

## **Part One, Section Six** **Threat Summary and Assessment for** **City of Bradbury (CW-#8 & #48)**

This section of the Basic Plan consists of a series of threat summaries based on the City's Safety Element, dated January 16, 2007 of the General Plan and the Local Hazard Mitigation Plan, dated April 9, 2007. The purpose is to describe the area at risk and the anticipated nature of the situation, which could result should the event threaten or occur.

The City is located within Disaster Management Area D in Los Angeles County and in the Southern Administrative Region of the State Office of Emergency Services. The City is located 24 miles Northeast of downtown Los Angeles. The City is bordered to the north by the Angeles National Forest, to the west by the City of Monrovia, to the east by the City of Azusa and to south by the City of Duarte. The latitude is 34.15 N and longitude: 117.97. The City has a residential population of 855 (Census 2000). The City consists of 1.9 square miles and is approximately 95% of residential population, there are no commercial or industrial areas and 5% of the City consists of open space, parks, institutional or vacant land (Land Use Element of Revised General Plan).

The City has one elementary school, no middle schools, or high schools, no private schools, pre-schools or child care centers and no colleges/universities. It has no major hospital or psychiatric facility (ies), there is one convalescent care/assisted living facilities in the unincorporated area of LA County in the middle of the City.

The City has three distinct areas: 1) Bradbury Estates, consisting mostly of 5-acre minimum estates, has a manned gate at its entrance; 2) Woodlyn Lane is also gated- with a keypad for entry- and is characterized by mostly 2-acre lots; 3) the balance of the City is not gated, and has lots generally ranging in size from 7500 square feet to one acre. There is a fairly large population of horses within the City, especially within the gated areas.

The City is served by the 210 and 605 freeways.

The following threat summaries have a potential to impact the City:

- An earthquake could impact major segments of, or the total population.
- Many major highways (and light rail lines) pass near the City and transportation incidents (including hazardous material incidents) as well as pipeline ruptures or illegal dumping could affect the City.
- Many areas of the City may be subject to flooding, due to flash flooding, urban flooding (storm drain failure/infrastructure breakdown), downstream flooding, etc.
- The City has not historically been vulnerable to tropical storms and severe winter storms.
- Some areas of the City may be subject to landslides, mud and debris flows.
- The City may be subject to severe weather, including drought, winds, heat and cold.
- Some areas of the City are identified as wildland/urban interface and may be subject to wildland fires.

- It is not likely that a tsunami could impact the coastal portion of the city, inflict significant damage and possible loss of life.
- A transportation incident such as a major air crash, light train derailment or trucking incident could impact areas within the City.
- There are no major dams located in or upstream from the City.
- A civil unrest incident could impact areas within the City or the entire City.
- The entire Los Angeles Basin is considered as a possible risk area for a nuclear event or act of terrorism; therefore both sheltering and evacuation issues should be considered.

Any single incident or a combination of events could require evacuation and/or sheltering of the population. Neither the City nor the County of Los Angeles has the capability to plan for the organized evacuation of the basin; therefore, the extent of planning at this time is restricted to assisting and expediting spontaneous evacuation. In the increased readiness stage, expedient shelters will be utilized as appropriate and information will be provided to the public as the City no longer maintains public fallout shelters.

The City contracts with Los Angeles County for the following services: police, fire and public works. The City contracts with RKA Consulting for Engineering, LDM Associates for Planning Services and VCA Code Group for Code Enforcement and Building and Safety Services. The City relies on CONNECT CTY for communications assistance. The City also relies on the San Gabriel Pomona Valley American Red Cross for assistance with emergency shelters and other necessary emergency services.

The following threat assessments identify and summarize the hazards that could impact the City.

Threat Assessment 1	Major Earthquake
Threat Assessment 2	Hazardous Materials
Threat Assessment 3	Flooding
Threat Assessment 4	Dam Failure –
Threat Assessment 5	Fire
Threat Assessment 6	Landslide/Mudflow
Threat Assessment 7	Tsunami –
Threat Assessment 8A	Transportation – Air Crash
Threat Assessment 8B	Transportation – Train Derailment
Threat Assessment 9	Civil Unrest
Threat Assessment 10	Terrorism
Threat Assessment 11	Public Health Emergency (Pandemic)
Threat Assessment 12	National Security Emergency

References: For more detailed information and maps, refer to the City's Local Hazard Mitigation Plan.

## City - Map

**(Insert Map of Jurisdiction)**

## **Threat Assessment 1 Major Earthquake**

### **General Situation**

A major earthquake will cause significant social disruption and damage to buildings and infrastructure due to severe ground shaking. A large earthquake, catastrophic in its effect upon the population, could exceed the response capabilities of the individual cities and the Operational Area. Response and disaster relief support would be required from other local governmental and private organizations, and from the state and federal governments.

