disaster, pressure from displaced businesses and families to rebuild as quickly as possible can be overwhelming for the local Planning Commission and City Council. If this happens, little thought will be given to correcting past mistakes, evaluating changes in land usage and their long-range effects on a community. A community can effectively plan to recover from a disaster and with thoughtful planning; those strategies will provide a framework for the recovery.

In 2005, ABAG received grant funds to assist local agencies to comply with the Disaster Mitigation Act of 2000 requirements. ABAG invited local agencies to participate and complete the detailed planning necessary to create a pre-disaster mitigation plan. ABAG completed a regional plan for the nine Bay Area counties which was adopted by ABAG on March 17, 2005 after being approved by FEMA. Local agencies were given the opportunity to partner with ABAG to reduce the staff time required to complete a plan. Sunnyvale staff participated with ABAG and completed a FEMA approved Local Annex to the approved ABAG Plan in 2005. The plan is part of an overall strategy to reduce or eliminate long term risk to life and property from a natural hazard event. Adoption of the “Local Annex” as a part of the overall plan better prepares Sunnyvale for future emergencies and allows the City to apply for FEMA grant funds to mitigate existing risks.

See Goal SN-1 (Recognition of Natural and Human-Caused Hazards) for further discussion and policies on hazards.

Sunnyvale’s 2005 Local Hazard Mitigation Plan (LHMP) Annex focuses on the nine likely hazards to occur in the Bay Area. The nine hazards are five earthquake related hazards – faulting, shaking, landslides, liquefaction and tsunamis; and four weather related hazards – flooding, landslides, wildfires and drought.) The LHMP continues to be examined and analyzed for future needed changes that may develop in the area of recovery. This plan will be updated periodically.

POLICY SN-2.1 CONSTRUCT OR MAINTAIN CITY FACILITIES UTILIZED FOR EMERGENCY RESPONSE TO ESSENTIAL SERVICES BUILDINGS, SO THAT THEY REMAIN OPERABLE AFTER A MAJOR SEISMIC EVENT. *(Previously Safety Policy B1)*

POLICY SN-2.2 PROVIDE FOR THE EMERGENCY MANAGEMENT OF THE CITY IN ORDER TO RESPOND EFFECTIVELY AND TO ASSURE LIFE AND PROPERTY SAFETY IN THE EVENT OF A DISASTER. *(Previously Safety Policy B2)*

- **Action SN-2.2a** Develop an alternate Emergency Operations Center site, in the event of loss of the primary site. *(Previously Safety Key Initiative B.2.4)*

POLICY SN-2.3 PROVIDE AN INTEGRATED APPROACH TO PLANNING AND MANAGEMENT FOR EMERGENCIES AND DISASTERS. *(Previously Safety Policy B3)*

POLICY SN-2.4 PROVIDE INFORMATION, ASSISTANCE AND ENCOURAGEMENT TO COMMUNITY MEMBERS, PUBLIC/PRIVATE SCHOOLS, DAY CARE CENTERS, BUSINESS AND INDUSTRY TO ASSIST IN THEIR PLANNING AND PREPAREDNESS FOR EMERGENCIES AND DISASTERS. *(Previously Safety Policy B4, B5 and B6)*

POLICY SN-2.5 PROVIDE EMERGENCY RADIO OR OTHER COMMUNICATION DEVICES FOR COORDINATION OF EMERGENCY RESPONSE AND THE CAPABILITY TO COMMUNICATE WITH OUTSIDE AGENCIES AND COMMUNITY MEMBERS. *(Previously Safety Policy B7)*

POLICY SN-2.6 ACTIVELY SEEK AND APPLY FOR GRANT FUNDING FROM AVAILABLE GOVERNMENTAL AND PRIVATE SOURCES THAT WOULD ENHANCE EMERGENCY PREPAREDNESS. *(Previously Safety Policy B8)*

POLICY SN-2.7 PROVIDE FOR THE CONTINUATION OF CITY GOVERNMENT AND SERVICES FOLLOWING A MAJOR DISASTER AS QUICKLY AS FEASIBLE. *(Previously Safety Policy C1)*

POLICY SN-2.8 ENCOURAGE COMMUNITY MEMBERS AND BUSINESS/INDUSTRY TO PLAN FOR RECOVERY FROM DISASTERS AS QUICKLY AS FEASIBLE. *(Previously Safety Policy C2)*

POLICE, FIRE AND EMERGENCY SERVICES

**GOAL SN-3
SAFE AND SECURE CITY**

ENSURE A SAFE AND SECURE ENVIRONMENT FOR PEOPLE AND PROPERTY IN THE COMMUNITY BY PROVIDING EFFECTIVE PUBLIC SAFETY RESPONSE AND PREVENTION AND EDUCATION SERVICES *(Previously Law Enforcement Goal 4.1A and 4.1B/ Adopted in 1995)*

Community safety is the top priority for the City. The community, both residents and visitors, must feel fundamentally safe while living, working or conducting daily activities within the City of Sunnyvale. This is accomplished in many ways; from prevention of the crime before it occurs, to patrol response to the emergency, to investigation of the crime once the initial report has been written. In addition to crime prevention and investigation, there are non-criminal emergencies as well as traffic related community safety concerns.

The City’s crime prevention function has two aspects: Eliminating the desire and eliminating the opportunity to commit crime. While it may be more difficult to eliminate one’s desire to commit a crime, the City can lessen the desire by taking away the opportunities. Current crime prevention techniques include the environmental

design of residential and commercial developments, neighborhood watch programs, community education in sexual assault awareness and robbery prevention and high visibility patrol.

One of the key elements of any successful crime prevention program is community involvement. This is accomplished by reaching out to citizens of all ages and socio-economic background. The City has forged these relationships in the schools, neighborhood groups and fraternal organizations and within the business community.

Over the last several years Public Safety has utilized the Problem Oriented Policing model for identifying potential trouble spots within the City and expending available resources to help clean the area up and avoid having a rising crime rate. The addition of the Neighborhood Preservation Unit (NP) and the Neighborhood Enhancement Action Team (NEAT) are two such resources that assist with identifying areas of the City which may turn into problem areas. NP and NEAT pro-actively survey neighborhoods and help rid them of blight like overgrown weeds, graffiti, broken windows and general run-down residential and commercial properties. NEAT works with the residents, landlords and business owners to address property appearance, crime within the neighborhood and quality of life issues. Addressing and correcting these issues makes for a safer, friendlier environment.

When the desire for crime continues to exist, the need for fundamentally sound patrol response and skilled investigative follow up become key elements. These two key elements help keep the overall crime rate low, which routinely places the City of Sunnyvale as one of the top 10 safest cities in America with a population over 100,000. These crime rates are derived from the Uniformed Crime Report that is published yearly by the Federal Bureau of Investigation. The report is based on crime statistics provided from police departments across the nation.

Technology and Public Safety

As technology around the world continues to develop, the City keeps its pace and worked with private sector vendors to increase its technological capabilities. In fiscal year 2010/11, a third generation Mobile Dispatch Terminal called Mobilcom was installed in police and fire apparatus. This new technology will enable dispatch to send the closest unit(s) to an emergency call, thereby further reducing our response times. Mobilcom also allows the infield end users access to information on local, state and federal data bases as well as internet links such as Google Earth to assist with the investigation of crimes.

Other technological advances being pursued and implemented are shared statewide Records Information Systems (RMS). These systems allows for input and retrieval of suspect, vehicle, stolen property and other pertinent information that assists to the apprehension of criminals within our communities.

