13 SAFETY AND HAZARDS

This Chapter presents data on the extent of flooding, fire, and seismic hazards, as well as on airport safety, hazardous waste and materials, and emergency evacuation. Additional topics related to safety and hazards are discussed in Chapter 8.2 Public Services and Facilities (fire and police protection), Chapter 8.3 Utilities (water supply and delivery system), Chapter 10.2 Geology and Soils, and Chapter 10.3 Hydrology and Water Quality.

13.1 FLOODING

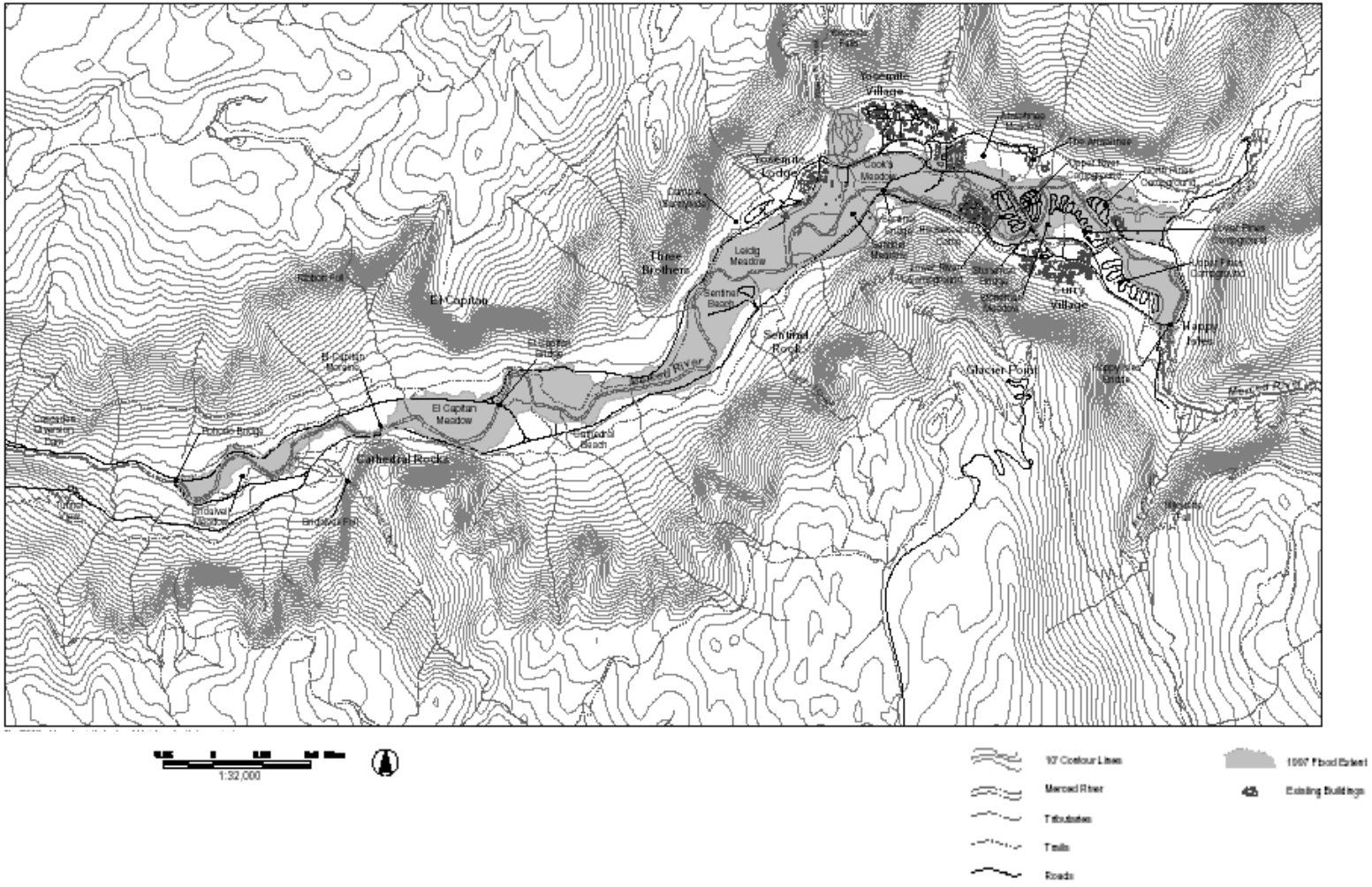
Mariposa County is part of the western Sierra Nevada watershed. The northern part of the county drains to the Merced River and its tributaries while the remainder of the county drains to Mariposa, Bear, and Owens Creeks. Due to the steep terrain, hazards from flooding are relatively low in the County. However, there has been localized flooding in areas of low elevation and in areas where stream channels are not well defined. Snowmelt run-off and heavier-than-usual rains increase the possibility of flooding in these areas. Maps published in September 5, 1990 by the Federal Emergency Management Agency (FEMA) have delineated potential flood hazard areas. The Model Mountain County Development Program, prepared by Mariposa County during 1979 and 1980 to evaluate physical development constraints, identified possible flood hazard areas have been identified in the urbanized areas of Mariposa, El Portal, Coulterville, Wawona, and Hornitos.