The extent of damage from an earthquake is determined by the magnitude of the earthquake, distance from the epicenter, and characteristics of surface geology. This hazard is the primary cause of the collapse of buildings and other structures.

Los Angeles County is prone to major earthquakes from seismic faults, including the San Andreas Fault, the Newport-Inglewood Fault, and dozens of other faults throughout the County. These are illustrated on **Attachment 1, Earthquake Fault Map**. Earth scientists consider Los Angeles County to be continually prone to moderate to major earthquakes.

Many areas may have buildings destroyed or unusable due to the phenomenon of liquefaction, which occurs during severe ground shaking in soft, poorly graded granular soils where there is a high water table. Structures above the liquefaction strata may sink or structurally fail; pipelines passing through liquefaction materials may sustain an unusually large number of breaks.

### **Specific Situation**

A major earthquake occurring in or near Los Angeles County has the potential to cause many deaths and casualties, extensive property damage, fires and hazardous material spills and other hazards. The effects could be aggravated by after shocks and by the secondary effects of fire, hazardous material/chemical accidents and possible failure of waterways and dams.

The shaking from a major earthquake has the potential to cause serious to catastrophic damage to buildings, including hospitals, businesses, schools, public service agencies, and other buildings critical to public and private use. Older buildings, including unreinforced masonry structures, are particularly vulnerable to damage from earthquakes. A major earthquake can also cause serious damage to dams, railways, airports, major highways and bridges, utilities, telephone systems, and other critical facilities. The damage can cause hazardous materials releases and extensive fires.

Extensive search and rescue operations may be required to assist trapped or injured persons. Emergency medical care, food and temporary shelter could be required by injured or displaced persons. In the most serious earthquakes, identification and burial of the dead could exceed the capacity of the Coroner. Public health will be a major concern, due to potential contamination of water sources. A major earthquake will be a traumatic experience for people in Los Angeles County. Mental Health counseling will be needed for

an extended period. A major earthquake will aggravate existing social problems, such as poverty and unemployment.

Evacuations of areas downwind from hazardous material releases may be essential to save lives. Many families could be separated, particularly if the earthquake should occur during working hours. Emergency operations could be seriously hampered by the loss of communications and damage to transportation routes within the disaster area and by the disruption of public utilities and services.

The negative economic impact on Los Angeles County and its cities due to a major earthquake could be considerable, with a loss of employment and of the local tax base. A major earthquake could cause serious damage and/or outage of critical data processing facilities. The loss of such facilities could curtail or seriously disrupt the operations of banks, insurance companies and other elements of the financial community which could affect the ability of local government, business and the population to make payments and purchases.

The damage to water systems could cause water pollution or water shortages. Two of the three major aqueducts serving Southern California are expected to be out of service from three to six months following a major event; only the Colorado River Aqueduct is expected to remain in service. Ruptures could occur along the water pipelines in the County; damage to reservoir outlets could take weeks to repair. The majority of water wells are expected to be disabled by loss of electricity and the lack of backup power sources. In addition, shear forces could render a third of the wells inoperative for an indefinite period.

### **Emergency Response Actions**

Emergency response actions applicable to all hazards are included in **Part Two Annexes, Checklist Actions for each Section.**