Within Public Safety's own databases are technological tools for the officers and citizens that provide real time crime information. All of these technology tools are utilized by the Crime Analyst to track crime trends by types of crimes, the areas where they are occurring, day of the week and time of day. The Crime Analyst also compiles suspect data from the crime reports to assist the officers with identifying gang activity within the City.

See Goal SN-4 (Public Confidence in Police Services) for further information on community relationships, including Neighborhood Resource Officers and Challenge Team Sunnyvale.

See Community Condition Indicators at *GeneralPlan*. In *Sunnyvale.com* for yearly crime statistics.

See Goal HE-2 (Maintain and Enhance the Conditions and Affordability of Existing Housing) for further information and policies on neighborhood preservation and rehabilitation programs.

For more information about the Department of Public Safety’s programs, see dps.inSunnyvale.com

In the future we can look forward to further technological advances in tracking crime trends as well as interoperability between jurisdictions with RMS and communications systems.

POLICY SN-3.1 PROVIDE RAPID AND TIMELY RESPONSE TO ALL EMERGENCIES. *(Previously Law Enforcement Policy 4.1A.1)*

POLICY SN-3.2 CONTROL CONDUCT RECOGNIZED AS THREATENING TO LIFE AND PROPERTY. *(Previously Law Enforcement Policy 4.1A.2)*

POLICY SN-3.3 PROVIDE INVESTIGATIVE SERVICES DIRECTED TOWARD SUCCESSFUL PROSECUTION AND CONVICTION OF CRIMINAL OFFENDERS. *(Previously Law Enforcement Policy 4.1A.3)*

POLICY SN-3.4 REDUCE CRIME AND FEAR BY STRENGTHENING THE POLICE/ COMMUNITY PARTNERSHIP. *(Previously Law Enforcement Policy 4.1A.4)*

POLICY SN-3.5 FACILITATE THE SAFE MOVEMENT OF PEDESTRIANS, BICYCLISTS AND VEHICLES. *(Previously Law Enforcement Policy 4.1A.5)*

POLICY SN-3.6 AID THOSE WHO CANNOT CARE FOR THEMSELVES (INTOXICATED, ADDICTED, MENTALLY ILL, PHYSICALLY DISABLED, THE YOUNG, THE OLD). *(Previously Law Enforcement Policy 4.1B.1)*

POLICY SN-3.7 PROVIDE CRISIS INTERVENTION, CONFLICT MANAGEMENT AND RESOLUTION. *(Previously Law Enforcement Policy 4.1B.2)*

GOAL SN-4 PUBLIC CONFIDENCE IN POLICE SERVICES

INCREASE AND MAINTAIN PUBLIC CONFIDENCE IN THE ABILITY OF THE PUBLIC SAFETY DEPARTMENT TO PROVIDE QUALITY POLICE SERVICES *(Previously Law Enforcement Goal 4.1C / Adopted in 1995)*

Public confidence is the cornerstone of a successful law enforcement organization. A police agency that is disengaged from the community cannot possibly meet the demands of modern day law enforcement operations and the expectations of today's society. As an agency builds the confidence of the community, the public often feels comfortable contacting law enforcement to request assistance or to relay information. The agency that quickly responds to this contact with a professional, well trained and well equipped police force, stands to further build trust with the community that ultimately leads to an enhanced quality of service. A professional organization that approaches each community contact as an opportunity to establish a deep connection with the citizen will likely be rewarded with information that can be utilized to effectively and efficiently provide the needed services, whether that is the investigation of a homicide or the resolution of a neighborhood dispute.

Professional Standards and the Public Safety Assurance of Quality Control

In order to sustain the successes of community confidence building efforts, an agency must provide feedback to the community about investigations of criminal acts or complaints related to the conduct of officers, to the degree possible. The public must know that the information that is provided to the police is actually being utilized to solve the crime that they reported or to improve the service delivered to the community. Often times this type of community confidence is enhanced through mandatory reporting requirements currently utilized by all agencies in Santa Clara County. Public Safety participates in all County level sub-committees charged with creating and reviewing county reporting protocols and the mandatory reporting requirements contained within them.

Citizen commendations and complaints provide the City with valuable information for evaluating employee performance, identifying areas of police misconduct, monitoring police relations with the public and identifying the need for new or revised policies or improved training. For these reasons, citizens are encouraged to report both commendations and matters of misconduct to the City.

Neighborhood Resource Officers

The Department of Public Safety takes pride in being connected to community. More than 30 years ago, the Neighborhood Resource Officer position was created. The primary focus of these officers is to be in schools connecting with children and teachers. Additionally, these officers provide service to neighborhoods and the business community in the form of crime prevention tips and neighborhood conflict resolution. This direct contact will sustain and enhance public trust now and into the future.

Challenge Team Sunnyvale

In 2007, Public Safety created the “Challenge Team Sunnyvale.” Monthly, members of the community meet at Public Safety Headquarters to discuss youth and community issues. These community members represent the business community, non-profit organizations, health care professionals, faith base organizations, judicial representatives and law enforcement. The team has brought resources together to sponsor youth activities, mentoring programs and the group is currently working towards a public/private collaboration that will be designed to bring youth services to underserved areas of the community. It is this deep connection that will sustain community confidence and enhance public trust into the future.

Continuously Enhancing Community Connections

In 2004, the City requested the assistance of the Police Executive Research Forum (PERF) to evaluate our community outreach efforts and provide suggestions to strengthen our valued relationship with the public. The Neighborhood Resource Officer position, as well as the entire Crime Prevention Unit in the Department of Public Safety, was highlighted as key to enhancing connections with the community and strengthening public trust.

The study determined that citizens in the City of Sunnyvale feel safe in the community and are extremely satisfied with the delivery of police services. PERF did point out several areas by which the department could create a deeper connection with the public. The study suggested enhancements to the Public Safety website and the use of the media to highlight Public Safety activities. The City of Sunnyvale has made substantive changes to the website designed to highlight services available and enhance the public’s experience. In addition, the City is currently utilizing social media and an e-newsletter designed to highlight activities and bring transparency to operations.

The City will continue to explore the benefits of the utilization of social media and the use of smart phone technology to open avenues of communication with the public and provide transparency to the community. In addition to non-traditional methods, the City emphasizes connections in non-traditional settings. Connecting Public Safety Officers with other City departments, such as Economic Development and Community Services, enhances service to the public. These types of relationships break down barriers and perceptions, leading to significant enhancements of public trust.

POLICY SN-4.1 PROVIDE INSPECTION AND CONTROL OF PERSONNEL AND DEPARTMENT OPERATIONS WHICH IS RESPONSIVE TO CITIZENS' CONCERNS. *(Previously Law Enforcement Policy 4.1C.2)*

POLICY SN-4.2 PROVIDE FOR ASSESSMENT OF CHANGING COMMUNITY NEEDS AND EXPECTATIONS. *(Previously Law Enforcement Policy 4.1C.1)*

- **Action SN-4.2a** Identify means of measuring citizen satisfaction with police services. *(Previously Law Enforcement Action Statement 4.1C.2a)*

GOAL SN-5 EFFECTIVE FIRE SERVICE RESPONSE SYSTEM

PROVIDE A FIRE SERVICE RESPONSE SYSTEM THAT WILL CONTROL THE SPREAD OF FIRE IN BUILDINGS AND OTHER PROPERTIES AND MAINTAIN MINIMAL CASUALTIES AND PROPERTY LOSS FROM FIRE AND OTHER RELATED EMERGENCIES *(Previously Fire Services Goal 4.2A/ Adopted in 1995)*

Structure fires are the foundation for most firefighting, training, equipment and policy decisions. While representing only a small percent of total calls for service, structure fires pose the greatest threat to life, safety and high dollar property loss and a quick response to emergency incidents is essential.