Floodplains are defined as low-lying level lands adjacent to ponds, lakes, and rivers that could overflow. When rivers are constricted to channels, the height and velocity of the water will rise rapidly in response to storms. However, when a river overflows its banks and enters a floodplain, the floodwaters spread out - losing most of their velocity and capacity for rising in the process. The floodplains defined in the maps published by FEMA refer to those areas where there is a one-percent chance of a flood occurring in any given year (100-year flood). The area impacted by the 1997 flood in the Yosemite Valley is provided in Figure 13-1.

If a floodplain is undeveloped, the hazards of flooding to humans are usually limited. However, when human development is present, floodwaters can threaten property and personal safety. In addition to causing a potential hazard to people and property, development in flood prone areas can affect river flows upstream and downstream. FEMA encourages local agencies to adopt the policy of avoiding development in the 100-year floodplain unless it is the only practical development alternative.

Potential flooding concerns include: possibility of damage to homes and other structures that already exist in floodplains; increasing urbanization and development pressures within floodplains or along watershed drainage channels; further erosion along established stream channels; sedimentation into stream channels caused by cut and fill activities associated with structural and road development; and, potential development below dams, which might be subject to flooding caused by dam failure.

Figure 13-1: 1997 Flood Extent in Yosemite Valley



In January 1997, the largest flood in over 80 years occurred on the Merced River. In addition to a heavier-than-normal snowmelt, the flood was the result of a series of tropical storms that dropped over ten inches of rain from December 29 to January 3. The force of the flood damaged roads, sewer lines and campgrounds within Yosemite National Park. Yosemite formed a multi-agency incident team to evaluate the consequences of the flood and to prepare a plan to address flood hazards. The team determined that although floods are a natural occurrence, the 1997 flood was "tempered somewhat by the impacts to human developments in the floodplain" (Smillie, Jackson, and Martin).

The flood brought scrutiny to the practice of human occupation and development in floodplains. In accordance with the National Park Service (NPS), which has specific management policies for preservation of floodplains and wetlands and local, county, and state requirements, the Yosemite Valley Plan EIR/EIS (November 1999, Section 4, paragraphs 16 and 17) presents standards for evaluating development in flood-prone areas. The Final Yosemite Valley Plan EIR/EIS follows the methods for minimizing flood damage in the National Flood Insurance Program "Floodplain Management Criteria for Flood-Prone Areas" (44 CFR 60.3). As a result of the evaluation of the 1997 flood, the Park decided to use the January 1997 flood line to determine the 100-year floodplain in the west end of Yosemite Valley.

13.2 DAMS

Exchequer Dam was built on McClure Lake in the 1920's, approximately five miles from Merced Falls. In 1965 and 1966, the capacity of the Exchequer reservoir was enlarged from less than 400,000 acre-feet to over 1,000,000 acre-feet. Flood control dams have been built on Mariposa, Owens, Bear and Burns Creeks to prevent storm damage to lands in Merced County. In addition, there are the Green Valley Dam, Hendricks Dam, Mariposa Pines Dam, McMahon Dam, McSwain Dam, Metzger Dam and the Stockton Creek Dam. All of these dams have been identified as requiring monitoring for downstream development. The dam at Lake Don Pedro, although not within Mariposa County, is located just outside the northwestern portion of the County, and dam failure at Don Pedro would impact portions of Mariposa County..