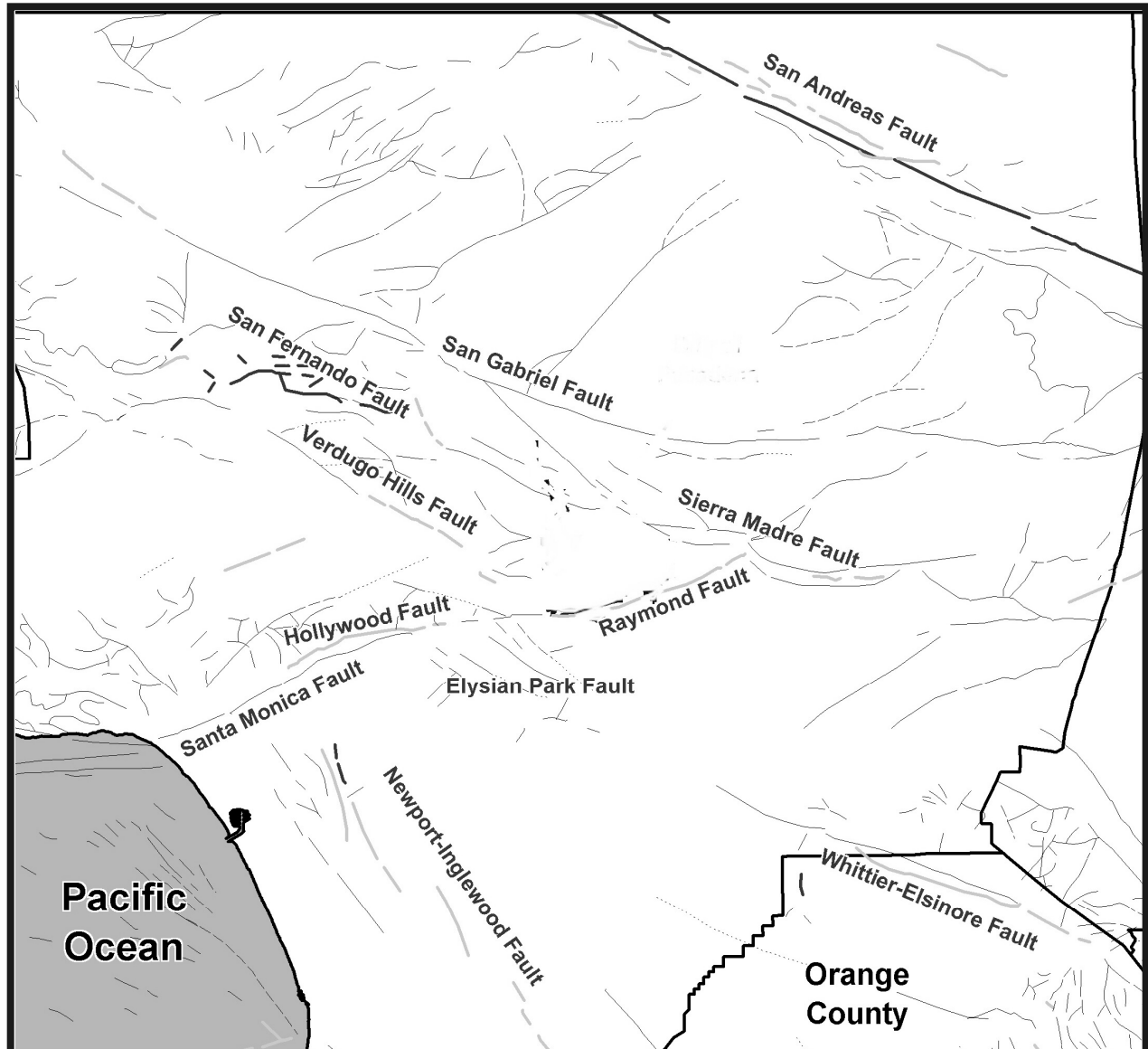
Note: For more detailed information and maps on shaking intensity, liquefaction, etc., refer to the City's Local Hazard Mitigation Plan.

Attachment 1 — Southern California Earthquake Fault Map

Attachment 2 — Abridged Modified Mercalli Intensity Scale




Attachment 3 — Richter Scale

**Attachment 1, Threat Summary 1  
Earthquake Fault Map  
(Or Insert a City Earthquake Fault Map)**



Source: Jennings, 1994

**Map Explanation**

-  Fault Showing Evidence of Historic Rupture.
-  Fault Showing Evidence of Holocene Rupture.
-  Fault Showing Evidence of Pre-Holocene Rupture.

## Attachment 2, Threat Summary 1 Abridged Modified Mercalli Intensity Scale

Intensity Value and Description	Average Peak Velocity (cm/sec)	Average Peak Acceleration (g = gravity)
I. Not felt except by a very few under especially favorable circumstances (I Rossi-Forel scale). Damage potential: None.	<0.1	<0.0017
II. Felt only by a few persons at rest, especially on upper floors of high-rise buildings. Delicately suspended objects may swing. (I to II Rossi-Forel scale). Damage potential: None.		
III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing automobiles may rock slightly. Vibration like passing of truck. Duration estimated. (III Rossi-Forel scale). Damage potential: None.		
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 a heavy truck striking building. Standing automobiles rocked noticeably. (IV to V Rossi-Forel scale). Damage potential: None. Perceived shaking: Light.	1.1 – 3.4	0.014 - 0.039
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. (V to VI Rossi-Forel scale). Damage potential: Very light. Perceived shaking: Moderate.	3.4 – 8.1	0.039-0.092
VI. Felt by all, many frightened and run outdoors. Some heavy furniture moved, few instances of fallen plaster and damaged chimneys. Damage slight. (VI to VII Rossi-Forel scale). Damage potential: Light. Perceived shaking: Strong.	8.1 - 16	0.092 -0.18
VII. Every body 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 Rossi-Forel scale). Damage potential: Moderate. Perceived shaking: Very strong.	16 - 31	0.18 - 0.34
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. (VIII+ to IX Rossi-Forel scale). Damage potential: Moderate to heavy. Perceived shaking: Severe.	31 - 60	0.34 - 0.65
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. (IX+ Rossi-Forel scale). Damage potential: Heavy. Perceived shaking: Violent.	60 - 116	0.65 – 1.24
X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks. (X Rossi-Forel scale). Damage potential: Very heavy. Perceived shaking: Extreme.	> 116	> 1.24
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 air.		

Modified from Bolt (1993); Wald et al. (1999)

### Attachment 3, Threat Summary 1 Richter Scale