A strong fire prevention program is a necessity for a safe community. An appropriate combination of building and life safety codes, ordinances, permitting processes, inspection and enforcement efforts and public education are all vital components of such a program. Providing fire safety education to buildings with greater than average fire and life hazard potential, such as schools, hotels, restaurants, nursing homes, high density housing and other public assemblies is crucial to increasing life safety and reducing property loss.

On average, the Fire Services Division responds to approximately 7,300 calls for service annually. Of those calls for service, approximately 70 percent are Emergency Medical (EMS) calls. Per year, the Division responds to approximately 620 hazardous material calls and 140 structure fires. There are six fire stations in the city, all of which were remodeled between 1998 and 1999. The stations are situated throughout the city, based on a combination of call volume and response time. The department has mutual aid and/or auto aid agreements with Santa Clara County Fire, San Jose Fire, Mountain

See Goal SN-1 (Acceptable Levels of Risk for Natural and Human-Caused Hazards) for additional discussion of fire hazards and response.

View Fire and Santa Clara (City) Fire. These agreements cover responses to freeway incidents and structure fire incidents, in areas of common shared boundaries between jurisdictions.

An often-cited measure of fire suppression capability is the rating assigned to a department by the nationally recognized Insurance Services Office (ISO). The ISO is a subsidiary of a publicly traded company and acts as an advisory organization which provides information that insurance companies may use to establish premium costs. The rating is based on, among other things, fire alarm and communications systems, telephone and dispatching systems, fire equipment, staffing, training and geographic distribution of fire stations. Based on all this information, the ISO assigns a classification rating from 1-10. Sunnyvale has an ISO rating of 2, which falls within the 'superior' category.

During fiscal year 2009/2010, fifteen Fire Services vehicles were equipped with Mobile Dispatch Terminals (MDT's), with funding provided by the Assistance to Firefighters grant. The MDT's improve Fire Services response capabilities through the use of state-of-the-art technology, which provides field response data and field mapping. This technology allows fire personnel to reduce the response time to fire and EMS emergencies.

The next phase of the MDT implementation is the use of GPS-based dispatching. This technology will utilize a program called Automated Vehicle Locator (AVL). This program will allow the dispatcher's Computer Aided Dispatch (CAD) to identify the fire apparatus which is closest to the call being received and prompting the dispatch of that apparatus.

On a regional level, the issue of consolidating fire apparatus maintenance is being discussed and explored. Currently, all nine providers of fire service in the county run their own in-house maintenance unit. Developing shared maintenance facilities will most likely provide economies of scale and cost savings for participating departments, in addition to enhanced coverage of service.

POLICY SN-5.1 ASSURE THAT EQUIPMENT AND FACILITIES ARE PROVIDED AND MAINTAINED TO MEET REASONABLE STANDARDS OF SAFETY, DEPENDABILITY AND COMPATIBILITY WITH FIRE SERVICE OPERATIONS.
(Previously Fire Services Policy 4.2A.1)

POLICY SN-5.2 PROVIDE TRAINING THAT IS ADEQUATE FOR REQUIRED DUTIES. *(Previously Fire Services Policy 4.2A.2)*

For more information on the Fire Services program, see *fireprevention.inSunnyvale.com*

POLICY SN-5.3 RESPOND TO REQUEST FOR SERVICES. *(Previously Fire Services Policy 4.2A.3)*

POLICY SN-5.4 CONDUCT FIELD OPERATIONS AND EMERGENCY SCENE MANAGEMENT IN A SAFE, EFFECTIVE AND EFFICIENT MANNER. *(Previously Fire Services Policy 4.2A.4)*

- **Action SN-5.4a** Maintain a system of pre-fire surveys for selected buildings and provide critical information that is immediately available to responding emergency personnel should an incident occur. Fully integrate all pre-fire surveys into apparatus-based CAD's, in order to provide pre-fire survey information "on-line" at emergency scenes. *(Previously Fire Services Action Statement 4.2A.4b)*
- **Action SN-5.4b** Take measures that reduce the number of false alarms. *(Previously Action Statement 4.2A.4f)*

GOAL SN-6 EFFECTIVE EMERGENCY RESPONSE CAPABILITY

PROVIDE EFFECTIVE RESPONSE CAPABILITY FOR EMERGENCY MEDICAL EVENTS AND OTHER NON-FIRE INCIDENTS THAT MAY DIRECTLY ENDANGER THE LIVES, PROPERTY AND WELL-BEING OF THE COMMUNITY. *(Previously Fire Services Goal 4.2B / Adopted in 1995)*

The Department of Public Safety participates in an emergency medical services (EMS) system that is integrated into the larger Santa Clara County Emergency Medical Services System. This system provides for Basic Life Support (BLS) response by Public Safety resources followed by Advanced Life Support (ALS) response by the County of Santa Clara. This tiered response system efficiently utilizes resources within a cost effective manner.

The EMS system within California is governed by county and state regulations as well as court decisions. Through this regulatory system, the County of Santa Clara holds the exclusive rights to operate the ALS paramedic transport system. The County of Santa Clara is responsible for the medical oversight of the EMS system, including the care provided by Public Safety personnel. Public Safety maintains a physician medical director to meet regulatory and statutory requirements for equipment purchases and mandatory internal quality improvement activities. Public Safety is a State of California Certifying Entity and an approved EMT-Basic Training Program and is able to train,

See Goal SN-1 (Acceptable Levels of Risk for Natural and Human-Caused Hazards) for a discussion of hazardous materials risks and response.

certify and recertify our own personnel as EMT-Basic providers.

In 1996, Public Safety implemented an early defibrillation program, which allowed public safety personnel to utilize an AED to treat patients in cardiac arrest. Changes in California law provide the opportunity to add AEDs to City facilities for use by non-traditional responders and laypersons. Sunnyvale was one of the first communities in the California to implement a program. Many cardiac arrest victims have been saved by Public Safety personnel as well as residents and visitors to our City facilities through the use of these AEDs.

The County of Santa Clara contracts with a vendor to provide a fee-for-service paramedic transport system for all of Santa Clara County with the exception of the City of Palo Alto who maintains their own fire department based paramedic transport service. The Santa Clara County Paramedic Ambulance Contract sets response time standards for the vendor that applies throughout the County.

Sunnyvale is the only City in Santa Clara County that does not provide paramedic services through its own or contracted fire service provider. This provides the City little opportunity to affect change. Since the inception of paramedic services in Santa Clara County, Public Safety has brought to Council options to provide paramedic services within the Public Safety model. Public Safety will continue to monitor the County's paramedic service provision. Public Safety will evaluate the options/opportunities to deliver paramedic services within the Department of Public Safety and will periodically report to Council its findings.

Within this ongoing paramedic evaluation process, the City will utilize advances in technology to help reduce response times. Scheduled for completion in 2011 is the establishment of a link between the Public Safety Dispatch computers and County Communications to decrease the response time of paramedics. As in-vehicle GPS becomes more accessible, closest-unit dispatching will be explored to further reduce response times to medical emergencies.