13.3 FIRE

Wildfires are an essential part of many wilderness ecosystems in California. Wildland vegetation must burn periodically in order to survive and grow by cleansing the forest of disease and insects, thinning stands of wood, recycling nutrients otherwise held in vegetation, and creating snags that serve as wildlife habitat.

Although fires are a necessary part of many ecosystems, they nevertheless can be imminently dangerous to human populations. In addition, wildfires increase the potential for soil erosion and sedimentation and impact air quality.

The greatest risk of wildfires occurs when people choose to live in fire prone areas. While wildfires are caused by both natural and human means, human error has historically been the cause of most large fires in Mariposa County. Human activities that can cause fires include brush clearing, campfires, automobiles, cigarettes, and arson. Lightning is the most common natural cause of fires. Table 13-1 describes the causes of large fires (greater than 300 acres) that occurred in 1999 and 2000 in Mariposa County (California Department of Forestry).

With only one exception (an incident that is still under investigation), all of the fires are known to be caused by human activities.

Table 13-1: 1999-2000 Large Fires

Ranger Unit	Fire Name	Start Date	Acres Burned	Cause	Structures Damaged
Madera/ Mariposa	Andrews	01/09/99	5,000	Vehicle	0
Madera/ Mariposa/ Merced	Romero	06/18/99	2,000	Under Investigation	0
Madera/ Mariposa/ Merced	Roadside 9323	07/08/99	2,400	Arson	0
Madera/ Mariposa/ Merced	49	07/13/99	395	Electric Power	0
Madera/ Mariposa/ Merced	Coulterville	8/30/99	700	Arson	0
Mariposa	Granite	07/02/00	2,000	Shooter	0
Mariposa	Hunter	8/27/00	8,084	Equipment Use	6

Source: California Department of Forestry, January 3, 2001.

Most of the wildfires in Mariposa County occur in areas where developed land borders the wilderness. These areas are typically overgrown, creating large amounts of combustible fuel that will feed fires. The County has programs to limit fuel levels, clear and manage overgrown brush, and educate the community on fire prevention. The County Fire Safe Council works with local communities to discuss and implement fire prevention and management strategies. In addition, the California Department of Forestry has established minimum fire safety standards for all new construction (19 CCR §§ 1.00-2352) that include road standards for fire equipment access, standards for signs identifying streets, roads, and buildings, minimum private water supply reserves for emergency fire use, and fuel brakes and greenbelts.

Terrain and vegetation type can also play an important role in the frequency of fires. Isolated mountainous areas can hinder fire-fighter response times, and canyons and ravines can act as fire corridors. Mariposa County is covered by a combination of grasslands, chaparral, and forests that become very flammable in dry months. Fire is a natural component of chaparral communities, with an average "fire-cycle" of once every 30-35 years (Barro, 1987). Fire danger in the County is also present in winter months due to the wind's ability to evaporate moisture from chaparral within a few days.

13.3.01 CALIFORNIA DEPARTMENT OF FORESTRY

The California Department of Forestry and Fire Protection (CDF) has mapped the fire hazard areas in the County, delineating wildland areas that may contain substantial forest fire risks and hazards, and also areas that are in very high fire hazard severity zones (1992-1993 Session of the California State Legislature).[5] Approximately half of the county lies in areas

[5] An act to add Chapter 6.8 Very High Fire Hazard Severity Zone (commencing with Section 51175) to Part 1 of Division 1 of Title 5 of Government Code, and to amend Section 13108.5 of the Health and Safety Code, relating to fire protection.

that may contain substantial forest fire risks and hazards, namely the southern and southwest portion of the county (see

Figure 13-2). This portion of the county consists primarily of chaparral communities and is prone to high winds.

The majority of development has occurred in the southern and southwest part of the county, including the towns of Mariposa and Coulterville, and lies within the areas delineated in the CDF map as potentially containing substantial forest fire risks and hazards.

FIRE SERVICES

Loss of property and life due to wildland and domestic fires is a primary concern of the local, state and federal agencies that share Mariposa County's wildlands fire protection responsibilities. The CDF is responsible for fire protection in all privately owned lands that are wildlands, grasslands, or timber production areas. At the federal level, the U.S. Forest Service and the National Park Service protect the national forests and Yosemite National Park at the federal level. The Federal, State, and County agencies have an agreement to mutually assist each other in cases of fires located on the boundaries of their jurisdictions. Mariposa County Fire Department protects the developed population centers. The County Fire Department provides management, training, and inspection services. The actual fire protection activities are carried out by County volunteer fire departments, the Mariposa Public Utility District within the district's boundaries inside the Mariposa Town Planning Area, and the CDF. However, services from the CDF could be limited at times. The CDF reassigns their firefighters during the summer months to major out-of-County fires and reduces their staff during the wet season.