POLICY SN-6.1 PROVIDE IMMEDIATE LIFE SUPPORT TO THOSE THREATENED BY SITUATIONS REQUIRING EMERGENCY MEDICAL SERVICES OR RESCUE.
(Previously Fire Services Policy 4.2B.1)

- **Action SN-6.1a** Study and where feasible, provide alternate methods of emergency medical service delivery when it is determined to be more efficient and beneficial to those in need. Consider EMT-P level training. *(Previously Fire Services Action Statement 4.2B.1b)*

GOAL SN-7 EFFECTIVE EMERGENCY COMMUNICATION SERVICES

PROVIDE EMERGENCY COMMUNICATIONS SERVICES (*Previously Support Services Goal 4.3D / Adopted in 1988*)

The Sunnyvale Department of Public Safety Dispatch Center provides a public safety answer point twenty four hours a day 365 days a year. This is a critical link between the City's emergency services, first responders and its citizens, and is the primary method of coordination of Public Safety services. When a citizen has a complaint, problem, or emergency, virtually all of this information is channeled through the Public Safety Dispatch Center, which then disseminates and/or dispatches the information to Public Safety responders or allied agencies/departments. The Dispatch Center handles tens of thousands of calls for service each year, including many calls from non-English speaking citizens. With the advent of cellular phones as well as a growing population, the numbers of calls have increased dramatically and most likely will continue into the foreseeable future.

Most calls coming into the Dispatch Center are either fire or police-related. These include crimes in progress, medical emergencies and fires. The timely transmission of information to field units is critical to enabling successful outcomes. As such, training, the use of new technology and interoperability enables the communications dispatchers to effectively gather and disseminate information more efficiently.

The Department of Homeland Security has stated that interoperability is a top priority for Public Safety agencies nationwide. The purpose of this interoperability goal is to connect voice and data communications for near real-time sharing across multiple agencies, counties and regional partners. The Bay Area Urban Area Security Initiative is tasked with helping 10 counties in the region to prepare for all hazards, natural or man-made, through a collaborative approach. The ability for multiple cities and counties to work together provides a significant advantage in the development of these communication networks leveraging infrastructure, knowledge and funding sources as a region.

There are four major components to this interoperability effort:

- Radio/voice communications
- Information sharing
- Broadband technology
- Digital microwave connectivity through the 10 bay area counties

Future challenges include upgrading of the Public Safety Department’s CAD (Computer Assisted Dispatch) system and trends towards Public Safety Answer Point/Dispatch consolidation. Additionally, it is anticipated that an aging population will continue to increase demands upon the Dispatch Center for response to medical emergencies. Lastly, costly maintenance and upgrading of critical infrastructure will need to remain a priority to ensure that the highly trained dispatchers and first responders have all of the tools necessary to receive and respond to calls for service at all times including during critical events, disasters and acts of terrorism.

POLICY SN-7.1 PROVIDE EMERGENCY COMMUNICATIONS SERVICES 24 HOURS A DAY 100 PERCENT OF THE TIME. *(Previously Support Services Policy 4.3D.1)*

Noise is defined as unwanted sound.

Ambient noise — a relatively steady background noise which is an accumulation of different noise sources near and far. Most ambient noise in Sunnyvale is related to transportation. Other ambient noise sources include wind and chirping birds.

Single-event noise — An unusual, occasional or temporary noise. Examples include barking dogs, construction work, deliveries and organized athletic, musical or other group events.

Land use operational noise — a continuous or frequent noise related to the basic use of property. Examples include air conditioners, pool pumps, restaurant loudspeakers and industrial machinery.

NOISE

Noise is a significant and inherent part of Sunnyvale’s environment. The noise environment is a result of historical land use decisions, competing regional and community goals, geographic factors and limited local controls. The City’s residents and businesses must tolerate some noise, as noise is a part of any urban environment. Excessive noise, however, can cause physical and mental health problems. A legitimate public concern is therefore, to protect residents from excessive noise.

The discussion of noise is divided into two categories: transportation noise and community noise. Transportation noise generated by roadway, aircraft and train and light rail facilities is a major contributor to ambient noise in Sunnyvale. Community noise consists of everything other than transportation-related noise and includes single-event and land use operational noise.

A sound level meter is used to take an instantaneous decibel reading. The resultant reading is the sound level (dBA) for an instant in time. Noise is measured and regulated in two different ways. For land use operational noise, instantaneous readings are measured. For ambient or transportation related noise (except for single-event train horns), an average noise (Ldn) is used (the average sound Level for Day and Night. An Ldn measurement (day/night average sound level) is a weighted average sound level in decibels during a 24-hour period.

For the purposes of enforcement, all noise measurements are taken at applicable property lines of the property generating the noise. Single-event or land use operational noise is measured through instantaneous sound levels. Land use compatibility sound levels are measured with the Ldn measurement. These measurements are used to enforce Sunnyvale noise regulations.

Figure 6-3 — Decibel Levels of Common Sounds

Noise Source (distance between source and listener)	Sound Level (dBA)	Subjective Impression
Civil Defense Siren (100')	130	
Jet Takeoff (200')	120	Threshold of Pain
Rock Music Concert	110	
Bus (15'), Ambulance Siren (100')	100	Very Loud
Boiler Room Printing Press Plant	90	
Garbage Disposal (3'), Freeway (100')	80	
Freight Cars (100')	70	Moderately Loud
Vacuum Cleaner (10') , Department Store Speech (1')	60	
Light Traffic (100') Business Office	50	
Typical Home Interior Typical Home Exterior (Nighttime)	40	Quiet
Quiet Bedroom Soft Whisper	30	
	20	
Mosquito (5')	10	Threshold Of Hearing

Source: Illingworth and Rodkin, Inc. /Acoustics – Air Quality, 1997

Transportation facilities are Sunnyvale's main source of noise and the most difficult to control. Roadways are the major source of transportation noise, followed by Moffett Federal Airfield, the CALTRAIN corridor and San Jose International Airport. See the 2010 Noise Contour Map in Figure 6-4.

The Noise Condition map shows projected noise contours for the year 2010 for major roadway and railroad noise sources in Sunnyvale. These noise contours represent an average noise level over a 24 hour period. This map can help determine if future land uses are compatible with their noise environments. If the use would be exposed to excessive noise, the City could require a detailed noise study that shows existing and future noise levels along with methods to achieve acceptable noise levels.

Measuring Noise: Sounds are measured in decibels (dB). The decibel scale is logarithmic with the following characteristics:

A change of one dB cannot generally be heard

A change of three dB is a just noticeable difference

A change of five dB is distinct

A change of 10 dB is heard as a doubling of noise (e.g. 70dB is twice as loud as 60 dB)

Combining two noises of the same decibel level will add three dBA to the resulting noise

(e.g. two noises at 60 dBA add up to 63 dBA, not 120 dBA)

See **Appendix F** for the technical report describing the methodology and data used to develop the 2010 Noise Condition Map (Figure 6-4) and the 1997 Noise Exposure Map (Figure 6-7).

**GOAL SN-8
COMPATIBLE NOISE ENVIRONMENT**

MAINTAIN OR ACHIEVE A COMPATIBLE NOISE ENVIRONMENT FOR ALL LAND USES IN THE COMMUNITY. *(Previously Noise Goal 3.6A/Adopted In 1997)*

What level of noise are people expected to tolerate in a residential, commercial or industrial development? Residential uses are the most sensitive. Industrial uses are the most tolerant. Tolerance also depends on how loud the noise is, when and where it happens, the duration, frequency and tone of the noise and the sensitivity of the person who hears the noise. People are generally most tolerant of existing ambient noise. They are least tolerant of single event noise, operational noise and increases in ambient noise.