There is concern regarding the multi-agency arrangement due to increasing population and development. Development of lands further from population centers and towns increases response time for fire services. There is great demand for development of land beyond the 15-minute response time of existing fire services. Proximity to volunteer fire units is a key factor in rural areas served by unimproved roads.

The level of service currently provided by the County's all-volunteer fire-fighting force, as well as the adequacy of water supply and delivery for fire protection, are primary concerns in areas subject to wildland fires. Please see Section 8.2, Public Services for a more detailed discussion of fire-fighting levels of service, and .Section 8.3, Utilities for a discussion of the adequacy of the water supply and delivery system.

13.4 SEISMIC HAZARDS

The potential for earthquakes and related seismic hazards exist throughout Mariposa County. Evidence of the geological forces that cause earthquakes is abundant in the hills and mountains that define most of the County. Earthquake hazards include ground shaking, land and mudslides, seiche (large waves in closed bodies of water), and liquefaction (loss of structural integrity of sediments below the water table). In the major canyons where granite formations and outcroppings occur, earthquakes also have the potential to cause rockslides and sloughing.

The California Department of Conservation is mandated by the Seismic Hazards Act of 1990 to identify and map the state's most prominent earthquake hazards in order to help avoid damage resulting from earthquakes. The Department's Seismic Hazard Zone Mapping Program charts areas prone to liquefaction (failure of water-saturated soil) and earthquake-induced landslides throughout California's principal urban and major growth areas. Areas identified and mapped by the Department are commonly referred to as "Special Studies Zones," which must be identified in the General Plan. According to the Department of Conservation, there are no special study zones mapped in the County.

There are two fault zones located in the County, the Bear Mountain on the western edge and the Melones on the eastern edge. These compromise the Foothills Fault System and were thought to be inactive until the Oroville Earthquake occurred in 1975 along the Bear Mountain Fault zone. Based on the Oroville Earthquake, and other geologic findings in the northern part of the system, the Foothills Fault System is considered active. The Five-County Seismic Safety Study, developed in July, 1974, by Fresno, Kings, Madera, Mariposa and Tulare Counties, reported three other faults known to be active near Mariposa County: the San Andreas fault to the West, the Owens Valley fault to the east, and possibly the White Wolf fault to the south. According to the Study, the three faults may cause small periodic local earthquakes (see Figure 13-3).

The Bear Mountain Fault zone runs under Lake McClure and a portion of Exchequer Dam ending about 2 ½ miles east of Hornitos. The Melones Fault Zone runs through the County along Highway 49 through Coulterville, Bagby, east of Bear Valley, Mt. Bullion, and the town of Mariposa, terminating in the Mormon Bar area. Additionally, mapping indicates a fault running southeasterly from Texas Hill Road to Mariposa Pines (see Figure 13-3).

The Modified Mercalli Intensity Scale is shown on Table 13-2. This scale describes the effects on property, the environment, and human perceptions of the intensity of ground shaking at increasing levels of earthquake induced motion. The Modified Mercalli Intensity Scale has been used for several decades as a way of gauging the effects of earthquakes.

Almost all of Mariposa County falls within the lowest earthquake hazard zone of 10-20 percent probability. As shown in Figure 13-4, the northeastern-most portion of the County falls within the second lowest hazard zone of 20-30 percent earthquake probability. No earthquakes with a magnitude above 5.0 have occurred in Mariposa County between 1800 and the present. There were a number of earthquake incidents in 1997, but all were of magnitude 2.7 or less. The majority of the County falls within the low-risk category for seismic activity.

Figure 13-2: Fire Hazard Map

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Figure 13-3: Earthquake Fault System

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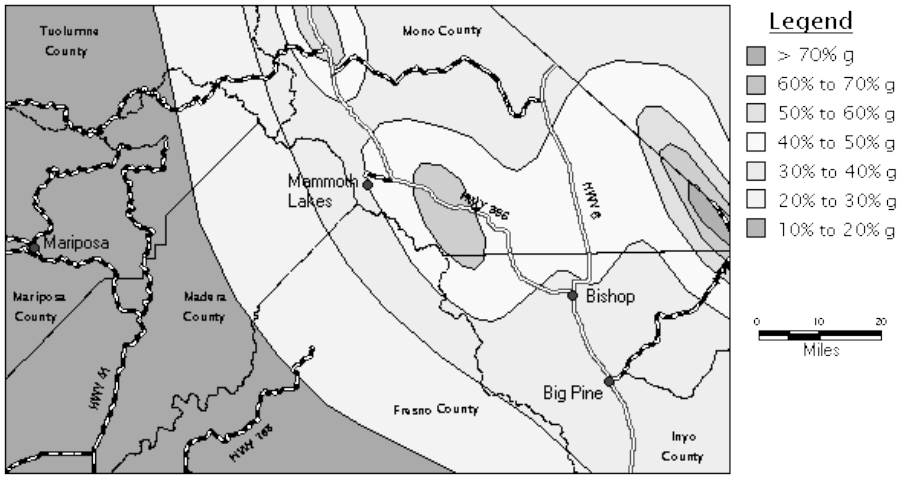
Table 13-2: Modified Mercalli Intensity Scale

Rating	Description of Damage or Human Perception
I.	Not felt except by a very few under especially favorable circumstances.
II.	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended object may swing.
III.	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.
IV.	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.
V.	Felt by nearly everyone, many awakened. Some dishes, windows, and so on broken; cracked plaster in a few places; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI.	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster and damaged chimneys. Damage slight.
VII.	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving cars disturbed.
IX.	Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X.	Some well built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks.
XI.	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII.	Damage total. Waves seen on ground surface. Lines of sight and level distorted. Objects thrown into the air.

[1]Abridged Modified Mercalli Intensity Scale (1956 version)

Figure 13-4: Probabilistic Seismic Hazards

Peak Ground Acceleration Atlas



Source: http://www.conservation.ca.gov/dmg/rghm/psha/atlas/Mariposa.htm

There are a few areas of moderate risk on the western border and an area of high risk near the town of Mariposa, extending northwest to Tuolumne County. These areas are considered moderate to high-risk areas because the Foothills Fault System, New Melones Fault Zone, and Bear Mountain Fault Zone are located in central and western portions of the County (California Geological Survey). In addition to the potential result of fault zone movement, ground shaking, landslide and seiches, Mariposa County also has more frequent occurrences of landslides and rockslides caused by excessive saturation of loosely compacted soils during the wet months, usually on steep grades or road cuts.

13.4.01 SECONDARY HAZARDS

Secondary hazards are created after the initial earthquake has struck. These hazards include ground shaking, landslides, liquefaction and seiches. Although the Five County Seismic Safety Study considered the secondary seismic hazards to be minimal, they did report that significant geological problems exist in some sub-regions and should be investigated. Since Mariposa County has frequent landslides and rockslides during the wet months, secondary hazards are a concern.

GROUND SHAKING

According to the Five County Study, wood frame structures less than two stories may be considered safe; masonry structures built prior to 1933 may be considered dangerous; and in all cases, unreinforced masonry buildings may be considered hazardous. The Uniform Building Code[6] classifies mortar construction requirements, in terms of seismic risk load resistance, for Seismic Zones 0 through 4. The Seismic Zone S-1 and S-2 mortar mixture is appropriate for groundshaking in areas of low to moderate in damage potential. For areas in close proximity to the Owens Valley Fault, the potential hazard is moderate to high and would require mortar construction of S-3 or higher.

[2] Evaluation Report, ER-3759, reissued December 1, 1998, International Conference of Building Officials.

LANDSLIDES AND MUDSLIDES

Landslides are primarily a wet season hazard along County Roads and State Highways, although they are also a hazard for any development near steep slopes. Other landslide factors include rock types that are susceptible to sliding; steep, irregular hill slopes; thick accumulations of expansive soils; heavy rainfalls during winter months; slopes that have been modified by development activity; undermining of slopes by streams and rivers; and earthquakes. Landslides on roads can cut off emergency evacuation routes, impede access to emergency vehicles, and strand residents in or away from their homes.