Interior Noise Standards

The California Code of Regulations protects interiors of new multifamily dwellings and lodging uses from excessive noise. These requirements apply to hotels, motels, townhomes, condominiums, apartments, group care homes and all other dwellings except single-family detached homes. Interior noise levels cannot exceed an Ldn of 45 dBA with doors and windows closed and a residential site with an exterior Ldn above 60 dBA needs a detailed noise study and mitigation plan. The study must show how the dwelling will meet an interior Ldn of 45 dBA. These requirements are enforced through development review and the building permit process.

POLICY SN-8.1 ENFORCE AND SUPPLEMENT STATE LAWS REGARDING INTERIOR NOISE LEVELS OF RESIDENTIAL UNITS. *(Previously Noise Policy 3.6A.2)*

POLICY SH-8.2 APPLY TITLE 24 NOISE INSULATION REQUIREMENTS TO ALL NEW SINGLE-FAMILY DETACHED HOMES. *(Previously Noise Action Statement 3.6A.2b)*

POLICY SN-8.3 ATTEMPT TO ACHIEVE A MAXIMUM INSTANTANEOUS NOISE LEVEL OF 50 DBA IN BEDROOMS AND 55 DBA IN OTHER AREAS OF RESIDENTIAL UNITS EXPOSED TO TRAIN OR AIRCRAFT NOISE, WHERE THE EXTERIOR LDN EXCEEDS 55 DBA. *(Previously Noise Action Statement 3.6A.2c)*

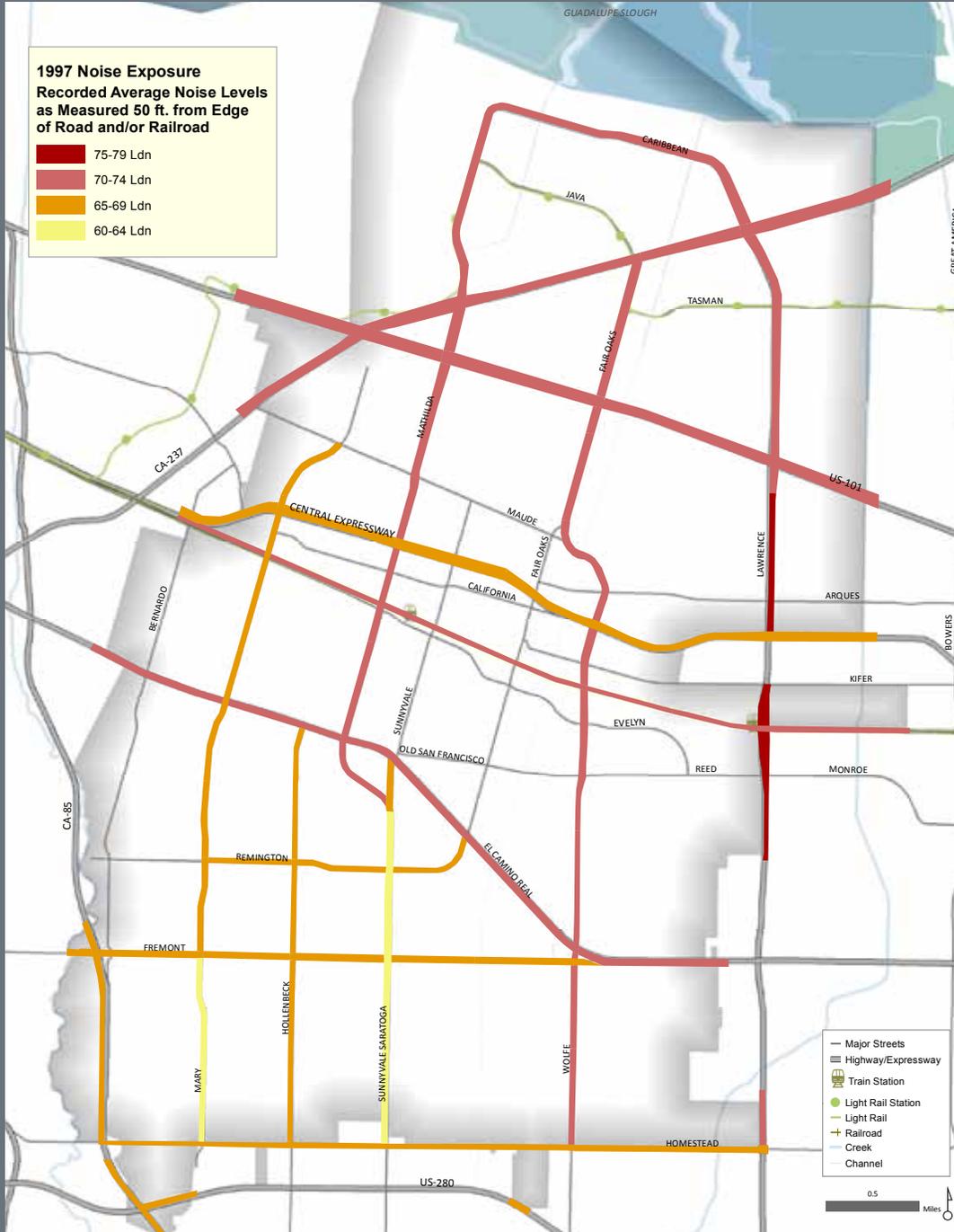


Figure 6-4 2010 Noise Conditions Map

Exterior Noise Standards

In 1976, the State of California published guidelines for noise compatible land use planning. Generally, exterior noise exposures fall into four categories: normally acceptable, conditionally acceptable and unacceptable. Each land use has a particular dBA range within each exterior noise exposure category. The following table summarizes these guidelines.

Figure 6-5 — State of California Noise Guidelines for Land Use Planning
Summary of Land Use Compatibility for Community Noise Environment

Land Use Category	Exterior Noise Exposure LDN or CNEL, DBA					
	55	60	65	70	75	80
Residential, Hotels and Motels	Normally Acceptable	Conditionally Acceptable	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Outdoor Sports and recreation, neighborhood Parks and Playgrounds	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Unacceptable	Unacceptable	Unacceptable
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches	Normally Acceptable	Conditionally Acceptable	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Office Buildings, Commercial and Professional Businesses	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Unacceptable	Unacceptable	Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Unacceptable	Unacceptable	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Industrial, Manufacturing, Utilities and Agriculture	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Unacceptable	Unacceptable	Unacceptable

-  **Normally Acceptable** — Specified Land Use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.
-  **Conditionally Acceptable** — Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features are included in the design.
-  **Unacceptable** — New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

Source: Illingworth and Rodkin, Inc. / Acoustics – Air Quality, 1997

The state Noise Guidelines indicate that all residential land uses with exterior noise levels of 60-75 dBA Ldn are “conditionally acceptable.” The City has applied this limit in plans and projects with conditions of approval that attempt to achieve a 60 dBA Ldn for backyards, large balconies and common recreation areas. These areas have a high use rate and deserve a fairly quiet setting.

Achieving an outdoor Ldn of 60 dBA if the noise source is a railroad is generally more difficult. Train noise is usually made up of relatively few loud events. Although the outdoor Ldn may be high, the noise level between events is typically acceptable for speech. An Ldn limit of 70 dBA is more appropriate for areas affected by train noise.