The Five County Study performed a generalized landslide risk appraisal and found that there was minimal risk of landslides caused by earthquakes in areas of low relief. The study found moderate to high risk in the remaining mountainous areas of the County. Most of the soils found in the County have minimal amounts of clay and low shrink-swell potential and do not result in landslide hazards. However, the soils found in the hills along Highway 49 (HaG – Henneke extremely rocky clay loam) have a high risk of sliding, and are a special concern. The middle and eastern portions of Yosemite National Park are closer to the Owens Valley Fault and were also found to be at a greater risk of landslide hazards.

The Department of Conservation (California Geological Survey) is responsible for mapping landslide hazard area, which are primarily located along coastal areas and coastal mountain ranges, for use with timber harvesting plans. No mapping of landslide hazards has been completed for Mariposa County.

LIQUEFACTION

Liquefaction is a process by which sediments below the water table temporarily lose strength and behave as a viscous liquid rather than a solid. Liquefaction usually occurs due to an earthquake, when there is a sudden but temporary increase in the fluid pressure between the soil grains. When the soil is acting as a liquid, structures are in danger of sinking or tilting. The amount the structures move depends on how viscous the liquefied soil is and how long it remains liquefied. All available data indicate that the dangers of liquefaction are minimal in Mariposa County.

SEICHE

A seiche is a periodic oscillation of a body of water such as a river or lake resulting from seismic or other causes. The period of the oscillation may vary from a few minutes to several hours. Lake McClure is the only large body of water in Mariposa County that could potentially be affected. In addition, the effect from a seicheal at Lake Don Pedro, though outside the County, would impact the local area. There are several private residences near the lake, however the Model Mountain County Development Program reported damage potential primarily to boats or houseboats. If any of the dams in the county were either improperly constructed or in bad repair, seiches have the potential of intensifying those weaknesses.

AIRPORT SAFETY

13.4.02 LOCATION AND TYPE

Serving Mariposa County and the eastern half of Madera County, the Mariposa-Yosemite Airport is the only public airport located in Mariposa County. It is in the west central portion of the County, approximately four miles northwest of the Town of Mariposa. It is classified in the National Plan of Integrated Airport Systems as a General Aviation – Basic Utility Airport. The airport has one runway with an adjacent full-length taxiway. It caters primarily to aircraft with single-wheel landing gear that weigh up to 12,000 pounds; however, heavier aircraft have used the runway. While the most common type of aircraft using the airport is single engine fixed-wing general aviation aircraft, some twin-engine aircraft and helicopters also utilize it.

According to the Mariposa-Yosemite Airport Comprehensive Land Use Plan, the Airport operates under Visual Flight Rules (VFR) conditions and is equipped with Visual Approach Slope Indicators (VASI-2) on both runway ends. The Mariposa-Yosemite Airport is an uncontrolled airport in uncontrolled Class G airspace extending from the surface up to the overlying controlled Class E airspace with begins 1,200 feet above the surface.

13.4.03 LAND USE

The airport is located within the Mount Bullion Town Planning Area (TPA) and the airport is the major land use in the TPA. Agriculture also occupies large areas in the vicinity of the airport; however, that use has been declining in recent years it has been replaced by rural residential and recreational development. The airport influences development policies in the TPA, restricting building height, and ensuring compatible uses in areas surrounding the airport. Land uses outside the TPA are designated by the County General Plan. The areas immediately north and east of the TPA allow residential development on 20 to 40 acre parcels. In the areas south and west of the airport are residential uses on smaller 2.5 to 5 acre parcels are allowed (see Figure 13-5).

13.4.04 SAFETY ZONES

Land use compatibility standards have been established in the Mariposa-Yosemite Airport Comprehensive Land Use Plan to provide consistency with the County General Plan. The land uses, described in the following table, have been classified into three safety zones surrounding the Airport. These safety zones are intended to protect people from hazards and prevent property damage.

Table 13-3: Safety Zones

Safety Zone	Permitted Land Uses	Specifically Excluded Land Uses
A	Golf courses (but not club houses) and agricultural operations (other than forestry or livestock farms).	No structures are allowed.
B	Agricultural, commercial and industrial uses provided maximum structural coverage is less than 50 percent of total land area and population density is no more than 50 persons per acre at any time. Residential uses are allowed at densities up to one residential unit per 2.5 acres. Clustering of development is encouraged to avoid placing structures within the Zone.	Industries involved in flammable materials or processes, major public utility distribution centers, hotels, motels, restaurants, bars, schools, hospitals, government services, concert halls, auditoriums, stadiums, arenas or other use intended as a place for the general public to gather.
C	Generally, all uses permitted by existing zoning are allowed. Residential uses are allowed at densities up to four residential units per acre. Residential uses and places of public assembly should be clustered so as to avoid placing structures under the most heavily used flight patterns.	