If the noise source is aircraft, the overhead noise is impractical to mitigate for outdoor residential areas. Preventing residential uses within areas of high Ldn from aircraft is a way of avoiding noise exposure of homes from aircraft. However, only industrial areas in the very northeast section of the City fall within a noise contour for the San Jose International Airport.

Historically, the City's demand for housing has been great. Due to the lack of alternative locations, most new residential projects are being developed near major roadways. These environments are noisy, but they must comply with Title 24 (State of California Noise Insulation Requirements) and are recommended to comply with state Noise Guidelines for Land Use Planning (see Figure 26).

In addition to reviewing proposed development for compliance with noise standards, all proposed development must be reviewed to see if it results in a "significant noise impact" on existing development. To determine if a proposed noise increase is considered "significant" under CEQA, the following standards should be used.

Figure 6-6 — Significant Noise Impacts from New Development on Existing Land Use

Ldn Category of Existing Development Per Figure 6-4	Noise Increase Considered "Significant" over Existing Noise Levels
Normally Acceptable	An increase of more than 3 dBA and the total Ldn exceeds the "normally acceptable" category
Normally Acceptable	An increase of more than 5 dBA
Conditionally Acceptable	An increase of more than 3 dBA
Unacceptable	An increase of more than 3 dBA

POLICY SN-8.4 PREVENT SIGNIFICANT NOISE IMPACTS FROM NEW DEVELOPMENT BY APPLYING STATE NOISE GUIDELINES AND SUNNYVALE MUNICIPAL CODE NOISE REGULATIONS IN THE EVALUATION OF LAND USE ISSUES AND PROPOSALS. (Previously Noise Policy 3.6A.1)

See San Jose International Airport's website at www.sjc.org for noise contour maps.

POLICY SN-8.5 COMPLY WITH "STATE OF CALIFORNIA NOISE GUIDELINES FOR LAND USE PLANNING" (FIGURE 6-4) FOR THE COMPATIBILITY OF LAND USES WITH THEIR NOISE ENVIRONMENTS, EXCEPT WHERE THE CITY DETERMINES THAT THERE ARE PREVAILING CIRCUMSTANCES OF A UNIQUE OR SPECIAL NATURE. *(Previously Noise Action 3.6A.1c)*

POLICY SN-8.6 USE FIGURE 6-6, "SIGNIFICANT NOISE IMPACTS FROM NEW DEVELOPMENT ON EXISTING LAND USE" TO DETERMINE IF PROPOSED DEVELOPMENT RESULTS IN A "SIGNIFICANT NOISE IMPACT" ON EXISTING DEVELOPMENT. *(Previously Noise Action Statement 3.6A.1d)*

POLICY SN-8.7 SUPPLEMENT FIGURE 6-4, "NOISE AND LAND USE COMPATIBILITY GUIDELINES" FOR RESIDENTIAL USES BY ATTEMPTING TO ACHIEVE AN OUTDOOR LDN OF NO GREATER THAN 60 DBA FOR COMMON RECREATIONAL AREAS, BACKYARDS, PATIOS AND MEDIUM AND LARGE-SIZE BALCONIES. THESE GUIDELINES SHOULD NOT APPLY WHERE THE NOISE SOURCE IS RAILROAD OR AN AIRPORT. IF THE NOISE SOURCE IS A RAILROAD, THEN AN LDN OF NO GREATER THAN 70 DBA SHOULD BE ACHIEVED IN COMMON AREAS, BACKYARDS, PATIOS AND MEDIUM AND LARGE BALCONIES. IF THE NOISE SOURCE IS FROM AIRCRAFT, THEN PREVENTING NEW RESIDENTIAL USES WITHIN AREAS OF HIGH LDN FROM AIRCRAFT NOISE IS RECOMMENDED. *(Previously Noise Action Statement 3.6A.1f)*

POLICY SN-8.8 AVOID CONSTRUCTION OF NEW RESIDENTIAL USES WHERE THE OUTDOOR LDN IS GREATER THAN 70 DBA AS A RESULT FROM TRAIN NOISE. *(Previously Noise Action Statement 3.6B.6c)*

Techniques to Insulate People from Noise

Sound walls — Sound walls can be an effective method of reducing ambient noise on properties. Typically sound walls are used to buffer residential or other sensitive uses from transportation noise or incompatible land use operational noise. Typical sound walls (six to eight feet high) will reduce noise levels by about six to eight dBA. Sound walls are most effective at reducing noise on properties nearest the sound wall. However, sound walls can be unattractive, isolate neighborhoods and give the community a “walled-in” appearance. These effects can be minimized by landscaping and earth berms and by requiring walls that are more decorative than the standard choices.

Setbacks — Building setbacks can reduce noise if the distance is substantial. For example, a building located 50 ft. from the center of the road may have an Ldn of 64 dBA at the building façade closer to the roadway. If the building is set back 100 ft. from the center of the roadway (an additional 50 feet), the Ldn would be reduced to approximately 60 dBA, which meets the state guidelines.

Site Planning — Good site planning can buffer sensitive areas (such as bedrooms) with less sensitive areas (such as a parking structure). Conventional home building practices will reduce interior noise levels by about 15 dBA, even with the windows partially open. Other measures include double or triple pane windows, airtight doors and windows and vents oriented away from the house.

Typical sound walls (six to eight feet high) will reduce noise levels by about six to eight dBA.

See Interior Noise discussion for more information on interior sound levels.

Landscaping provides little reduction in noise levels. 100 feet of dense foliage only achieves approximately three to five dBA noise reduction.

POLICY SN-8.9 CONSIDER TECHNIQUES WHICH BLOCK THE PATH OF NOISE AND INSULATE PEOPLE FROM NOISE. *(Previously Noise Policy 3.6A.3)*

- **Action SN-8.9a** Use a combination of barriers, setbacks, site planning and building design techniques to reduce noise impacts, keeping in mind their benefits and shortcomings. *(Previously Noise Action Statement 3.6A.3a)*
- **Action SN-8.9b** Consider compiling and distributing information to residents of noise-impacted areas about what they can do to protect themselves from noise. *(Previously Noise Action Statement 3.6A.3b)*
- **Action SN-8.9c** Proposed sound walls or other noise reduction barriers should be reviewed for design, location and material before installing the barrier. Sound readings should be taken before and after installing the noise reduction barrier in order to determine the efficacy of the noise reduction barrier. Measurement techniques shall be similar to procedures used by Caltrans to measure efficiency of sound walls. *(Previously Noise Action Statement 3.6A.3c)*

**GOAL SN-9
ACCEPTABLE LIMITS FOR COMMUNITY NOISE**

MAINTAIN OR ACHIEVE ACCEPTABLE LIMITS FOR THE LEVELS OF NOISE GENERATED BY LAND USE OPERATIONS AND SINGLE-EVENTS *(Previously Noise Goal 3.6C / Adopted in 1997)*

Noise provisions in the Sunnyvale Municipal Code regulate operational noises and selected single-event noises (see the list of Implementation Plans in Appendix A). These noise regulations address complaints and concerns regarding the hours of operation and noise levels produced by certain activities and powered equipment. While the Municipal Code noise provisions address the majority of noise complaints, noise complaints in special circumstances (e.g. unusual schedules or sensitivities to certain noises) are not accommodated. In some instances, complaints about noise are difficult to resolve despite the intent and guidelines of the noise regulations.