Source: Mariposa-Yosemite Airport Comprehensive Land Use Plan, Aries Consultants Ltd., April 1995.

Figure 13-5 illustrates the Safety Zone boundaries. Zone A covers the area 200 feet from each of the runway ends. It is intended to protect people and property from potential accidents during take off and landing. The zone requires that the area be clear of structures and incompatible objects and activities. Zone B addresses safety concerns in the approach and departure corridor. The intent is to create an open space corridor on the ground under the major flight tracks in case of an emergency landing. This zone begins at the ends of Zone A and extends out approximately 5,200 feet. Zone C addresses safety concerns under the aircraft traffic pattern and over-flight areas. While flying in this zone, the planes should be at an elevation of approximately 1,000 feet and would have more time to execute an emergency landing.

13.4.05 NOISE

According to the Land Use Plan, hearing damage from airport noise is not considered to be a hazard for nearby neighbors because noise levels are not of sufficient intensity to cause such damage. To be consistent with the County standard, a 55 Community Noise Equivalent Level (CNEL) noise contour has been established extending approximately 3,200 feet east and 5,700 feet west of State Highway 49. This contour is intended to protect residents from potential harm of excessive noise. There are 250 acres zoned Mountain Home (MH) located between the 55 and 60 CNEL (between Old Toll Road and Mt. Bullion TPA). Even if this area realized full build-out potential of 50 residential units, this use is still compatible with County guidelines.

13.5 HAZARDOUS MATERIALS AND HAZARDOUS WASTE

The Mariposa County Comprehensive Hazardous Waste Management Plan and Environmental Impact Report was prepared for the County Health Department in November 1988. The County Health Department is responsible for the enforcement of hazardous waste regulations and related laws. The Management Plan is intended to be a guide for the reduction, treatment, recycling, and disposal of hazardous waste generated in Mariposa County. Mariposa County has a County Landfill and four transfer stations; however, none of these sites accept hazardous waste. Due to the fact that there are no commercial or public hazardous waste treatment, storage, disposal, or recycling facilities within Mariposa County, all hazardous waste is exported out of the county.

Pursuant to the California Code of Regulations (19 CCR §2729-2732) and §25503 of the Health and Safety Code, the Mariposa County Health Department has developed a Hazardous Material Business Plan program. The program tracks businesses and facilities that handle hazardous materials or mixtures containing hazardous materials if they exceed 500 pounds of solid, 55 gallons of liquid, or 200 cubic feet of gas. The Business Plans are kept on file in both the County Health Department and the Fire Department. The Fire Department uses the plans in the case of an emergency to inform fire personnel of any potential hazards present. In March 2001, there were 123 businesses and facilities with Hazardous Material Business Plans.

Figure 13-5: Land Uses and Airport Safety Zones

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13.5.01 WASTE GENERATION

In 1986, according to the Hazardous Waste Management Plan, Mariposa County produced approximately 99 tons of hazardous waste. While there are no recent estimates of the amount of hazardous waste produced in the County, it is likely that the amount has increased significantly. Because there are no hazardous waste treatment facilities in the County, all of the waste is exported to the Merced County Landfill. Sixty-six percent of the hazardous waste in 1986 was waste oil coming from internal combustion engines and small quantity generators. Recognizing that the majority of waste produced in the County is from automobiles and other internal combustion engines, the County created centralized waste oil collection centers at the Don Pedro transfer station and at the County Landfill. In the 1998-1999 period, 7,950 gallons of waste oil was collected and it is estimated that 8,300 gallons of waste oil will be collected in the 2000-2001 period (County Public Works). The County contracts with Evergreen, a recycling company based in Richmond, California, to recycle the collected waste oil.

Small quantity generators are businesses that create less than 1,000 kilograms (approximately one ton) per month of hazardous waste. There are two small quantity industrial waste generators in the County. Both the Tavis Corp (EPA# CAD983630781) and Mariposa County (EPA# DAC983665506) have an agreement with Merced County to export their hazardous waste to the Merced County Landfill. Merced collects the waste bi-annually at the same time the household waste collection occurs. Yosemite Concession Service is the only large quantity generator in the county.