Noise complaints that cannot be resolved through the application of code regulations are primarily due to conditions existing prior to the adoption of the 1995 noise code revisions, conditions that are not appropriate to regulate (children at child care centers) or conditions that are beyond the City’s sphere of influence (transportation noise). Despite these instances, the Sunnyvale Municipal Code addresses most community noise issues and the majority of complaints are resolved in compliance with Sunnyvale regulations.

POLICY SN-9.1 REGULATE LAND USE OPERATION NOISE. *(Previously Noise Policy 3.6C.1)*

POLICY SN-9.2 REGULATE SELECT SINGLE-EVENT NOISES AND PERIODICALLY MONITOR THE EFFECTIVENESS OF THE REGULATIONS. *(Previously Noise Policy 3.6C.2)*

POLICY SN-9.3 APPLY CONDITIONS TO DISCRETIONARY LAND USE PERMITS WHICH LIMIT HOURS OF OPERATION, HOURS OF DELIVERY AND OTHER FACTORS WHICH AFFECT NOISE. *(Previously Noise Action Statement 3.6C.1b)*

GOAL SN-10 MAINTAINED OR REDUCED TRANSPORTATION NOISE

PRESERVE AND ENHANCE THE QUALITY OF NEIGHBORHOODS BY MAINTAINING OR REDUCING THE LEVELS OF NOISE GENERATED BY TRANSPORTATION FACILITIES
(Previously Noise Goal 3.6B / Adopted in 1997)

Major Roadways

Major roadways cause most of the transportation noise in Sunnyvale. Sunnyvale has an interstate, three highways, two expressways and numerous arterial and collector streets within or near its borders. Virtually all existing homes next to freeways and expressways are protected by sound walls or depressed grades. Traffic noise is generally not an issue for commercial, office and industrial uses.

The 1997 Noise Exposure Map, Figure 6-7, shows 1997 noise levels measured 50 ft. from the edge of each major roadway. All major roadways in Sunnyvale have an Ldn of at least 60 dBA. Noise levels that range from 60 to 75 dBA Ldn are defined as “conditionally acceptable” for residential uses (see Figure 6-4, State Noise Guidelines for Land Use Planning). The Noise Exposure Map can be used to identify areas where existing and proposed uses are impacted by excessive noise.

In 1986, before sound walls were installed, 40 percent of single-family homes were exposed to “conditionally acceptable” noise levels and one percent of single-family homes were exposed to “unacceptable” noise levels (over 75 dBA Ldn). It was projected that in the year 2010, these percentages would decrease to 20 percent of single-family homes exposed to “conditionally acceptable” noise and less than 0.1 percent exposed to “unacceptable” noise levels.

Based on roadway traffic projections, noise levels throughout Sunnyvale are not predicted to change significantly due to increases in roadway traffic. Generally, a three dBA Ldn or greater change in noise level is considered “significant” because it can be noticed by the human ear. Most homes will continue to have acceptable noise levels in the future. For individual roadway projects, potential noise impacts are evaluated on a case-by-case basis. Despite the traffic noise, noise levels are considered “normally acceptable” for most homes today and most homes will continue to have normally acceptable noise levels in the future. Non-residential uses will generally be unaffected by current and future traffic noise.

Refer to Figure 6-4, State of California Guidelines for Land Use Planning for a list acceptable, conditionally acceptable and unacceptable noise standards for various land uses.

Generally, a three dBA Ldn or greater change in noise level is considered “significant” because it can be noticed by the human ear.

POLICY SN-10.1 REFRAIN FROM INCREASING OR REDUCE THE NOISE IMPACTS OF MAJOR ROADWAYS. *(Previously Noise Policy 3.6B.1)*

- **Action SN-10.1a** Identify and mitigate roadway noise impacts as part of local land use plans and proposals. *(Previously Noise Action Statement 3.6B.1a)*
- **Action SN-10.1b** Regulate the location, design and capacity of local roadway improvement projects to mitigate their noise impacts. *(Previously Noise Action Statement 3.6B.1b)*
- **Action SN-10.1c** Use local traffic management techniques to reduce or protect noise levels. *(Previously Noise Action Statement 3.6B.1c)*
- **Action SN-10.1d** Support state legislation to reduce vehicle noise levels. *(Previously Noise Action Statement 3.6B.1f)*

Airports and Aircraft-Related Noise

Moffett Federal Airfield

Moffett Federal Airfield (MFA) is now operated by the National Aeronautics and Space Administration (NASA). In 1995, approximately 24,000 annual aircraft flight operations (a take-off and a landing are each considered to be one flight operation) occurred at MFA. Other noise sources at MFA include wind tunnel facilities and the Outdoor Aerodynamic Research Facility.

In 1976, when the Navy operated Moffett Field, the U.S. Department of Defense prepared guidelines which identify suitable land uses in an area impacted by high noise and potential accidents. These guidelines are part of an Air Installation Compatible Use Zone (AICUZ) study. Noise contours were updated in 1982. The AICUZ Map displays federal guidelines for and uses near the Naval Air Station (NAS) at Moffett Field. Since the Navy no longer operates Moffett and the number and character of flights are different, the AICUZ study is considered an informational document.

San Jose International Airport

Residents in northeast Sunnyvale are affected by San Jose Airport flight patterns. By 2010, they may hear twice as many aircraft as they did in 1995. However, noise levels will eventually stabilize and decrease as quieter aircraft become prevalent. Current and future noise levels are below state limits.

Helicopters

There are no heliports located in Sunnyvale. As of 1996, Santa Clara County has only six heliports. One is open to the public at San Jose International Airport. The others are restricted to private use by companies, hospital/medical uses, executives and other individuals.

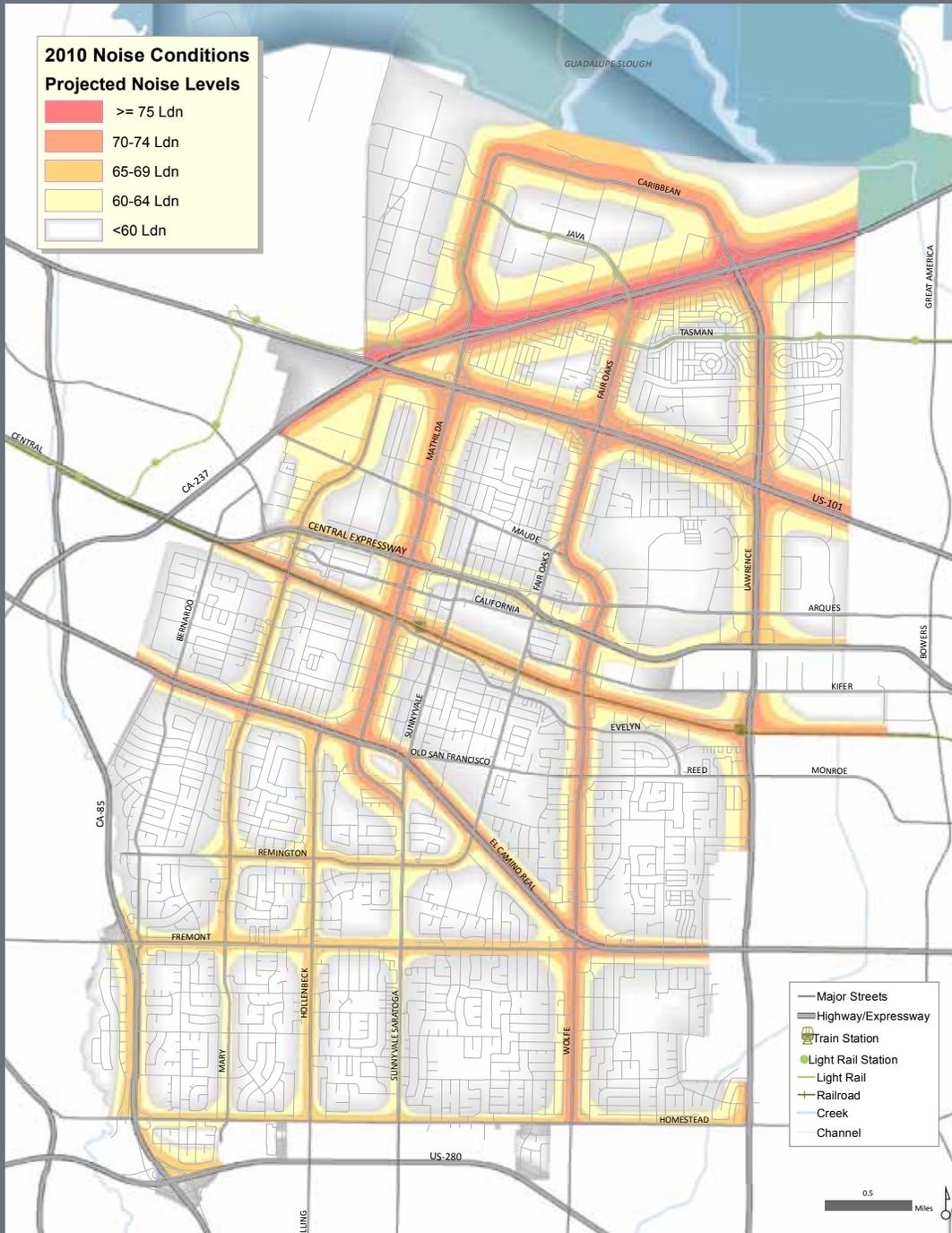


Figure 6-7 — 1997
Noise Exposure Map

The Airport Land-Use Commission (ALUC) was established to provide for appropriate development of areas surrounding public airports in Santa Clara County. It is intended to minimize the public's exposure to excessive noise and safety hazards and to ensure that the approaches to airports are kept clear of structures that could pose an aviation safety hazard.

The Airport Land Use Commission has developed noise standards for heliports affecting residential uses. Design and location criteria for any new private use heliports require permits from the ALUC and affected cities.

In 1995, there were approximately 6,000 helicopter flight operations at MFA. One of the take-off and landing patterns crosses over Sunnyvale. It mainly crosses over industrial land uses but also some residential land uses.

POLICY SN-10.2 SUPPORT EFFORTS TO REDUCE OR MITIGATE AIRPORT NOISE, INCLUDING NOISE IMPACTS OF MOFFETT FEDERAL AIRFIELD, SAN JOSE INTERNATIONAL AIRPORT AND HELICOPTERS. *(Previously Noise Policies 3.6B.2, 3.6B.3, 3.6B.4 and 3.6B.5)*

- **Action SN-10.2a** Support the retention of the Airport Land Use Commission. *(Previously Noise Action Statement 3.6B.2a)*
- **Action SN-10.2b** Support the right of private citizens to sue airports for noise impacts. *(Previously Noise Action Statement 3.6B.2b)*
- **Action SN-10.2c** Encourage airport operation policies and procedures which reduce the level and frequency of noise as well as other policies and federal funding to alleviate the effects of aircraft noise. *(Previously Noise Action Statement 3.6B.2c)*
- **Action SN-10.2d** Support federal legislation that requires military and federal aircraft to meet Stage 3 noise requirements similar to commercial aircraft. *(Previously Noise Action Statement 3.6B.3i)*
- **Action SN-10.2e** Support state legislation to lower the noise levels of civilian aircraft and airports. *(Previously Noise Action Statements 3.6B.4g and 3.6B.4h)*

POLICY SN-10.3 OPPOSE ANY EFFORT AND/OR EXPENDITURE OF PUBLIC FUNDS TO PROMOTE MOFFETT FEDERAL AIRFIELD FOR NON-FEDERAL PURPOSES. *(Previously Noise Action Statement 3.6B.3g)*

Trains and Light Rail

Central Sunnyvale has a Caltrain heavy-rail corridor running east-west. The rail is used by both commuter trains during the day and freight train operations. Unscheduled freight operations can happen at any time, but typically occur at night. Sunnyvale also has a light rail transit in the northern part of the City along Tasman and Java Drives. Nearby surrounding uses are mobile home parks, multifamily residential uses and industrial areas.

Train Noise

There are two main sources of train noise — engine noise and train horn noise. Train horns blow at the Mary Avenue and Sunnyvale Avenue at-grade rail crossings and the two local stations (Downtown Sunnyvale and Lawrence Station). In 1996, the areas affected by train noise had an Ldn of 71-73 dBA at 50 ft. from the tracks (see Figure 6-7, 1997 Noise Exposure Map). Maximum noise events could reach 90 dBA (engines) and 105 dBA (horns).

These noise levels are acceptable for all but approximately 80 homes near the tracks which experience “conditionally acceptable” noise levels. Some of these homes are exposed to excessive outdoor noise (above 70 dBA Ldn) and probably excessive interior noise as well (above 45 dBA Ldn). These noise levels are generally acceptable for non-residential uses.

Freight train operations are not likely to expand. There are few major rail shippers left on the railroad line and heavy industry on the Peninsula and in San Francisco is in decline. Commuter passenger service is now the primary use of the railroad line.

Commuter train operations are likely to continue and expand. Plans to increase service could increase the noise levels by a noticeable three dBA. Possible electrification of the route could reduce existing Ldn by as much as eight dBA. Because of the uncertainty of these plans these conditions are not noted on the Noise Condition map. Sunnyvale has no jurisdiction over the number or noise level of trains, but actions can be taken to monitor and mitigate future noise events.

Light Rail Noise

Light rail noise is generally less than train noise. Noise and vibration studies completed as part of an Environmental Impact Report/Statement for the construction of the Light Rail Project indicated that barriers should be provided to guard against wheel squeal. No excessive noise impacts are expected for residents in these areas.

POLICY SN-10.4 MITIGATE AND AVOID THE NOISE IMPACTS FROM TRAINS AND LIGHT RAIL FACILITIES. *(Previously Noise Policies 3.6B.6 and 3.6B.7)*

- **Action SN-10.4a** Monitor plans and projects which would increase the number of commuter or freight trains and evaluate their noise impacts and seek mitigation for any change that worsens local conditions. *(Previously Noise Action Statement 3.6B.6a and 3.6B.6b)*
- **Action SN-10.4b** Educate owners of older homes on ways to reduce noise levels from trains. *(Previously Noise Action Statement 3.6B.6d)*

- **Action SN-10.4c** Support legislation to reduce the noise level of trains. *(Previously Noise Action Statement 3.6B.6e)*
- **Action SN-10.4d** Seek the cooperation of train engineers to avoid unnecessary and prolonged use of air horns except for safety purposes. *(Previously Noise Action Statement 3.6B.6f)*
- **Action SN-10.4e** Monitor regional plans for light rail facilities in Sunnyvale to ensure that noise impacts are identified and mitigated. *(Previously Noise Action Statement 3.6B.7a)*