Household waste accounted for approximately 15.6 tons, with the major waste being oil and lubricants. The County landfill received approximately 11,668 tons of solid waste in the 1999-2000 period while the four transfer stations accepted 448 tons. A small portion of this waste could be considered hazardous, such as paint thinner cans and waste oil.

13.5.02 TRANSPORTATION

For the most part, Mariposa County is removed from the major transportation routes of hazardous waste in the state. Although Highway 120 and Highway 49 bisect the County, the rugged terrain and lack of secondary access routes (in case of emergency) are not convenient or safe for trucking. In addition, commercial trucks are prohibited from using any State highway through Yosemite National Park.

13.5.03 CONTAMINATED SITES

Although there are no contaminated sites that are on the EPA's National Priority List of Superfund sites, there have been several small, contaminated sites located within the County (Figure 13-6). Two sites were discovered in 1987 when fires uncovered the remains of an old logging/lumber operation. The primary contaminant on the sites was hydrocarbon residues in the soils. Yosemite Concession Services within the National Park has also identified several potential contaminated sites.

Underground storage tanks (USTs) are another concern regarding contaminated sites. The County Health Department has an underground storage tanks program. The program ensures that all USTs meet current state regulations and are inspected and permitted on an annual

basis. In March 2001, there were 87 USTs, each with its own identification number. The County Health Department is responsible for identification of any leaking USTs.

13.5.04 WASTE REDUCTION

The County has taken steps to reduce hazardous waste although there are no specific programs in place. Household waste reduction has been addressed through public information and education about conservation and re-use. There are also bi-annual household hazardous waste collection days that have yielded positive results and will continue to be implemented.

Figure 13-6: USEPA Superfund Sites in Mariposa County

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13.6 EMERGENCY EVACUATION

Mariposa County has prepared a Draft Evacuation Plan (March 2001), and is working on a Comprehensive Emergency Management Plan to meet the requirements of Government Code §8607(a) in accordance with the California State Standardized Emergency Management System (SEMS) to manage and regulate the responses of multi-agency and multi-jurisdiction emergencies.

The County created a General Response (Field) Checklist in order to standardize the emergency response procedures. It has also established evacuation staging areas (short-term method to gather evacuees in the advance of a fire, flood, or other disaster). Accordingly, the Evacuation Plan provides that:

Should the need for an evacuation be determined by an Authority Having Jurisdiction (AHJ), the following [Agency] sites shall be used as staging areas for evacuees and citizens seeking information. Affected agencies, (Sheriff's Office, County Fire/OES, Human Services, Red Cross, etc. as appropriate) shall set up a public information center at this site and continue the operation until the incident is demobilized. Should a shelter operation become necessary, the Department of Human Services will request and coordinate the opening of congregate care facilities with the Merced/Mariposa Chapter of the American Red Cross. Salvation Army and other organizations involved in disaster services will also be contacted and coordinated by the Department of Human Services staff. Table 13-4 lists the County's evacuation staging areas.

Table 13-4: Evacuation Staging Areas

Community Service Area	Staging Area
Midpines	Midpines Fire Station , Fairgrounds, Cedar Lodge
Catheys Valley	McCay Hall
Airport-Mt. Bullion	Fairgrounds & Bear Valley Store
Coulterville	Coulterville Park
Bridgeport	Fairgrounds & McCay Hall
Buck Meadows	Groveland Park, Greeley Hill Store
Lushmeadows	Lushmeadows Community Center, Woodland Store
Greeley Hill	Greeley Hill Market, Coulterville Park
Ponderosa Basin	Ponderosa Chapel, Woodland Store
El Portal	Cedar Lodge, El Portal Community Center
Fish Camp	Tenaya Lodge, Wawona Hotel, Station 12 (Oakhurst)
Hunters Valley	Bear Valley Store, Hornitos Post Office
Mariposa	
Bootjack	Bootjack Market, Fairgrounds

Source: Draft Evacuation Plan, Mariposa County, March 2001

If the situation should arise that one of the pre-determined sites is inappropriate to use due to the nature of the disaster, AHJ may decide to utilize another site. The alternate site must be the next closest safe location. The Mariposa County Fairgrounds has been determined to be the main shelter site for large scale disasters. If that location is utilized by emergency operations, it may not be available for shelter use. In that instance, other safe locations will need to be found.